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THE

PENNY CYCLOPÆDIA

OF

THE SOCIETY

FOR THE

DIFFUSION OF USEFUL KNOWLEDGE.

VOLUME I.

A — AND E S.

LONDON:

CHARLES KNIGHT, 22, LUDGATE STREET, AND 13, PALL-MALL EAST.

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PREFACE TO VOLUME THE FIRST.

In the course of the regular publication of the Numbers and Parts of the Penny Cyclopaedia, the purchasers of the work will have been enabled to compare its general execution with the announcements of the original Prospectus. The completion of a volume appears to call upon the Conductors for a few explanatory observations.

The plan of this work differs in a considerable degree from most other Cyclopaedias. These have generally given elaborate treatises on each branch of knowledge, often referring for the explanation of each term, as it occurs in the alphabetical order, to the general treatise. The plan of the Penny Cyclopaedia, as it is specially intended as a book of reference, is not to attempt to form systems of knowledge, but to give pretty fully, under each separate head, as much information as can be conveyed within reasonable limits. But whilst it endeavours to present in detail the explanation of those terms of Art and Science, the right understanding of which is independent of any system, it also attempts to give such general views of all great branches of knowledge, as may help to the formation of just ideas on their extent and relative importance, and to point out the best sources of complete information.

As this plan excludes all long essays and treatises, it necessarily leads to giving more ample space to the separate heads than is done in most Cyclopaedias; and in doing this, it is often found difficult to determine the point where the selection of terms must end. This is particularly the case as to names of Persons and Places, which unavoidably form a large part of every book of general reference. It is hardly possible to fix any rule which will not either exclude something that ought to be admitted, or include names of very little importance. Something, therefore, must be left to the judgment of those who contribute to, and superintend, such a publication. It will be observed that the plan of the Cyclopaedia has rather been enlarged, since the earlier Numbers, as to the names admitted, and somewhat also, perhaps, in the length of the more important articles. It would appear that, in the proper conduct of such a work, some practice and experience are peculiarly necessary. The difficulty of forming a complete and satisfactory list of words can only be estimated by those who have made the experiment. On looking into the best works of this class already published, it will be found that, while they all differ very considerably as to the words inserted, none are without some omission that would be better supplied. Nor can the Editors of the Penny Cyclopaedia congratulate themselves on having inserted every term or name that ought to have found a place, though they hope that in the progress of the Work they will be better able to guard against any omission.

As to errors in the articles themselves, either of incorrect statements of facts, or of false deductions from premises, some such are unavoidable in every large work, however carefully the subject-matter has been weighed, or however scrupulously the writer may have discharged his duty. In a periodical publication, in which a number of writers are necessarily combined, and where the matter is almost infinitely varied, the causes of error are still more numerous. The experience of one year, however, enables the Conductors of this Cyclopaedia to state with confidence, that whatever errors there may be in the first volume, (and they trust they are neither very numerous nor very important,) they feel no doubt that the work in its progress will continue to
improve. At least, no exertions will be spared to procure sound information on all subjects, and to convey it in clear and perspicuous language. The Conductors have to express their thanks to numerous correspondents, both for valuable suggestions and criticisms, of which, in many cases, they have been enabled to avail themselves. In some instances, where the accuracy of statements has been called in question, they believe that the Cyclopaedia is correct; and in other instances, the difference is no more than may be expected where authorities are at variance, and opinions may naturally be expected to differ somewhat as to their precise value. As most of the communications referred to were anonymous, the Editors have no other means of thanking the writers than by this general acknowledgment.

It may be necessary to mention that a few of the more trifling errors that are most obvious—such as the breaking off of a letter, or a stop at the end of a line—are the unavoidable consequence of the process of stereotyping. Before this process commences, the usual labour of revision is complete; but in producing the stereotype plate new errors are sometimes created. It is the intention of the Conductors of this Work to subject even the stereotype plates to a careful examination, so that injuries of this mechanical nature may be repaired.

In the commencement of their undertaking, the Editors, bearing in mind the difficulty of securing at once an efficient body of contributors, recommended to the Committee only to attempt the publication of Six Numbers in each month. Their present stock of materials, and their reliance upon their numerous coadjutors, founded upon ample experience, have induced them to desire that the work should proceed at a quicker rate. In this they feel satisfied that they only second the wishes of the great body of its purchasers. The work will therefore continue upon the following arrangements:

1. The First Volume of the Penny Cyclopaedia—containing Eleven Parts—is now concluded; and will be sold, handsomely bound in cloth, lettered, at Seven Shillings and Sixpence.

2. Commencing with December, 1833, Two Numbers of the work will be published regularly every Week, without Supplements, so that sometimes Eight, and sometimes Ten Numbers will appear in each calendar month.

3. On the 1st of January, 1834, Part XII. will be published, price Ninepence, and the Monthly Parts regularly continued at that price.

4. On the 1st of September, 1834, the Second Volume, containing Eight Ninepenny Parts, will be published, bound uniformly with Vol. I., at Seven Shillings and Sixpence;—and the future volumes will be completed every Eight Months.

November 13, 1833
A.

A, the first letter of the alphabet in the English, and many other languages. As a sound, its power in the English language is at least fourfold, as in the words father, call, tame, and hat. The first of these sounds is that which generally prevails in other languages. The modified pronunciation of the sound in father, etc., is due to the fact that three at the end of the word; in call and similar forms, the peculiarity arises from the letter i; so that the only true sounds of the vowel are perhaps the long sound in father, and the short one in hat. The printed forms of this letter, viz., the capital A, the small character a, and the italic a, are all derived from a common form, differing but slightly from the first of the three. In the old Greek and Latin alphabets, from which our own has descended, the following were the ordinary figures of this letter—

A A A A A

among which, the fourth and fifth only differ from the rest in the rounding of the angle: the form consisting of straight lines being well adapted for writing on stone, metal, &c.; the rounded letter, on the other hand, being better suited for expeditious writing, with softer or more flexible materials.

From this last our two small characters are easily deduced.

A (in music), the sixth note in the diatonic scale, answering to the A of the Italians and French. It also stands for the alto parts.

A or AN, the indefinite article. Of the two, an is used before a vowel. Where the following word begins with a consonant, it being more troublesome to express the final n, this letter, from not being pronounced, ceased to be written. Thus we say an emperor, but instead of an king, we find it more convenient to say a king. Sometimes a virtual consonant exists at the beginning of a word without being written, as in union and once, where the ear catches the initial sounds of y and s, yonun and unce. Before such words it is customary to drop the final letter of the article, at least in pronunciation, and there can be no good reason for not writing a union, a once beloved monarch.

On the other hand, whenever A is mute, we should retain the n both in writing and speaking, thus, a history, but an historical work. That an and not a is the primitive form of the article, is proved by the Anglo-Saxon an, and the German ein; indeed, our own numeral one is only another and fuller form of the same word. In such phrases as three shillings a pound, the article evidently has this meaning. The double shape of our article has led to a corrupt mode of writing certain words, thus from an eft was deduced a nefi, a nest; and the reverse seems to have taken place in the change of a radder to an adder. The letter a often appears prefixed to nouns so as to constitute a kind of adverb, as afoot, aside, aboard, now-a-days, &c. These, as Horne Tooke observes, are all abbreviations of on foot, on side, on board, now-on-dates, &c., which thus occur in our old English poets. This on is an Anglo-Saxon preposition with the meaning of in. In many words now in use the a in the beginning takes the place of on. Alive, for instance, means on life, i.e., in life. "So be full asleep," in the old translation of the New Testament is, he "fell on sleep."

The a, formerly often prefixed to our participles in ing, both in the active and passive sense, as the house is a-preparing, he is gone a-walking, has the same origin.

A, a small river which flows into the Ems, on the east bank, in the district of Lingen, which is in the kingdom of Hanover. The little town of Frezem stands on the Aa. The singularity of the name, rather than the importance of the river itself, deserves a short notice. Aa is possibly a corruption of the word aue, which means green pastures or meadows, and may also have been used to denote the low flat lands along the banks of the river. Aue is the name of a small tributary of the Elbe, and also of a brook in the principality of Schaumburg-Lippe. Aue is also the name of a mountain village, situated in a romantic valley of the Erzgebirge circle of the kingdom of Saxony.

Aa, a branch of the Aar, in the canton Aargau; a small river of Jutland; and also the name of one of the streams at the confluence of which Breda stands, and the name of a tributary to the Dommel in N. Brabant. The wide diffusion of such a name shows it must have some general significance, applicable to all the rivers to which it belongs.

The word Aa may be the same as Aach, the name of several German rivers, with the guttural ch dropped. The Celtic Ac, or Arch, water, is probably the origin of all these names.

AALBORG, one of the four divisions, and the most northern part, of the peninsula of Jutland, properly so called. It contains about 2820 English square miles, and perhaps about 130,000 inhabitants. The principal town, which is also called Aalborg, stands on the south side of the narrow channel which joins the Limfjord with the sea, and is a sea-port, with a considerable trade in grain and herrings. From 400 to 500 vessels enter the port annually. The number of inhabitants is about 5300. Aalborg is a bishopric, and has a good academy or cathedral school founded in 1553, with some manufactures of leather, sugar, and tobacco. The name Aalborg means Eel-town, a great number of eels being caught in the neighbourhood: it is in N. lat. 57° 5', E. long. 10° 5'. All the other towns of the district are small: Thisted, the next in size, does not contain 2000 inhabitants.

AAR, the principal branch of the Rhine in Switzerland. [See AARAU.]

Another small branch of the same name falls into the Rhine, in the duchy of Nassau; and a third Aar joins the Rhine in the Prussian province of the Lower Rhine, on the west side, about twelve miles above Bomm.

AARD-VARK (Orycteropus, Geoffroy*), in Zoology, a genus of animals belonging to the class Mammalia, and order Edentata.

In a work, like the Penny Cyclopædia, where knowledge is communicated under separate heads arranged in alphabetical order, it is an unavoidable consequence of the

* It is usual, in works of Natural History, to place the scientific name of a species after the popular or local name. By the scientific name the species is recognised in every country, while the popular or local name is limited in its use. But as the same species is often called by several scientific names, each of which has been given to it by a different naturalist, it is also usual to place the name of the naturalist after the word which he has invented or adopted. Thus, Aard-vark is the Dutch name of the animal in question; Orycteropus the scientific name by which it is commonly known; and Geoffroy St. Hilaire (generally abridged Geoff.) the name of the naturalist who gave it the scientific denomination.

No. I. [THE PENNY CYCLOPÆDIA.]
general plan that terms must be occasionally employed which have not been previously defined, and of which, in a regular treatise, the explanation would necessarily precede the use. To obviate this inconvenience as much as possible, the term is proposed, without entering into the minute details of the subject, or anticipating information which properly belongs to a different part of the work, to give a brief explanation of such terms as they occur; so that the general reader may be enabled to comprehend their meaning and import without the trouble of referring to other sources.

Among the historical description of the genus which more properly constitutes the subject of the present article, we shall, therefore, give a short explanation of the terms Mammalia and Edentata, as well as of the technical import of the words Class, Order, Genus, and Species, in the most constant part of the work, to give a brief explanation of such terms as they occur; so that the general reader may be enabled to comprehend their meaning and import without the trouble of referring to other sources.

The word Mammal (Mammalia is the Latin form of the plural) was formed by Linnaeus from the Latin mamma, signifying a breast or udder, in the same manner as our common word animal is formed from anima, life or soul; and was intended to denote those animals which suckle their young, and for which there is no generic name in any known language. A more definite and comprehensive term than the common word Quadruped, which more nearly expresses the exact idea than any other, has no relation to the natural affinities which we observe among animals, since it excludes man and the cetaceous tribes (such as whales), at the same time that it embraces the lizards, chameleons, and reptiles, which have but a very remote analogy to the true Mammalia.

The vernacular term Beast, which we often use in opposition to Birds and Fishes, is still more vague and indeterminate. The word animal, however, so happily imagined by the great Swedish naturalist, is liable to none of these objections, but expresses, in a distinct and definite manner, the most prominent functions and natural limits of this class of animals. In the constant use which we shall be obliged to make of this term, we shall adopt the common English form of the plural, Mammals, instead of the Latin form, Mammalia, though the latter is most generally used by British zoologists. The word Mammals is as regularly formed, and therefore as admissible into the English language, as animal and animals.

Mammals, therefore, in the technical language of zoologists, constitute a class, or primary division of the animal kingdom; and are, in this respect, co-ordinate with Birds, Fishes, Reptiles, and Insects; all of which are so many Classes. The term Order denotes a subordinate division, and bears the same relation to a class which this latter does to a kingdom; so that a class is made up of orders, in the same manner as a kingdom is made up of classes. The next inferior sub-division to an order is a Genus; and this is itself composed of Species, the lowest link in the chain of scientific classification, and that which admits of no further division. A species, then, comprehends all those animals which may reasonably be supposed to be descended from one common, original stock; and in this sense all men compose but a single species, all horses compose but a single species; and in the same manner all oxen, sheep, goats, dogs, &c. compose respective and appropriate species. Difference of climate, variety of food, and other local and extraneous circumstances, undoubtedly produce striking changes in the form, size, and colour of different individuals, even of the same species; examples of which are sufficiently abundant among all domestic animals, and that, too, in exact proportion to the degree of their domestication, and to the care and attention which have been bestowed upon them by man. But these variations are confined within certain prescribed limits, and the utmost power and ingenuity of man have been exerted in vain to produce and perpetuate a new race or species of animals. He has succeeded, to be sure, in procuring the Mule from the intercourse of the Horse and the Ass, two very distinct species, though in some respects closely allied to one another; but this mule is itself a barren, unproductive being, which Nature regards as a monster, and to which she has denied the power of continuing its race.

An example will best illustrate the true import of the terms which we have been here endeavouring to explain. Thus the dog, the fox, the wolf, and the jackal, are all so many species of one common genus; as are likewise the lion, the tiger, the panther, the lynx, and the common cat, species of another genus. These are respectively called the genus Canis, or the dog kind, and the genus Felis, or the cat kind; and compose, together with the hyenas, civets, weasels, bears, badgers, &c. the natural Order of Carnivora, or flesh eaters, which have six incisor or front teeth in each jaw, and live upon the flesh of other animals. Another natural order of Mammals comprises all those which, like the rat, the squirrel, the rabbit, and the guinen-pig, have only two large teeth in front, which they continually employ in gnawing whatever falls in their way; they are, therefore, called Rodentia, or gnawers. These, at least in the number of their incisor teeth, form the intermediate link which connects the Carnivora with the Edentata, or next order of Mammals, which are distinguished by having no front teeth at all, and are therefore constrained to live entirely upon a vegetable regimen, or upon insects, carrion, and other soft substances which require little cutting or mastication. These different Orders of Carnivora, Rodentia, and Edentata, together with the Reptilina or reptilaceous animals, the Cetaceus or whale kind, and others less important, which it is unnecessary here to enumerate, compose the class Mammalia.

Having thus briefly explained the signification of these technical terms which will occur most frequently in the subsequent Zoological articles, we shall return from this digression to the more immediate object of our present consideration.

The Orycteros is now separated from the Myrmecocophaga, or Ant-eaters of Linnaeus, with which it had been formerly associated. In its anatomical structure, it bears a much closer relation to the armadillo than to any other quadrupeds, not even excepting the ant-eaters, with which it was formerly associated. Like these animals, the orycteros has neither incisors nor canine teeth; and its feet are equally provided with large and powerful claws, for digging up roots and insects, and for forming subterraneous burrows. Its molar teeth, however, are altogether peculiar both in form and structure, and have no resemblance to the teeth of any other known animal. Of these there are five large ones on each side (both in the upper and under jaws), which are always permanent; and a variable number of from one to three smaller ones, placed in front of the others, and apparently representing the false molars of ordinary quadrupeds. The rest of the large molars is smaller than any of the other four, and of a cylindrical form, somewhat compressed or flattened on the sides; the second is rounder; the third and
The feet are each composed of two similar cylinders, as it were, soldered together, and the last is a simple cylinder, like the first and second. Immediately in front of these are the small or false molar, which, being of a deciduous nature (falling annually), vary in number according to the individual. In their internal structure these teeth differ from those of all other animals. They are pierced throughout their whole length with an infinite number of small capillary tubes, running in the same longitudinal direction, and opening at the root or under part of the teeth. The crowns or upper surfaces of the teeth are covered with enamel, but after this has been worn away by the continued process of mastication, as in very old animals, the openings of these small canals may be plainly distinguished upon the surface also; and in this state, the teeth, to use the appropriate comparison of Baron Curvier, resemble the joint of a cane cut across, and exhibiting the numerous minute vessels which perforate its interior. Properly speaking, these teeth are destitute of real roots, and are therefore, like the tusks of the elephant, and the incisors of the rodentia, capable of being indefinitely increased, by the deposit of new matter on the under extremity, to counterbalance the continual wear of the upper surface.

In the form of the extremities the ocyteropus resembles the armadillos still more nearly than in the nature of its dental system. The legs are remarkably short and stout; the feet plantigrade (that is to say, the animal walks upon the whole sole of the foot, as man and the bear, instead of bringing of the point of the toe only in contact with the ground, as may be observed in the dog, horse, &c.); and the toes, of which there are four on the fore foot and five on the hind, are armed with extremely large, powerful claws, flattened horizontally, and scooped or hollowed out on the under surface, so as to form a most efficient instrument for digging and burrowing beneath the surface of the earth. This process is still further facilitated by the oblique form of the anterior extremities, arising from the unequal length of the toes; the two interior being considerably longer than the others, and the whole diminishing gradually from the index (or toe corresponding with the fore-finger) outwards. In other parts of its anatomy the ocyteropus resembles both the armadillos and the ant-eaters, and particularly in the form and structure of the stomach and alimentary canal. The reader who is desirous of further information upon these subjects may consult Curvier's Lesions d'Anatomie Comparée, and his great work Sur les Ossements Fossiles, from which the details here given are for the most part abridged.

The only species of this curious genus with which zoologists are at present acquainted is the Aard-vark (Ocyteropus Capensis), called tonnag by the Korah Caffres, and goomp by the Hottentots. It is an animal extremely common in some parts of Southern Africa, though, from its nocturnal habits and extreme timidity, it is not often frequently seen as many others which are in reality scarcer. Its common name of aard-vark, or earth-pig, by which it is known among the Dutch inhabitants of the Cape of Good Hope, is derived as well from its habit of burrowing as from the general appearance which it bears, at first sight, to a small, short-legged pig. This animal, when full grown, measures about three feet five inches from the snout to the origin of the tail; the head is eleven inches long; the ears six inches; and the tail one foot nine inches. The head is long and attenuated; the upper jaw projects beyond the lower, and ends, as in the common hog, in a truncated, callous snout, having the nostrils pierced in the end of it; the mouth is small for the size of the animal, and the tongue flat and slender, not cylindrical as in the true ant-eaters, nor capable of being protruded to such an extent as in these animals: it is, however, covered in like manner with a viscous or glutinous saliva, which firmly retains the ants upon which so many of its labours are bestowed. The eyes, which are of moderate size, are situated between them and the snout, about two-thirds of the distance from the termination of the latter. The body of the aard-vark is thick and corpulent; the limbs short and remarkably strong; the hide thick, tough, and nearly naked, having only a few stiff hairs, of a pale reddish-brown colour, thinly scattered over it, excepting on the hips and thighs, where they are more numerous than elsewhere. The tail is about half the length of the body and head together, and, like the body, is nearly naked; it is extremely thick and cylindrical at the base, but decreases gradually towards the extremity, and ends in a sharp point.

This formed the aard-vark is in all respects admirably fitted for the station which Nature has assigned to it in the grand economy of the animal kingdom. It feeds entirely upon ants, and in this respect fulfils the same purpose in Southern Africa which is performed by the myrmecophaga in America, and the echidna in New Holland. To those who are only acquainted with the size and nature of these insects in the cold northern climates of Europe and America, it may seem surprising how an animal so small can so effectually protect itself from these unctuous and slippery ants, and yet be invariably found fat and in good condition. But the ants and termites of tropical countries are infinitely more numerous than those which inhabit more northern latitudes, and are more savage as sometimes to be the cause of great injury to the aard-vark, and yet be invariably found fat and in good condition. However this may be, their importance in fattening poulty is well understood at the Cape, and the farmers collect them by bushels for this purpose.

These insects raise mounds of an elliptical figure to the height of three or four feet above the surface of the ground; and so numerous and so gigantic are these mounds in some parts of Southern Africa, that they are frequently seen extending over the plains as far as the eye can reach, and so close together that the traveller's waggon can with difficulty pass between them. They abound more especially in the Zululand, or sour districts, so called from producing a certain sour grass; are seldom found on the Karroo or downs, and never in very dry or woody districts. By constant exposure to the rays of a powerful tropical sun they become so hard and indurated on the outer surface that they easily support the weight of three or four men, and even a loaded waggon will sometimes pass over without crushing them. Internally these mounds are of a spongy structure, something resembling a honeycomb, and are so completely saturated with animal oil that they inflame without difficulty, and are an excellent substitute for wood or coal.

Wherever ant-hills abound the aard-vark is sure to be found at no great distance. He constructs a deep burrow in the immediate vicinity of his food, and changes his residence only after he has exhausted his reserve. The entrance of which he burrows beneath the surface of the earth is said to be almost inconceivable. We have already seen how admirably his feet and claws are adapted to this purpose; and travellers inform us that it is quite impossible for a man to dig him out, as he can dig with a few minutes more than he bury himself at a distance far beyond the reach of his pursuers; and, further, that his strength is so great as to require the united efforts of two or three men to drag him from his hole. When fairly caught, however, he is by no means refractory, but is easily dispatched by a slight blow over the snout. The aard-vark is an extremely timid, harmless animal, seldom removes to any great distance from his burrow, is slow of foot and a bad runner, and is never by any chance
AARD-WOLF (Proteles, Geof.), in Zoology, a genus of nocturnal carnivorous mammals first described by M. Louis de Geoffroy St. Hilaire for the purpose of giving a place to a new and singular quadruped unrecorded from the interior of Caffarbia by the late traveller Delalande. The three specimens of this interesting animal procured by M. Delalande were all, unfortunately, of an immature age, and had not acquired their permanent teeth, so that the characters of their adult dentition still remain to be determined. Enough, however, is known to enable us to assign the most prominent and important genus, and with a tolerable degree of accuracy, the habits and economy of the animal.

It is an observation at least as old as Pliny, that Africa is a land of wonders, which continually produces a succession of new and singular objects. In zoology, the maxim of the Roman philosopher, as to African wonders, is verified almost daily. Among the most recent examples of this fact we may adduce the discovery of the proteles; an acquisition of peculiar interest to the zoologist, as forming the intermediate link which connects the civets with the dogs and hyenas, three genera which have hitherto stood, as it were, insulated from surrounding groups, and widely separated from one another. The dogs and hyenas, indeed, had been united a short time previous by the discovery of an intermediate species in the same locality which has since produced the proteles; but it is this latter species alone, which, uniting the characters of all these three genera, enables us to trace their natural affinities, and to assign to them their proper position in the scale of existence.

The general appearance and form (bony) structure of a hyena, this truly singular animal unites the head and feet of a fox, and the teeth and intestines of a civet. It has five toes on the fore foot, and four only on the hind; the inner toe is placed, for the dogs, at some distance above the others, and therefore never touches the ground when the animal stands or walks. The legs also are completely digitigrade; that is to say, the heel is elevated, and does not come into contact with the surface, as in man and other similarly formed animals which walk upon the whole sole of the foot, and are thence said to be plantigrade.

It is of great importance to remark the difference between these two modifications of the locomotive organs, because they have a very decided and extraordinary influence upon the habits and economy of the different animals. Digitigrade animals, which tread only upon the toes and carry the heel considerably elevated above the ground, have much longer legs than plantigrade animals, and are therefore especially fitted for leaping and running with great ease and rapidity. Accordingly, it will be observed that the horse, the stag, the antelope, the dog, and other animals remarkable for rapidity of course, partake strongly of this formation; and even their degree of swiftness is accurately measured by the comparative elevation of the feet. Inward observation and anatomical inspec tion will disclose the nature of this peculiar confonnation of the extremities of digitigrade animals, and are apt to confound the hough with the ankle, and to mistake for the knee what is really the joint. Thus we may learn, for example, that the hind legs of the horse, the knee was bent in a contrary direction to that of man. This is by no means true: a little attention to the succession of the different joints and articulations will show that what is called the cannon-bone in the horse, and other digitigrade animals, in reality corresponds to the instep in man, and that what is generally mistaken for the knee really represents the heel.

In the particular case of the proteles the natural effect of the digitigrade formation is, in some degree, lessened by the peculiar structure of the fore legs, which, contrary to the general rule observable in most other animals, are considerably longer than the hind. In this respect, also, the proteles resembles the hyena; and in both genera this singular disportion between the anterior and posterior extremities abridges the velocity properly due to their digitigrade conformation. It has been already observed that the only individuals of this genus which have been hitherto properly observed were young specimens, which had not acquired their adult dentition; but it was sufficiently obvious to the experienced eye of M. Cuvier, who first examined them, that the dental system of the mature animal must very closely resemble, if it be not actually identical with, that of the civets and genets. The young animal presented three small false molars and one tuberculous tooth on each side both of the upper and lower jaws; and we shall find, in the sequel, that the approximation of M. Cuvier is fully justified by the evidence of another accurate observer, who had an opportunity of examining this animal in its native regions.

The genus proteles contains but a single species,
of nature. It is fond of the society of its own species; at least, many individuals have been found residing together in one and the same locality, as they have the habit of noise and character, they have generally three or four different entrances to their holes, so that if attacked on one side they may secure a retreat in an opposite direction. Notwithstanding the disproportionate length of their fore legs they are said to have been seen running from one end of a room to the other, and to burrow, that one of M. Deland's specimens, perceiving itself about to be run down and captured, immediately ceased its flight, and began to scratch up the ground, as if with the intention of escaping from earth.

M. Isidore Geoffroy St. Hilaire, in his paper on the Proteles, inserted in the eleventh volume of the Mémôrnes du Museum, has bestowed upon this species the name of Proteles Lalandii. He has done so, in the belief that the species has not been hitherto described; but the name has not been considered proper, however, to substitute the specific name of Proteles Cristata, for that proposed in honour of M. Lalande, for both Sparmann and Levaillant have mentioned the nard-wolf long before the date of M. Deland's journey; and the former has not only described it with tolerable accuracy, but has even ascertained its true generic characters, and associated it with the civets, under the denomination of Vianna cristata. The passage alluded to will be found in his fine English translation of Sparmanni Travelers, vol. ii., p. 177.

In the Second Voyage of Levaillant, vol. ii., p. 369, mention is likewise made of this animal under the appellation of 'loup de terre,' which is a simple translation of its colloquial name.

Sparmann mentions having found ants in the stomach of the proteles, and these, it may be observed, are also a favourite food of the bear. The dental system of this animal would further lead us to suppose that, from Bourn and hyaena, it also partakes of the habits and bulbous roots, as well as upon carrion and the produce of the chase.

AARGAU, one of the twenty-two Swiss cantons. On the north the Rhine separates it from the grand duchy of Baden, 140 miles by land and 180 miles by water. The mountain bound of Zürich on the east. It takes its name from the river Aar, which rises in the glaciers that form the southern limits of the canton of Bern; and, after flowing through the lakes of Brienz and Thun, and past the towns of Bern, Soleure, and Aarau, falls into the Rhine on the south bank, about fourteen miles above Laufenburg. The whole length of its course is about 160 miles. The canton takes its name from the river Aar, the word Aargau signifying the province or district of the Aar: the same termination frequently appears in the names of such districts. The canton of Aargau is a pleasant, and in many parts a fertile, district, diversified by hills, mountains, and valleys. The chain of the Jura mountains runs through part of the country, but the Alps, both the Graubunden Alps and the Jura, are more of a manufacturing than agricultural country. This canton has paid great attention to the education of its people. The chief town is Aarau, which contains 4090 inhabitants; and has manufactures of silk, cotton, and leather; and good establishments for education. At Laufenburg are some falls in the Rhine, which impede the navigation of the river. A bridge here leads over the Rhine to the little village of Laufenburg, in Baden. Aargau contains many rich, busy, industrious towns; such as Zofingen with a good library, Lenzburg, Klingenau, Schinznach having near it the castle of Hapsburg, which is the original seat of the Imperial bank of Switzerland, and a good Lyceum. Each of the eight districts into which Aargau is divided has a secondary school. [See Journ. of Eduar., No. 6.] The area of the canton is estimated at about 770 English square miles, in Hassel's Statistics.

AARHUUS, the capital of that division of Jutland, containing 1800 English square miles, and 88,000 inhabitants; with a considerable portion of good soil. Aarhuus, the chief town, stands in N. lat. 56° 10', E. long. 10° 22', between the sea and a small lake, which, at its outlet, forms a port. The town is pretty well built, and contains a large cathedral church: the manufactures are cotton and woollen cloth, gloves, sugar-refining to a small amount, tobacco, and leather. The number of inhabitants is about 5000. Aarhus is the point in Jutland from which passengers generally set out to the island of Zealand, where they land at a place called Kallundborg, whence a road leads to Copenhagen. Aarhuus is about 100 miles W. N. W. from the capital. Randers, N. N. W. of the land of Jutland, and on the north side of a navigable river, has about 6000 inhabitants, whose branches of industry are similar to those of Aarhuus, with the addition of stockyards and brass-foundries. Randers has a grammar-school and good hospital.

AARON, the elder brother of Moses, and was, by the express appointment of Heaven, associated with that illustrious legislator in the enterprise of delivering their countrymen from Egyptian bondage, and conducting them to the Promised Land. Aaron, who was a ready and eloquent speaker, was the chief instrument employed in announcing the command of God to Pharaoh, and attesting it by the series of stupendous miracles recorded in the earlier chapters of the book of Exodus. After the passage by the Red Sea, in the wilderness, he was far from manifesting the steady confidence and undaunted disregard of popular clamour which characterized the conduct of his brother; but, notwithstanding the timidity and weakness which he had shown in yielding to the demands of the impatient and superstitious multitude, that he would make them a golden calf to worship, he was, in conformity to the divine purpose, consecrated to the priesthood, of which the highest office was committed to his family. Aaron, however, was not permitted to reach the promised land, any more than his brother Moses. Having ascended the summit of Mount Hor, in company with Moses and his eldest son Eleazar, he died there, after Moses, as commanded by God, had stripped off the vessels of his sacred office, and placed them upon his son. This event happened when Aaron was in the hundred and third year of his age, forty years after the departure of the Israelites from Egypt, and, according to the commonly received chronology, in the year 1451 b. c., or 2653 from the creation of the world. The history of Aaron is to be found in the book of Exodus, and the three following books of the Pentateuch.

AARON, the fifth caliph of the race of the Abassides, born 765, died in 809. [See ABBAS.]

AB, the fifth month of the ancient Hebrew year, but now the eleventh (or, in intercalary years, the twelfth), in consequence of the transfer of the new year from spring to autumn.

On the 1st day of Ab a fast is held in commemoration of the death of Aaron. On the 9th a very solemn fast is observed in remembrance of the destruction of the Holy Temple by Nebuchadnezzar in 586, n. c., and of the destruction of the second Temple by Titus, a. d. 70. This fast is considered the most sacred of all; on this day, in the synagogues, the lamentations of Jeremiah are publicly read, with other portions of the Bible, expressive of sorrow and desolation. No recreation is allowed from morning to evening, and the Sabbath-day of the Jews is held. The more serious Jews even abstain from all meat, except on the Sabbath-day. On the 18th, another fast is observed. All these fasts are postponed one day if they fall on the Saturday.

A little festival is celebrated on the 15th day of the month to commemorate an ancient custom, according to which the young girls of each tribe came forth into the fields clothed in white, and exhibited themselves in dances before the marriageable young men, with the view of being selected by them in marriage. This festival is called Tub-ab, or the fifteenth Ab, the word Tub expressing the characters T and B, or 6 and 9, used by the Jews for fifteen.

The month of Ab may begin in some years as early as the 10th July, in others as late as the 7th August. In 1833, it commences on the 17th July.

Ab is the name of the twelfth month of the Syrian year coinciding with our August.

AABDDE, the name of several African tribes which occupy the country lying between the Nile and the Red Sea, south of Kosseir, nearly as far as the latitude of Derr, 22° 47'. The Bisharey inhabit the mountains from thence southwards. Many of the Aabide have settled in Upper Egypt, on the east bank of the Nile, from Kenneh to Assouan, and thence to the Red Sea; and the rest are dispersed in various districts, and in the mountains, where they are spread as far as Suez. But the greater part still live like Bedouins, and set as guides to the Sennar caravans which set out from Darr, a place about ten hours' journey north of Assouan. The Aabide formerly guarded the caravans from Kenneh to Kosseir, on the Red Sea;
but they have been deprived of this branch of profit by the Mauzu and Atomy Arabs, who live to the north, and farm the profits of this line of road from the Pasha.

The Abalde have considerable property, but a very bad character; they are described as faithless, and unworthy of the Bedouin origin of which they boast.

These people are known in Upper Egypt for their excellent camels, and particularly for their domelaries. They trade principally in soma leathers, and a peculiar mode of acacia wool, which is sent as far as Cairo. The Abalde have few horses; they fight with other Arab tribes upon camels. Their arms are a target, lance, and sword. They are divided into three principal tribes, El Fukara, El Ashabati, and El Meliyeb.

Those who encamp with the Bisharey speak the language of the latter. The female children of the Abalde and Jamale Arabs, as Burchardt calls them, who inhabit the west bank of the Nile, south of Thebes, as far as the first cataracts, as well as the female children of all the people south of Kenech and Esna to the borders of Semnaar, undergo the operation of excision, which was an old Egyptian custom. [Compare Strabo, p. 924, Casaub.] The Abalde fight naked, except that they have a rag or napkin round their waists. A fight which Burchardt saw commenced with a shower of stones, for the repelling of which missiles, their targets appeared very useful. The combatants on each side were about thirty; and the results were, three men slightly wounded, and one shield clef t in two.

This account is from Burckhardt’s Travels in Nubia (London, 1819), who appears, from this and other passages, to consider the Abalde as of Arab stock; but if this be his meaning, it seems to be incorrect. Other writers say that the Abalde, who are of the same family as their southern neighbours, the Bishary, differ in appearance, habits and language from the Arabs. The latter fact might readily be established by a comparison of an Arabic and Abalde vocabulary; but we have not been able to find one of the latter language. That the Abalde have, at different periods, mixed with the Arabs is certain, and we believe have got their religion, such as it is, from the same nation. Their form, which is not that of the negro, their dark colour, and their long hair be-secured with grease, and hanging in ringlets, which have been compared in shape to corkscrews, show them to be of Nubian stock, and probably the remnant of a race long settled in these regions. The kind of head-dress which they wear is often seen on the Egyptian monuments, and a pretty correct notion of it may be formed from the following Egyptian painting, now in the British Museum.

The fact of the Abalde being camel-breeders, and using them in battle, remeeds singularly with the habits of the Arabians, as Herodotus calls them, who lived south of Egypt, and were in the army of Xerxes when he invaded Greece, B.C. 480.

It is conjectured by Ritter, that the Abalde, as well as the Bisharey, may be a remnant of that people, whom we hear of under the Roman Emperors by the name of Blemmyes. We hear no more of the Blemmyes after the Arab conquest of Egypt, but they appear under the generic name of Beja, as the great carriers between the Nile and Arab on the Red Sea, and, in fact, as a commercial people. The Bisharey, the Abalde, Barabans, &c. may be considered as different branches of the Beja stock. [See Bejas.] What reasons Herodotus had for calling the camel-riding people south of Egypt by the name of Arabs, it is difficult to say; only we may observe, that Arabia, properly so called, was then very little known; and the name of Arabs would be applied vaguely, and perhaps sometimes incorrectly, to many people, who lived a nomad life. For many Abalde customs, see Belzoni’s Researches, p. 309, 4to. [See Ritter’s Geography, Africa.]

ABACUS, in architecture, is a diminution of the architectural term Abacus, and is principally applied, when used at all, which is not often, to the tiles or squares of a tesselated pavement.

ABACUSCISUS, in architecture, is the level tablet, whether square or oblong, which is almost always formed on the moulded or otherwise enriched capital of a column, to support the horizontal entablature. [See the words Capital, Column, and Entablature.] The architectural application of the term Abacus, which in the original is applied to any rectangular tile-like figure, arises from a story which Vitruvius tells of the manner in which the foliated capital called the Corinthian originated.

ABACUS, a game among the Romans; so called from its being played on a board, somewhat in the manner of chess.

ABACUS, an instrument employed to facilitate arithmetical calculations. The name may be given with propriety to any machine for reckoning with counters, beads, &c., in which one line is made to stand for units, another for tens, and so on. We have here given the form of an abacus, such as we may recommend, for the purpose of teaching the first principles of arithmetic, the only use, as far as we know, to which such an instrument is put in this country. Its length should be about three times its breadth. It consists of a frame, traversed by stiff wires, on which beads or counters are strung so as to move easily. The beads on the right hand row are units, those on the next ten, and so on. Thus, as it stands, the number 5745 is represented upon the lower part of it.

For a more detailed account of the method of using this instrument for the purposes of instruction, see Numeration. There is an instrument sold in the toy-shops with twelve wires, and twelve beads on each wire, for teaching the multiplication-table, which may be made of more use if applied according to the method which will be described in the article referred to.
The abacus can never be much used in this country, owing to our various division of weights and measures. We should need one abacus for pounds, shillings, and pence; another for avoirdupois weight; a third for Troy weight, and so on. In China, however, where the whole system is decimal, that is, where every measure, weight, &c., is the tenth part of the next greater one, this instrument, called in Chinese Shwanpan, is very much used, and with most astonishing rapidity. It is said that while one man reads over rapidly a number of sums of money, another can add them so as to give the total as soon as the first has done reading. Their abacus differs from the one described above, in having only five beads on each wire, one of which is distinguished from the rest either in colour or size, and stands for five. There is one of these instruments in the East India Company's Museum. The Greeks and Romans used the same sort of abacus, at least in later times. The Russians are also much in the habit of performing calculations by strings of beads. It is probable that the word was originally applied to a board strewn with dust or sand, on which letters were marked in teaching children to read. The word *Abax* was the Greek term for this instrument. Some etymologists derive the name from the Phoenician *Abak* which signifies dust. Lucas de Burgo, an old algebrical writer, says it is a contraction of Arabicus. It is most probable, however, that the first derivation is correct. A chequered board, such as we still sometimes see at the doors of public-houses, was formerly used in this country as an abacus [see Exchequer], and a chess-board would now do very well for the purposes of instruction above-mentioned. The multiplication-table is sometimes called the Pythagorean abacus. *Abandonment* is a term used in marine insurance. Before a person, who insures a ship or goods, can demand from an insurer or underwriter the stipulated compensation for a total loss of such ship or goods, he must abandon or relinquish to the insurer all his interest in any part of the property which may be saved. [See Insurance.]

**ABA'NO, PETER DE.** A celebrated Italian physician and philosopher of the middle ages. He was born in 1250 at Abano, anciently Aponus, a village about five miles from Padua. Peter de Abano, or Apono as he is often called, having repaired to the University of Paris to complete his education, is said, while studying there, to have published the most famous of his works—his *Conciliorium Differen-
tarium Philosophorum et Medicorum*, a performance from which he has derived the title of the *Conciliorium*. He afterwards wrote various other works which are less known, and also translated into Latin some of the treatises of the Arabian physicians. Abano was undoubtedly one of the most accomplished scholars and men of science of his age; and he also seems to have been possessed of native powers and an inventive genius. As it was, he has been regarded as one of the principal restorers of true science in his native country. After he left the University of Paris, where he took the degree of Doctor both in Philo-
sophy and in Medicine, he settled at Bologna, where he practised as a physician for the remainder of his life. Abano was also a great proficient in mathematics and astronomy, so far as those sciences were known in that age. His reputed skill in this kind of learning caused him to be regarded, in his own day, as a magician; and, in his latter years, a process was actually commenced against him as such by the Inquisition. A notorious story which the citizens of Padua erected to him after his death, asserts that he was suspected of magic and accused of heresy, but acquitted. Other authorities, however, assure us that he only escaped condemnation by his death, in 1316, at the age of sixty, and that the charges have been passed upon him if he had lived, was executed upon his effigy in straw. The imputation of being a prac-
ticer of magic long clung to the memory of Abano in the popular belief, and even in the minds of many of the learned. As one of the many distinguished cultivators of mathematical and physical science who have acquired this sort of celebrity, he occupies a conspicuous place in the curious work which the French physician, Gabriel Naude, published in the early part of the seventeenth century, entitled *A Vindication of the Great Men who have been accused of Magic*. Abano, however, although no student of magic, shared the universal belief of that and several succeeding ages in the delusions of astrology, and had no doubt that the movements of the stars exerted the most important influence on human affairs. The calculation of these imaginary symphonies formed, indeed, the principal part of his astro-
omy. The mysterious and almost prophetic character which he and others thus professed to derive from their specific skill, much as they did not attain to a high degree, to countenance and confirm the popular notion of their intercourse with the powers of darkness. [See Boyle's *Dictionary*—Abano.]

**ABATEMENT.** This word is derived from the old French word *abater*, which signified to beat down, pro-
strate, or destroy.

Before entering upon the explanation of the present meaning of this term, it will be well to observe, for the infor-
mation of those who may not be acquainted with the extent of our law, that by far the greater number of the terms of art (as they may be called) peculiar to it, are derived either from the Norman-French, or the Latin,—we shall therefore give a cursory view of the circumstances which led to their adoption. When William I., commonly styled the Con-
queror, became King of England, he filled all the posts of profit and honour with subjects from his Norman dominions —the civil places chiefly with ecclesiastics. The foreign priests having obtained from their master all the seals of the judges and other officers of the superior courts of jus-
tice, it was found necessary to ordain that all proceedings in them should be carried on in the Norman tongue instead of the English, with which these new judges were for the most part unacquainted. A decree was passed by the council of the Church of St. Giles at Paris, the first of May, 1137, which, for the most part, was drawn in Latin, but which the priests of the Roman Church were necessarily more or less acquainted. The judicial writings continued to be in Latin long after Ed-
ward III. had expelled the French tongue from our courts; and they were not written in our own language until the reign of George II., when an Act of Parliament was passed for the purpose.

It will be evident that, under the circumstances described, the more ancient legal terms would, whenever that could conveniently be done, be translated into the French and Latin languages; and as, during the periods mentioned above, the laws of England experienced great alterations and received many additions, abundance of new terms were necessarily called for to express new ideas. Many of these naturally drawn from the languages then in legal use. Many of the expressions thus translated, and those first invented, are employed at the present day with little or no alteration. Of this we have an example in the word which is the sub-
ject of this article.

The term *abatement* is used by our law in three senses viz. those of abating a nuisance, abating an action or indictment, and abating into a freehold.

The first of these, that which the word seems to be used in its primitive or literal sense, is that of abating or *beating down* a nuisance; an expression commonly used, and, there-
fore, well understood. Whatever unlawfully annoys, or does damage to another, is a nuisance, which he is at liberty to abate, that is beat down, and remove; provided in so doing
he commits no breach of the peace, and does no more injury to the property than is absolutely necessary for effecting his purpose. If a wrong be done, so much as is necessary and all in use to obstruct its ancient lights, this is a private nuisance, which it is competent to the person injured peaceably to abate: or, if a gate or other obstruction be erected or placed across a public road, this, which is a public nuisance, and the assault of defendants' subjects passing that way may be put down and removed.

The second signification of abatement is that of abating a civil action, or an indictment. Here it is taken figuratively, and signifies the beating down or overthrowing such action or indictment. This is effected at an action at law, either by showing, by way of plea, that something has occurred by which the proceeding is ipso facto determined, or by stating some matter which renders it imperative on the court to quash, or put an end to, the proceedings. Thus, in the first case, it may be alleged that the plaintiff has taken possession of the property which he seeks by his suit to recover from the defendant. In the second case, it may be shown that the plaintiff in such proceedings is an alien, an outlaw, or an attainted or excommunicated person, and therefore incompetent by the law of England to maintain an action; or that the defendant is privileged from action, or has been misnamed in the suit; or that there are other persons still living who are liable without it, and with them, therefore, to be joined with him in the demand; or that the plaintiff is disqualified from suing by some personal disability, or that the plaintiff or defendant is misnamed. In the former of these cases, the plea informs the court that the action is not one which can be maintained by the persons already in the suit, without the interposition of the court: in the latter it calls upon the court to pronounce a judgment which shall put a stop to the present proceedings, without deciding anything from the main question in the parties.

Where the defendant pleads any matter in abatement which lies peculiarly in his own knowledge, such as his own misnomer, or the non-joinder of other parties as defendants, it is, in general, necessary that the plea should be so framed as to give to the plaintiff all the information which should prevent his falling into a similar mistake, when commencing a new action for the same demand. This is technically called giving the plaintiff a better writ. It is an indispensable rule, where the action is only abatable by a plea that he who takes advantage of a flaw must, at the same time, show how it can be amended. This is, of course, not required where the action is actually abated, and where the plea, though in form a plea in abatement, is substantially a plea in bar of the action. In such cases the sheriff is not that the plaintiff has been misconceived, but that the plaintiff has no right to recover by his action the thing which he has claimed.

In the early history of our law, as recorded in the Year Books, many cases connected with the disputes and transactions arising upon pleas in abatement; and many important legal points were settled in considering whether a writ had or had not abated in fact, or was or was not abatable. Of late years a variety of causes, which cannot be explained without involving the consideration of matters scarcely intelligible to any but a professional reader, have conjured up pleas in abatement in civil actions of much less frequent use than they formerly were.

The subjects of pleas in abatement, in criminal proceedings, are far more confined than in civil actions. In general, if an indictment assign the defendant to a Christian name or a wrong one, no surname or a wrong one, or no addition, or description of his calling and place of abode, or a wrong name, pleads this matter. In modern times, however, misnomer is the only case in which a plea in abatement to an indictment has been at all usual in practice; and, at the present day, such a plea would be of much use as a plea in abatement. dating through the Year Books, is well analysed by Thewall in his Digest; and a full analysis of the law of abatement, in its more modern form, will be found in Comyn's Digest—titled under this head. Also Blackstone's Commentaries, vol. iii. p. 301; vol. iv. p. 334—Stephan on Pleading—Jaco's Law Dictionary.

The last species of abatement is that of an abatement into a freehold, wherein, as in the last case, the term abate is used in a figurative sense. Where, upon the death of the last person in possession of a freehold, a tenant in heri
tage enters upon those lands to the prejudice of the party entitled as heir or devisee, he is said to abate into the freehold of such heir or devisee. In a state of nature, perhaps, upon the death of an individual, that individual's possessor of his estate would rise up would it have a better title than any other individual; but our law has, for the preservation of the public peace, given to a man possessed of land the power of designating a successor or devisee; and in case of his death or his estate is no longer in his power, the latter is justly considered one of the highest offences which can be committed against the right of freehold property. [Blackstone's Commentaries, vol. iii. pp. 167-8.]

ABATIS, a military term, signifying a work composed of filled trees, with the softer branches cut off, laid side by side with the end from which the branches grow towards the enemy; thus forming an obstruction to his progress, and a breast-work for musketry to fire over. This species of defence is often used in fieldworks, where wood, not of too great size, is not obtainable, but where a hedge, or barrier, has been formed, either simply by laying down and fastening the trees, or, if when so placed they would be too high to fire over, by sinking them in a ditch whose section is an angle, with its greatest side levelled against the counterscarp of a rampart, sometimes in the covered way, and may generally be used whenever an obstruction is to be raised to the enemy's progress, provided they can be flanked by a fire sufficient to prevent their destroying them at his leisure between the trees and the parts. Where the defendant pleads any matter in abatement which lies peculiarly in his own knowledge, such as his own misnomer, or the non-joinder of other parties as defendants, it is, in general, necessary that the plea should be so framed as to give to the plaintiff all the information which should prevent his falling into a similar mistake, when commencing a new action for the same demand. This is technically called giving the plaintiff a better writ. It is an indispensable rule, where the action is only abatable by a plea that he who takes advantage of a flaw must, at the same time, show how it can be amended. This is, of course, not required where the action is actually abated, and where the plea, though in form a plea in abatement, is substantially a plea in bar of the action. In such cases the sheriff is not that the plaintiff has been misconceived, but that the plaintiff has no right to recover by his action the thing which he has claimed.

In the early history of our law, as recorded in the Year Books, many cases connected with the disputes and transactions arising upon pleas in abatement; and many important legal points were settled in considering whether a writ had or had not abated in fact, or was or was not abatable. Of late years a variety of causes, which cannot be explained without involving the consideration of matters scarcely intelligible to any but a professional reader, have conjured up pleas in abatement in civil actions of much less frequent use than they formerly were.

The subjects of pleas in abatement, in criminal proceedings, are far more confined than in civil actions. In general, if an indictment assign the defendant to a Christian name or a wrong one, no surname or a wrong one, or no addition, or description of his calling and place of abode, or a wrong name, pleads this matter. In modern times, however, misnomer is the only case in which a plea in abatement to an indictment has been at all usual in practice; and, at the present day, such a plea would be of much use as a plea in abatement. dating through the Year Books, is well analysed by Thewall in his Digest; and a full analysis of the law of abatement, in its more modern form, will be found in Comyn's Digest—tituled under this head. Also Blackstone's Commentaries, vol. iii. p. 301; vol. iv. p. 334—Stephan on Pleading—Jaco's Law Dictionary.

The last species of abatement is that of an abatement into a freehold, wherein, as in the last case, the term abate is used in a figurative sense. Where, upon the death of the last person in possession of a freehold, a tenant in heri
tage enters upon those lands to the prejudice of the party entitled as heir or devisee, he is said to abate into the freehold of such heir or devisee. In a state of nature, perhaps, upon the death of an individual, that individual's possessor of his estate would rise up would it have a better title than any other individual; but our law has, for the preservation of the public peace, given to a man possessed of land the power of designating a successor or devisee; and in case of his death or his estate is no longer in his power, the latter is justly considered one of the highest offences which can be committed against the right of freehold property. [Blackstone's Commentaries, vol. iii. pp. 167-8.]

ABATTOIR, the name given by the French to the public slaughter-houses, which were established in Paris, by a decree of Napoleon, in 1810, and finished in 1819. Paris, previous to the arrangement thus made for the public health of the metropolis, was as much a city of hovels as of having cattle driven through a crowded city, to be slaughtered in yards and hovels of the closest streets. But that capital was not still further exposed, as our metropolis is, to the frightful annoyance of a great cattle-market, held in the very heart of the city: the cattle were bought and sold at the adjacent villages of Seaux and Passy. Assuredly, the beast-market of Smithfield, and the slaughter-houses of Warwick-lane, and of many other thoroughfares, are evils which ought as soon as possible to be removed. The abattoirs of Paris are five in number; three being on the right bank of the Seine, and two on the left. These buildings, which are of very large dimensions, consist of slaughter-rooms, built with monotonous facilities, and where every operation is performed by means of simple mechanical aids; and of ox and sheep pens. Each butcher has stalls set apart for his beasts, and conveniences for securing his own forage. A fixed price is paid for the accommodation of the building, and for the labour of the persons engaged in the usual duties of the establishment. In 1824, these payments from the butchers of Paris amounted to a million of francs—about 40,000/. When it is considered that about two million head of sheep, oxen, hens, and hogs, are slaughtered in London, it is evident that the most serious inconveniences must result from the continuance of the system in which we have so long persevered; and that the establishment of beast-markets, and public slaughter-houses, in suburbs where the populations will not be encumbered by the daily transit of multitudes of human knowledge. In 1852, he visited Germany, Holland, France, and England, and gained the esteem of many eminent men, among others of Bayle and
Newton. King William wished to retain him in England, but he decided to return to Geneva. There he took part in the translation of the New Testament, which appeared in 1726, and received the thanks of the clergy for his exertions. The Academy offered him a professor's chair in 1723, which he declined, preferring the situation of a supernumerary librarian, without salary. In 1727 the government of General Leibnitz, then his employer, fell. He is one of the most remarkable instances on record of a combination of universality and depth of learning. Every man who talked with Abaust in his own particular study about his great undertakings or great theories might be, his special attention had been reserved for those with whom they were discussing. Newton addressed himself to Abaust as a proper person to decide between him and Leibnitz. Pococke, the Oriental traveller, thought he had passed his life in the east. R.L. imagined that he had devoted himself to the study of ancient music. The latter speaks of him in terms of the highest admiration in his Hi-
bose, being the only instance in which he has thus dis-
tinguished a contemporary. In his temper he was so mild and enduring, that an anecdote which is preserved of him shows that those virtues had reached an excess which almost entitles them to the appellation of a disease of the mind. His friends bribed or encouraged his servant to try whether he should be induced to muse over his master. The man, accordingly, neglected to make his bed, of which Abaust reminded him without reproof. The same neglect, however, was allowed to occur several days running; on which Abaust called the servant, and said, 'You appear not to like your bed.' He then named part of the tows on which he made trouble; it is, however, no great matter, as I begin to ac-
tom my self to it.' For a man of his attainments we have not much remaining of Abaust. With the exception of some antiquarian papers, in Spon's Histoire de la Ville de Tiflis, and the abridged account by the Persian, he has left nothing of himself. Some theological works were published after his death, but the greater part of his manuscripts were burnt by his heirs, whose religious opinions differed from his own, which were Unitarian.—[Mostly abridged from the Bio-
graphic].

ABAS the Great, or, with his full name, Shah Abbas Bahadur Khan, was the fifth king of the Sufi dynasty which ascended the throne of Persia in the year 1501 of our era. During this reign he gained the greater part of the throne of Khurasan; and on the death of that prince in 1586, succeeded him in the government. Khurasan had just then been occupied by the Usbebs, and it was the occasion of a great gendar, which almost cost the king his life. But his efforts proved for a time ineffectual. Not being able to take Herat, the capital of Khurasan, from the Usbebs, he was obliged to content himself with leaving a garrison at Meshhed, and even this town, considered as sacred by the Persians, fell into the hands of the Usbebs. A Mohammedan saint, Imam Ali Reza, fell again into the hands of the enemy. About the same time the internal peace of Persia was interrupted by a revolt at Isarakhar, which was, however, soon repressed, and terminated with the execution of the prime mover, Yakub Khan. The year 1590 was distinguished by victories in Gilan and Azerbaijan over the Turks, who had collected a considerable force on the banks of the river Kur, and threatened Persia with an in-
vasion. The Turks lost, through this campaign, their influence in Gilan, but retained for the present possession of the for-
tresses of Nuhavend, Tebriz, Tiflis, and almost the whole of Azerbaijan and Georgia. During this time, one of the generals of Abbas conquered the province of Lar in the sea, and, in consequence, half of the Persian Gulf, important on account of their pearl-fishery.
The Usbebs still remained masters of Khorasan, and, owing to their desultory mode of carrying on their attacks, many attempts at bringing them to a decision failed. At last, however, the year 1597, they were totally defeated by the Persian troops, near Herat, and Khorasan was for a long time released from their predatory incursions.
Two English knights, Sir Anthony, and his brother Sir Robert, intrusted to the crown in 1531, by order of Henry VIII., with the charge of settling the distraits of Armenia and Persia. They were honourably received by Shah Abbas, whose confidence they soon gained to such a degree, that while Sir Robert Sherley remained in Persia, his brother Sir Anthony was sent as envoy from the Persian court to the Christian princes of Europe, to offer them the Shah's friend-
ship, chiefly with a view to some future common undertaking against the Turks, who were then the terror of Europe.

Between Persia and Turkey hostilities were still carried on. Nuhavend, Tebriz, and Bagdad were taken: a Turkish army of 100,000 men was defeated by about half that number of Persians; Abbas recovered Shirvan, Shirvan, part of Georgia, and Armenia, and subdue, not only Khorasan, and Diarbekir, and the Tartars in Khorasan, but the Tartars in Khorasan, their victory kept in check. They formed a league with the Tartars of Kachpat, but the united forces of both were vanquished in a battle fought between Sultanieh and Tebriz, A.D. 1618, the last to occur that was agreed to during the reign of Shah Abbas. Negotiations were then commenced between Abbas and the Sultan at Constantinople; but insurrections and conflicts in the frontier provinces, fomented and secretly instigated by the Turkish govern-
ment, still continued for some time.

Shah Abbas encouraged the trade of Europeans with Persia; he protected the factories which the English, the French and the Dutch had at Gombroon; but he looked with jealousy on the flourishing establishment of the For-
tuguese on the small island of Omuz, situated near the en-
trance of the Persian Gulf, which had been in their possession ever since 1507, when Albuquerque occupied it, and now had become the emporium of an extensive com-
merce with India, Persia, Arabia, and Turkey. This settle-
mation of the Persians in this Turkish province gave rise to attacks and to attack with joint forces. The English furnished the naval, the Persians the military, forces; and the island was taken on the 22nd April, 1622. For this service the English king appointed a general, and the island was named the General's Hop. For this service the English king appointed a general, and the island was named the General's Hop. Abbas was a zealous Shiite, and used to make frequent pilgrimages to the tomb of Imam Ali Reza, at Meshhed; but he showed great tolerance to those that pro-
ceeded other religions, and especially to Christians. His belief in astrology was so firm that he once even vacated the throne for a short period during which it had been predicted that danger menaced the life of the Shah. He made Isfahan the capital of the empire, and embellished that town by means of palaces, gardens, and parks, and rendered the communications in the interior easier by caravanserai and highways. As a means of securing the authority of the crown, he countenanced the conflict of polit-
ical parties in the interior; with the same view he formed a secret society of men connected with the court, who were called the 'King's friends,' whom he distinguished and attached to his person by many particular favours.

ABBASIDES. The name of this family of sovereigns is derived from their ancestor, Abbas ben Abd-al-Motteeb, a paternal uncle of the Arabic prophet Mohammed. On account of their descent from so near a relation of the proph-
et, the Abbassides had, ever since the introduction of the Islam, been held in very high esteem among the Arabs, and had at an early period begun to exact the jealousy of the Ommaide caliphs, who, after the defeat of Ali ben Ali Taleb, the son-in-law of Mohammed (A.D. 661), occupied the throne of the Arabian empire. The Abbassides had already for some time asserted their claims to the caliphate, but there was no signal instance of their assuming the discharge of the duties of the caliphate. A.D. 749) the Ab-
basides, under the able and able-acted leadership of the last caliph of that line, fled before the advancing forces of Al-Saffah from Mosul to Emeza, thence to Damascus, and finally to Egypt, where he was overtaken and killed. So great was the hatred of the victorious party against the

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vanquished royal family, that not less than ninety Om- 
mainles were doomed to a cruel and ignominious death, 
while even the remains of those that were already dead, 
were taken out of their tombs, and publicly insulted. 
A survivor of the fallen dynasty, A'sal-al-taran, a grandson 
of the uncles Hamed, escaped to the desert, and there, and 
province of the Arabian empire. There his name procured 
him a favourable reception: he was saluted as king, and 
Ommaniade lineage continued to reign for nearly three cen-
turies (a.d. 756—1031) over the eight Mohammedan pro-
vinces.
A'sal-Saffah died in a.d. 753, and was succeeded in the 
caliphate by his brother Al-Mansur (a.d. 754—771), who 
removed the seat of government from Damascus to the 
newly built city of Bagdad. He was in war with the 
Turks, and had to fight for the possession of the Great 
empire even when the Mohammedan religion was firmly 
 fixed, but the internal tranquility of his reign was often disturbed 
by insurrections in the distant provinces. In the reign of 
his son, Muhdi (a.d. 774—781), a Mohammedan army, 
under the command of the great Abd-al-rasul Harun al-
Rashid, penet rate d the Greek provinces of Lesser Asia as far as 
the Hellespont. During the short reign of Muhdi's son, Haili 
(781—786), an attempt at an overthrow of the Abbasid 
domination was made at Medina, by Hosseimin, a descendent 
of Ali, in the Abbasid dynasty. 
Haili was followed by the celebrated Harun al Rashid, a 
grandson of Al-Mansur, whose early military exploits have 
already been alluded to. When called to the throne, he soon 
displayed a love of justice and peace, and a zeal for litera-
ture and science, which corresponded with his elevated 
character. He opened friendly communications with 
Charlemagne: the presents which he sent him among 
others a curious sort of clock, a description of which is given 
by the historians, who say that it was made for him, or even 
for his great European contemporary, afforded at the 
same time an illustration of the progress which the me-
chanical arts must at that time have made among the 
Arabs. In conducting the internal affairs of his empire, Harun al Rashid was guided by his ministers, Yuhay al-
Nafar, of the ancient Persian family of the Barkeimides, 
whose ancestors had, through many generations, previous to 
the introduction of the Islam, held the hereditary office 
of priests at the fire-temple of Bakhtr. But the high degree 
of popularity with which the Barkeimides enjoyed, and which 
Harun's jealousy, and the rashness and cruelty with which 
he indulged himself in his suspicion by putting to death 
not only the two ministers, but almost all their relations, 
forgoing his addiction to the practice of mildness, 
and equity with which his memory is honoured by Eastern 
nobility. The epoch of his reign has, in the remembrance 
of Mohammedan nations, become the golden age of their 
domination. The wealth and the adopted luxury of the 
conquered nations, the social convenience, the material 
advantages, the habit of the people, and the spirit of 
the court of Bagdad that splendid, of which so lively 
pictures are exhibited in many of the tales of the 
Arabian Nights. Flourishing towns sprang up in every part 
of the empire. Traffic by land and by sea increased with the 
luxury of the rich and the expensive classes; and Bagdad rivalled even Constantinople in magnificence.

To wage war against the Infidels was, with the Arabs, a 
matter of religion and of faith: as soon, therefore, as 
a conquered nation embraced the Mohammedan belief, it was 
no longer regarded as a subject to the victors, but was raised 
to an equality with them, and formed an integral part of 
the same body. The different elements of the empire were 
thus held together by the tie of a common religion, and the 
legal establishment Al-Suffah (which they always deemed it 
unlawful to profane by translations) became the medium of communication for the nations from 
the banks of the Indus to those of the Tagus and the Ebro. 
The supreme pontificate and the secular sovereignty, the 
two supreme dignities forming the history of the Christian 
world during the middle ages, were in the Mohammedan empire united in the person of the 
caliph, who, invested with the mantle, sapphire, and staff 
of the prophet, and bearing the title of Emir al Mumunn, i.e. Commander of the Faithful, wielded the supreme spirit-
ual and temporal rule without any other restriction or 
control besides the ordinances of the established religion. 
The only formal recognition of the sovereignty of the caliphs 
and, consequently, of all other independent Mohammedan 
princes was the prerogative of having the 
name also introduced into the public prayers at the mosques.

According to the ancient Persian plan, the several provinces 
of the empire were governed by delegates, with military and 
administrative powers. But this system soon proved fatal 
to the caliphat: for the lieutenants in the distant parts of 
the empire would revolt, and claim the authority of the 
lieutenant. On an expedition to Khurasan, undertaken against such a 
disloyal satrap, Harun died at Tus, a.d. 808.

The throne was for some years contested between his 
two sons, Arnun and Mamun; but, in a.d. 813, Mamun came to 
the throne, and under his accurate and wealthy 
administration, the arts and sciences 
813 forms an important epoch in the history of science and 
literature, the cultivation of which was disproportionately 
patronized by this caliph. The Arabs were avowed borrowers 
in science: they were chiefly indebted to the Hindus and 
Greeks. But he seems clearly to have excelled his predecessors. 
Their claims to originality of invention, and to the merit of 
having made real additions to the store of knowledge, 
are not great, but they are entitled to our gratitude 
for having kept alive and diffused the light of letters, 
and for having preserved a sort of scientific tradition from 
classical antiquity, during an age when science and litera-
ture in Europe lay buried under ignorance and barbarism. 
Mamun founded colleges and universities in most of his 
dominions, such as Bagdad, Bassora, Kufa, and 
Nishabur. Syrian physicians and Hindu mathematicians and 
astronomers lived at his court; and works on astronomy, 
mathematics, metaphysics, natural philosophy, and medicine 
written in his time were translated into his valuable 
library, and Mamun took personally a particular interest in astronomy. He 
deepened, as a result of his attention to their work, the 
art of observation, and instead of the astronomical tabulae 
which the Greeks 
the Saracens continued in use, he 
appreciated the importance, and the systematic development of the Mohammedan theology and jurispru-
dence, both founded chiefly on the Koran, afforded an oppor-
tunity of applying practically the principles of the Aris-
totelian philosophy.

The period of prosperity which the Arabic empire enjoyed 
der Muhdi al Rashid and Mamun was only of short 
duration. The chivalrous enthusiasm with which 
Mohammad had inspired his nation soon extinguished its 
vivacity and love of enjoyment. Many provinces in the 
west (Spain, Fez, and Tunisia) had already shaken off 
their allegiance to the caliphat, and the attachment of others 
was precarious. The country of the Greeks, which the 
empire was threatened by the Turks, some tribes of whom 
were so long an enemy of the Maghreb, 
Turkish youths were soon brought as mercenaries to 
Bagdad, and Mutasim (833—842), the brother and successor 
of Mamun, formed of them a body-guard, and the independent 
reign of Yathuktur (841—846), Motawakkel (846—861), 
and Mowta (861—862), became to the caliph what the 
pragmatica of the Roman emperors. 
Mostain (862—866) was obliged to concede to them the privilege 
of electing their own commander, and thus lost much of his 
authority at home, while the provinces of his empire were 
infested by invasions from the Greeks. Under his successor 
Mutasim (866—868), a native of Sejistan, Yakub al Laith, 
commanded the eastern empire, and under this 
attorney of Khorasan, Kerman, Persia proper, and 
Khoristan, and united these provinces into an independent kingdom, with 
Nishabur as its capital, which continued in the 
possession of his family (the Soffarides) till 917.

The subsequent caliphs of the family of Mowta (868, 869), 
Mowta (869 —892), Mowta (892 —902), Mowta (902 —907), 
Mowta (907 —922), and Kahir (932 —934). Under the reign of Radi (951—910) the disorder 
of the empire had reached such a height, that the caliph, 
in order to restore public order, was obliged to call 
Mohammad ben Rayyk, the governor of Wasith, to 
Bagdad, and to confide to him, with the title of Emir al 
Omara, or commander of the commanders, an almost unlim-
ited authority in the government. From this time 
the caliphate became a mere nominal dignity, all the real 
power was in the hands of the mighty Emirs al Omara,
After the short reign of Mottaki (940—43), Mostakfi (933-944) came to the caliphate; but he was soon dethroned by Moizzeedduallâ, who ascended the Bâbûli (papal Bâbûli), but, in concert with his two brothers, had rendered himself master of a great part of Persia and Irak. Moizzeedduallâ conferred the caliphate, now limited to the mere pontifical dignity, and to the possession of the town of Bagdad, on Mothi Lililah (943-947), and made the Persian Emir al Omara, which continued hereditary in his family during the caliphate of Tayi lililah (973-991), and Kadîr lililah (991-1003), till the year 1065, when, in the caliphate of Kairâm biaam ililah (1003—1074), Bagdad was occupied by the French, under Togrul, whose family derived its nominal sovereignty of the caliphate passed from Kairâm biaam ililah successively into the hands of Moktafi (1074—1094), Mostajer (1094—1118), Mostakfi (1118—1135), and Moktafi (1135—1160). The sovereignty of those principalities into which the Arabian empire had now dissolved itself, either still recognized the caliph at Bagdad as Imam or supreme pontiff, and thus showed him a sort of spiritual allegiance, or they were Shites, i.e. partisans of the cause of Ali ben Abi Taleb and his descendants, and as such executed the dominion of the Abbasides.

Of the first kind were the Tulunides and Ishkides in Egypt and Syria, and the Tabirides, Bozdardes, Samanides, and Gurgurides in Khurasan; to the second belonged the Assassines, and the Fatimides in Africa. Moktafi’s son Mostanjed (1160—1170) was succeeded in the caliphate by Mostadjî (1170—1179), and Nasir (1179—1226), during whose reign the empire of Islam terminated in Persia. Dahir occupied the caliphate only for a few months. His successor, Mostasem (1226—1242), offered for a time a vigorous resistance to the advance of the Tartar conquer; but his son Mostasem was defeated and killed by the Tartar Hulaku, who took Bagdad, and put an end to the government of the Abbasides.

Ahmed, a son of the caliph Dahir, fled to Egypt, where Sultan Bihars, the Mamluk (A.D. 1260), recognized him as caliph. But he soon met his death at Bagdad in an attempt to make his way to the throne. Some of his descendants and Bihars conferred the title of caliph on another Abbaside, Hakem bi-amillah, whose descendants, under the protection of the Mamluks, retained possession of the almost nominal caliphate in Egypt till 1517, when the Osman Turks conquered Egypt. Sultan Selim took the last Abbaside caliph, Motawakkél, to Constantinople, where he kept him for some time as a prisoner, but afterwards allowed him to return to Egypt, where he lived at Cairo till his death, in 1538.

ABBÉ is the French term for Abbot, which will be explained in its place. In France, before the Revolution, Abbé was the denomination of a very numerous body of persons, who had little or no connexion with the church, except the apparent one, which they derived from this title. Many of them had not even received the tonsure, which, is in Roman Catholic countries, the first and indispensable mark of the clerical character. So far back as the end of the seventeenth century, we find Richelet, the lexicographer, complaining that there was scarcely a young man, tolerably well made, and who had acquired the air of an ecclesiastic, who did not, by an insufferable abuse, assume the style of Monsieur l’Abbé. ‘People,’ he adds, ‘even stupidly honour with that respectable name any scholar living, who may have put on the short coat, the small neckband, and the little periuk.’ Another author, Mercier, writing a century later, describes the same class of characters. ‘They are persons,’ he says, ‘passing under the denomination of Abbé, without any clerical mark or ornament, in a smart coat, with gilt buttons, a small opera hat, displaying a high style of frisure of the hair, and the most effeminate manners.’ The coat, usually of brown or blue, with the neck-band and wig, formed the well-known distinguishing costume of the Abbé. The band, descending under the chin, was originally the common dress of all classes: ecclesiastical persons only wore it shorter than others, in affection of humility. As for the periuk, which was also of small dimensions, it is said to have been first worn by the Abbé about the year 1740; the Abbé Larivière, a wearers character, who afterwards became Bishop of Langres, having set the example. This innovation greatly scandalized the more serious members of the ecclesiastical order; and several works were written in vehement condemnation of the abuse. One of these bears the old title of Clericus Depuratus, which may be translated The Church Unperverted. The abbés occupied a very conspicuous place in French society, and displayed a variety of functions. In many houses, ‘writes Mercier, ‘we find an Abbé, on whom is directing the appellation of friend, and who is in reality but an honest upper servant, commanding the livery servants; he is the humble attendant on Madame, assisting at her toilet, taking charge of household matters in general, and directing the affairs of Monsieur without.’ Many of the abbés, however, followed a more useful and creditable way of life. Some acted as private tutors in families, though these were seldom treated with much respect, and were consequently, in general, persons of very inferior qualifications. Others were professors of the university; and a great many employed themselves as men of letters,—in which capacity their labours have given to the title of Abbé an honourable celebrity, and redeemed it from the universal contempt to which swarms of frivolous and intriguing syphoxants would otherwise have reduced it.

ABBÉ’S COMMENDATAIRES, were such abbés as held abbeys in commendam,—that is, with the right of administering their revenues, or a part of them. There were, before the Revolution, between 200 and 300 abbeys in France, which the king had the privilege of conferring in commendam; and it was the expectation of obtaining one of these benefices which induced so many persons to take the title of Abbé. Before obtaining such preferment they used to be called Abbé de sainte esperance, abbés of holy hope. After they were thus provided for, they were Abbés Commendataires. The papal bull, which ratified their appointment, commanded them in all cases to get themselves ordained priests within the year, or as soon as they should arrive at the canonical age (five-and-twenty), on pain of the benefit being declared vacant; but it was common to obtain dispensations for darrying this condition, and most of them remained secular Abbés, as they were designated: that is, not subjected to any monastic rule. The Abbé Commendataire received the third part of the revenues of his abbey, and also enjoyed certain dignities and privileges which it is unnecessary to specify; but the actual government of the house was committed to the hands of a resident superior, the prior clausular, who was in almost all respects quite independent of the sinecurist, his colleague.

ABBESS, the superior of a nunnery, or other female reli
ABB

cannot confess her name: although it appears that in ancient times there was a 50
served; according to the learned father Don Martiolo, in his treatise on the Rites of the Church, in consequence of its having been found that there was no end to the questions which female curiosity would ask. According to a decree of the Council of Trent, an abbess, at the time of her election, ought to be at least forty years old, and to have made profession for eight years; and it is forbidden that any person be elected to the dignity who has not been professed for five years, or is under thirty years of age. In 1572, a town in France, in the department of the Somme, and upon the river which gives name to the department. It is situated in a pleasant and fertile valley, and is a place of considerable trade. Its manufactures are various, and include woollen stuffs, lace, and embroidery. Besides bed- ticking and linings; rope and twine; and soap. There is also a woollen-cloth manufactory, the most extensive in France, established in 1665, by Van Rohais, a Dutchman, who was patronized by the minister Colbert. The cloths are little inferior to those of our own country. Dyeing and bleaching are also carried on. The articles thus made, together with the produce of the neighbourhood, grain, flax, hemp, and oil, constitute the chief exports of the place, which trades with Brittany and with London; in London it is a great market for the renters boats which sols of one hundred tons to work up to the town. The population of Abbeville is about 19,000; but other accounts make it amount to 30,000, or even 36,000, including the suburbs. It is fortified, but is not to be regarded as in any respect a strong place. The houses are generally well-built, and of brick. A few are of stone, and some few ancient ones of wood. There were, before the revolution, many ecclesiastical establishments, including a collegiate church, and thirteen, if not fourteen, parish churches. Abbeville is twenty-five miles north-west of Amiens, the departmental capital, and ninety-one north by west of Paris. Lat. 50° 7' north, and long. 1° 49' east of Greenwich.

ABBEE, a religious community presided over by an archbishop, when the see was designated a diocese, the establishment was called a priory; but there was latterly no real distinction between a priory and an abbey. The priories appear to have been all originally off-shoots from certain abbeys, to which they continued for some time to be regarded as subordinate. The wealthiest abbeys, in former times, were in Germany; and of all such foundations in the world, the most splendid and powerful was that of Fulda, or Fulden, situated near the town of the same name in Hesse. This monastery, which belonged to the order of St. Benedict, was founded by St. Boniface, in the year 784. Every candidate for admission into the princely brotherhood was required to prove his nobility. The monks themselves elected their abbot from their own number; and the dignity became, by right of his office, Arch-Chancellor to the Empress, and Prince-Bishop of the diocese of Fulda. 

Costume of an English Mitred Abbot.

(Principally from Pugin's Monasteries.)

episcopal style of Lord. Some croziers abbeys, again, were not mitred, and others who were mitred were not croziers. Abbeys, who presided over establishments that had sent out several branches, were styled Cardinal-Abbeys. There were...
likewise, in Germany, Prince-Abbots, as well as Prince-Bishops. In early times we read of Field-Abbots (in Latin, Abbes Milites) and Abbot-Counts (Abbas-Comites, or Abbi-Comites). These were secular persons, upon whom the sovereign had bestowed certain abbey, for which they were obliged to render military service as common folk. The remnant of this practice appears to have subsisted in our own country long after it had been discontinued on the continent. Thus, in Scotland, James Stuart, the natural son of James V., more celebrated as the Regent Murray, was, at the time of the ascension of George I., Abbot of St. Andrews. Another person and the secularization of some of the German ecclesiastic dignities has since occasioned something like a renewal of the ancient usage. We have in our day seen a prince of the blood of the late Duke of York at the same time Commander-in-Chief of the British troops on the Bishop of Osnaburg. The efforts of the abbots to throw off the authority of their dioceses long disturbed the church, and culled forth severe denunciations from several of the early councils. Some abbots, however, obtained special charters recognizing their independence; a boon which, although acquired at first with the consent of the bishop, was usually defended against his successors with the most jealous punctiliousness. Many of the abbots lived in the exercise of power not inferior to the real magistracy, and possessed nearly absolute authority in their monasteries. 'Before the time of Charlemagne,' says Gibbon, 'the abbots indulged themselves in mutilating their monks, or poisoning out their monks on the slightest pretexts; sometimes even in the most trifling case in pace (the subterranean dungeon, or sepulchre), which was afterwards invented.' The picture which this writer draws of what he calls 'the abbot slavery of the monastic discipline' is very striking. 'The actions of a monk, his words, and even his thoughts, were determined by an inflexible rule, or a capricious superior: the slightest offences were corrected by disgrace or confinement, extraordinary fasts, or bloody flagellation; and disobedience, murmurs, or delay, were ranked in the catalogue of the most heinous crimes. No exception proved the rule in these matters; and an abbot was in many cases surrounded, corresponded to the extensive authority which he enjoyed within his abbey, and throughout its domains. St. Bernard is thought to refer to the celebrated Lugur, Abbot of Huy, in the beginning of the twelfth century, when he speaks in one of his writings, of having seen an abbot at the head of more than 600 horsemen, who served him as a corps de. By the pomp which these dignities exhibit, 'adds the Saint, 'you would think a pope in church.' His successors, however, have not been able to maintain the ancient dignity of the lords of castles,—not for the directors of consciences, but for the governors of provinces.' This illustrates a remark which Gibbon makes in one of his notes:—'I have somewhere heard or read the frank confession of a Benedictine Abbot, "I am preferred to the rank of a bishop, because my vow of obedience has raised me to the rank of a sovereign prince."' Even in the unformed parts of the continent, however, and long after the French Revolution, the powers of the heads of monasteries, as well as those of other ecclesiastical persons, had been reduced to comparatively narrow limits; and the sovereignty both of abbots and bishops had been subjected in all material points to the authority of the civil magistrate. The former became merely guardians of the rule of their order, and superiors of the monastic institutions which had been intrusted to their care. The clergy themselves, instead of being the members of a community, had become simply the servants of a master, often one of whose chief magistrates used to be called the Abbot of the People. Nor must we forget another application of the term which was once familiar in our own and other countries. In many of the French towns there used, of old, to be a sort of Abbot of the Hôtel, an abbé de l'hôtel, so to speak, that is, an Abbot of Joy, who acted for the year as a sort of master of the revels, presiding over and directing all their pastime, by virtue of the powers which the Abbot of Paris in England was an officer of a similar description, styled the Abbot of Misrule; and in Scotland the Abbot of Unreason was, after the Reformation, a personage who acted a principal part in the diversions of the populace, and one or those whom the zeal of the reforming divines was most eager in proscribing.

ABOT, GEORGE, an English prelate of the seventeenth century, more remarkable for the circumstances of his personal history than on any other account. He was born in 1632, at Guilford, in Surrey, where his father was a poor clothworker. Aubrey, the antiquary, in the curious little volume which he published in 1696, under the title of **Miscellanea**, tells a marvellous story of a dream which he had, that he was a German prince. In spite of the dream the boy might have remained a clothworker, like his father, had there not been in those days many admirable public institutions for the education of the children of the humbler classes. George Abbot and his brother, Robert, were sent to the Charterhouse, put to their native town, and in due time proceeded to Balliol College, Oxford. George entered the University in 1578, and in 1597 obtained his first prebendary by being elected Master of University College. After this he was also three times appointed Vice-Chancellor of the University. These academic honours seem to show that his reputation and influence at Oxford must have been considerable; but the high standing which he enjoyed has been attributed as much to his opposition to the Jesuits and his support of the Anglicanism to his superior ability or learning. There had already commenced between him and Laud that violent opposition of theological sentiment, which, involving them personally in political contests, and in a contest of personal ambition, made these rivals among the most marked students of the Master of University College, however, must have been in considerable esteem for his erudition as well as for his orthodoxy, seeing that we find him in 1604 appointed one of the persons charged with the new translation of the Bible. He was one of eight to whom the whole of the New Testament, with the exception of the Epistles, was entrusted. In 1608 he was appointed chaplain in the establishment of the Earl of Dunbar, at this time the king's chief favourite. This position was most important, as it was expected to advance Abbot's future fortunes. Soon after it was formed, the earl was despatched to Scotland by the king, in order to commence that attempt to bring about a uniformity between the two national churches, their persecuting prosecution of which so greatly contributed to the disastrous fate of the line of Stuart. Abbot accompanied him on this mission, and gave himself to its object with so much zeal as to secure the highest approbation and favour both from the earl and the king. He now, however, is not to be seen among the great men of the day. He seems to have made a 'slow, and proceeded with almost unexamined rapidity. He had in 1609 obtained the Deanery of Gloucester, and in December of that same year he was made Bishop of Lichfield and Coventry. In the February following he was made Dean of Westminster, and in a short time, not more than a month afterwards, elevated to the Archbishopsric of Canterbury. It is probable that Abbot was indebted for his elevation principally to his being the object at the moment of that capricious favoritism for which James was so remarkable throughout his reign. Abbot at this time did not disdain to court his royal master with the most profuse expenditure of that flattery which he loved so well to receive from others, and not unfrequently used to bestow on himself. Both Fuller and Clarendon have expressed a belief that, had the system of severity begun by Archbishops Whiglit and Bancroft not been interrupted by the intervention of the opposite policies of Abbot, Calvinism and dissent would have been extinguished in England, and the political convulsions which arose in the next reign, from the want of reverence of these elements, would have been prevented. We do not think that this result would have followed; but, if it had, it is quite certain that the utter extinction of English liberty would have been its accomplishment. Abbot, however, although his theology was of a different complexion from that of his predecessor Bancroft, soon showed himself scarcely less inclined to stretch to its utmost extent all the powers and prerogatives of his office. In the prosecution of High Commissions, and of all the other oppressive and vast charges his authority upon this subject, Abbot was in England was an officer of a similar description, styled the Abbot of Misrule; and in Scotland the Abbot of Unreason was, after the Reformation, a personage who
the inferior or working clergy. In other respects, Archbishop Abbot, though a stern and rigid ruler of the establishment, was active and zealous in the performance of all the duties of his high station. After having reached the sombre and grandeur of this post, Abbot, he seems, like some other ambitious characters, Coke, for example, and Shaftesbury, to have exchanged the serenity by which he reigned for an opposite demeanour, and from the supple and clinging courtier to have sprung up into the bold advocate of public opinion, in opposition to the popular doctrine. Harringworth, an Abbot, the whom His Majesty employed every art to turn them to his deadvantage, both with the public and with the king; and although James very sensibly remarked that "an angel might have miscarried in this sort," he found it necessary to yield so far to the clamour that was raised, as to appoint a commission to consider the same, and to determine whether he had not, by this act of chance-medley, incapacitated himself, as Laud and his partizans asserted, for discharging the duties of his office. The adjournment of the commission was, however, more to an irregularity than to anything that was committed, but that it would be necessary for the archbishop to receive the king's pardon, and also a dispensation, before he could resume the exercise of his functions. These forms were accordingly gone through; but the affair, although thus far satisfactorily terminated, gave great vexation and distress to Abbot, both from the scandal to which it subjected him, and from the feelings with which he naturally and unavoidably contemplated the lamentable event of which he had been, though under such circumstances, the subject. It is said, on the remainder of his life, he observed a monthly fast on the day of the week which had thus stained his hand with blood; and he also settled a pension of twenty pounds for life on his wife, which he withdrew for some time from his attendance at the Council Board, and took no further part in public affairs. The following year, however, on hearing it reported that the king intended to proclaim a toleration to the Papists, he wrote a letter to his Majesty, desiring to know whether, if the same was done, he might not be admitted to your council, and that the necessity of writing at length such repetitions is avoided by the use of certain well-contrived, simple abbreviations. These most commonly employed are: 1. One dash, or more, through the stem of a minim or crotchet, or under a souther or souther, by which such notes as many quavers, semiquavers, &c., as it is equal to in time, Ex.

II. Two alternate notes frequently repeated, are commonly abridged in the following manner,

III. Arpeggios are thus contracted, the dash alone denoting repetition:

IV. The word simile (the same) signifies that the group of notes is to be repeated. His (these) written over a bar, or a passage, denotes repetition. The abbreviations of Italian or other terms used in music, will be found under the respective words,
ABB

ABBREVIATIONS, the shortening of a word or phrase,
made either by omitting some letters or words, or by substituting some arbitrary mark.
Abbreviations are of two kinds; first, those which are
used in familiar speech, by which two words are made one,
is can't for can not, won't for will not, &c, and those which
are employed in writing only our business is with the hitter.
Before the invention of printing, every expedient to
abridge the enormous labour of copying would be naturally
adopted, and the principle, once introduced, was followed
where the necessity which led to its first employment no
Latin inscriptions are not unfrequently
longer existed.
quite unintelligible to the best scholar who has not given the
subject his particular attention, and many are ambiguous
even to the most skilful. The most usual Latin abbreviation
whether a name,
is the initial letter instead of the whole word
as M. for Marcus, P. for Publius ; or a relation, as F. for filius,
a son ; or an officer, as C. for consul, Qu. for quaestor, &c.
The Rabbins carried this practice to a great extent ; and
although, in copying the Bible, they carefully abstained from
abbreviations, their other writings are filled with them. They
;

;

even carried their abbreviations into their common tongue,
and when they had contracted a name or sentence, by taking
the initials only, they made words of the unconnected letters
Thus, for Rabbi Levi ben
bv the interposition of vowels.

Gerson, they took the first letters, R.L.B.G. ; and, by the
interposition of vowels, made the word Ralba^.
In the middle ages the practice of abbreviating increased
and even in printing, where the employment of contractions
much less necessary, the old mode was by no means
abandoned. Many writings became unintelligible ; and in
matters of law and government the difficulties thus created
Act of
demanded the interposition of Government.
Parliament was passed in the fourth year of George II., by
which the use of abbreviations was altogether forbidden in
lesal documents ; and although this was so far modified by
another Act, within a year or two, allowing the use of those
of common occurrence, the old practice was never completely
few only are still employed, chiefly in titles,
revived.
coins, and commercial transactions ; the most important of
which follow,

as

An

A

AW. Master of Art*.
Airhinaaop.

Afca.

Bft

B'uW.

Bt Baronet.

»,i B&ebetor of Art*.

BCX BmcheloT of Civil Law.
ED Bachelor of Divinity.

TITLKt.
K.C.H. Knight Commander of
Hanover.
KG. Knight of the Garter.
K.G.H. Knight of Guelph of Hanover.
KM. Knight of Malta.
K.P. Knight of St Patrick.
K.T. Knight of the ThiaUe.
Lp. Lordship.
LL.D. Doctor of Law.
Mr. Mister.
Mrs. Mistress.
Messrs. Gentlemen.
M.A. Master of Arts.
MJD. Doctor of Physic.

CQu Clerk, a Clergyman.
B. Companion of the
Dr. Doctor.
i

Bath*

D.CX. Doctor of Civil Law.
DJ). Doctor of Divinity.
Hum. D. Doctor of Mask.
tsa. Esquire.

FUAFeUow

of the Geological

of the Linnsean Society.
F JLS. F#»Ik>w of the Royal Society.
tSJL Fellow of the Society of Anbquanca.
tkjuarics.
GjCH. Grand Cross of Hanover.
J V.D. Of Canon and Civil Law.
Kt.

MP. Member of
M.R.I.A.

Society.

?U>.

Knight.

R.B. Knxght of the Bath.

tOB

Knight Commander of the

Parliament,
of the Royal Irish

Member

Academy.

Pelicrsr

R.A. Royal Academician.
Rt. Hon. Right Honorable.
RE. Royal Engineers.
R.M. Royal Marines.
R.N. Royal Navy.
S.T.P. Doctor of Divinity.
U.E.I.C. United East India
pany.
W.S. Writer to the Signet.

Com-

Bath.

OH INGUSH COINI.

AC Arch-Chancellor,
AD. Airh-Duke-

AT

Arcb-Tn?sjrareT.
LJ>. Duke of Broniwick and

B. et

Lunenberg.

By

DjQ.

F.D. Defender of the Faith.
B.R.I. Holy Roman Empire.
M.B.F. et H. Great Britain, France,

and Ireland.
R. King,

the Grace of God,

commercial.
Ro. Right-hand page.
Left-hand pane.
L.S.D. Pounds, Shillings, and Pence.
U*rt> Qr. Lb. Oz. Hundredweights,
Quarters, Pounds, and Ounces,

Ct Creditor.

"Vo.

Debtoc,
Lb. or ditto, the same.

Dr.

N^ Somber
raFoiio.
i& Qa*rto.
fr^o. Octavo.

mSC*LLANBOU8.
AD. the year of our Lord.
AH. the year of the Hegira.
LJL the y-ar of the woJkL
AJt before noon,
AEjC the year of the building of

aC
i«

RoCi«
Before Christ

that "» to say.

% i»

the

same

place*

same.
aMA His Mnjest/t ship
*4 the place of the tteal

tt

the

JO.

ManusSpt.

N.B. Observe.

New

Style (after the year 1752).
(before 1?52).
Style
OS. Old
contradiction.
without
Nem. con.

K.S.

Nem. du. unanimous.
P.M. Afternoon
P.S. Postscript.
«».

AB D

15

a half

ult.

the last month.

«•

namely.

US. United

State*/
Chiistntaa.
Xtian. Christian,

Xmas.

I

ABDALLATIF, or, with his fVall name, Mowaffikkddin Abu Mohammbd Allatif ben Yussuf bbn Mohammed bbn Ali bbn Abi

Said, a distinguished Arabic
writer, whose name has become familiar to us chiefly through
an excellent description of Egypt, of which he is the
author. The Baron Silvestre de Sacy has appended to his
French translation of this treatise a notice of the life of
Abdallatif^ taken from the bibliographical work of Ebn Abi
Osaibia, who knew Abdallatif personally, and to a great
extent quotes an account of his life written by himself.
We learn from this notice that Abdallatif was born at
Bagdad in a.h. 557 (a.d. 1161). From his earliest years he
received a lettered education.
Agreeably to the prevailing
fashion of his age and country, which considered a thorough
familiarity with the copious and classical Arabic language
as the indispensable groundwork for every liberal acquirement, he was led to commit to memory the Koran, the

much-admired Makamat, or novels of

Hariri, and other
compositions distinguished for the purity and elegance of
their diction, besides several works professedly treating on
style or grammar.
Next to these philological studies, he

had already bestowed some attention on Mussulman

.juris-

the arrival at Bagdad of Ebn al Tateli, a
naturalist from the western provinces of the Arabian
empire, attracted his curiosity towards natural philosophy
and alchemy, of the illusory nature of which latter pursuit
he seems not till late, and after much waste of time and
labour, to have convinced himself.
Damascus, the residence of Saladin, had about this time,
through the liberality of that celebrated sultan, become a
rallying point for learned men from all parts of the Mohammedan dominions. It is here that we and Abdallatif
commencing his literary career by the publication of several
works, mostly on Arabic philology. But the celebrity of
several scholars then residing in Egypt, among others the
Rabbi Moses Maimonides, drew him to that country to seek
letter from Fadhel, the
their personal acquaintance.
vizir of Saladin, introduced him at Kairo, and he was delivering lectures there while Saladin was engaged with the crusaders at Acca (St. Jean d'Acre). Soon, however, the news
of Saladin's truce with the Franks (a.d. 1192) induced
Abdallatif to return to Syria, and he obtained from Saladin a
lucrative appointment at the principal mosauc of Damascus.
After the death of Saladin, which took place in the next
year, we find Abdallatif going back to Kairo, where he
lectured on medicine and other sciences, supported for a
time by Al-Aziz, the son and successor of Saladin. It was
during this residence at Kairo that Abdallatif wrote his
work on Egypt. But the troubles of which Egypt now
became the scene, induced Abdallatif to retire to Syria, and
subsequently to Asia Minor, where he seems to have lived
for a long time quietly at the court of a petty prince, Alaeddin Daud, of Arzenjan. After the death of that prince
(a.d. 1227) he went to Aleppo, to lecture there partly on
Arabic grammar, and partly on medicine and on the traditions, an important branch of Mohammedan theology and
jurisprudence.
Four years after this, Abdallatif set out on
a pilgrimage to Mecca, and took his route through Bagdad,
to present some of his works to the then reigning caliph
Mostanser, when he died there, a.d. 1231.
Ebn Abi Osaibia has given a list of the works composed
by Abdallatif, which, in the Arabic appendix to Baron de
Sacy '9 translation, fills three closely-printed quarto pages.
The description of Egypt, through which his name has
become so familiar to all friends of antiquarian research in
Europe, and in which he displays an accuracy of inquiry,
and an unpretending simplicity of description almost
approaching to the character of Herodotus, is dedicated
It is divided into two
to the caliph Nasir ledin-illah.
books : the first treats, in six chapters, on Egypt generally,
on its plants, its animals, its ancient monuments, peculiarities in the structure of Egyptian boats or vessels, and
on the kind of food used by the inhabitants ; the second
book gives an account of the Nile, the causes of its rise,
&c, and concludes with a history of Egypt during the dreadful famines of the years 1200 and 1201.
The only MS. copy of this work, of the existence of which
we are aware, is preserved in the Bodleian Library at Oxford.
From this MS. the Arabic text was edited for the first time
at Tubingen, in 1787, by Paulus, and again, with a Latin
translation, by the late Professor White, at Oxford, 1800,
The French translation published by Baron de Sacy,
4to.
under the title Relation de tEgypte, $c. (Paris, 1810, 4 to.)

prudence,

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A

Digitized by

VjOOQLC


The cavity of the abdomen is bounded above by the Diaphragm (fig. 1, 1, 2), below by the bones of the Pelvis or Basin (fig. 1, 3, 3, 3, 3), which may be considered as belonging to the bones of the lower extremities, before and at the sides by the abdominal muscles, behind by the muscles of the back, and partly by the bone of the spine. The spine, as will be shown hereafter, (See Spinal Column), is composed of a number of separate bones, each of which is termed a vertebra. The vertebrae are firmly united together, and by their union form what is commonly called the backbone, termed by anatomists the spinal or the vertebral column.

Fig. I.

The cavity of the abdomen is lined throughout by a thin, dense, firm, and strong membrane, termed the Peritoneum, from a Greek word signifying to extend around. (See Peritoneum.)

Fig. II.

Diaphragm removed from its natural situation between the chest and abdomen.

We have spoken of the abdomen as a cavity, but without exception, this mode of expression may occasion misconception. During the state of life there is no cavity. The abdomen is always completely full. It has been stated that the diaphragm alternately enlarges and diminishes the space proper to the abdomen; but the abdominal and lumber muscles which form so large a part of the boundaries of the abdomen in front, at the sides and behind, in like manner alternately contract and relax. The consequence is, that a firm and uniform pressure is at all times maintained upon the whole contents of the abdomen, so that there is always the most exact adaptation of the containing to the contained parts, and of the visera one to the other, not the slightest space or cavity ever intervening either between the walls of the abdomen and its visera, or between one visera and another. By the cavity of the abdomen, therefore, is not meant what the expression might at first view seem to denote, namely, a void or empty space; but the term is merely...
employed to mark the extent of the boundary within which
the abdominal viscera are enclosed.

When the number, the diversity, the proximity, the rela-
tion, and the importance of the organs contained within
the abdomen is considered, it will be obvious that it must be a
matter of absolute necessity to the anatomist, the physiolo-
gist, the physician, and the surgeon, to mark with accuracy
the situation of each. An effectual expedient for the ac-
complishment of this object is now in universal use. It
consists in dividing the whole extent of the abdomen into
certain parts or regions. It must be borne in mind that this
division is altogether arbitrary, and is adopted not because
there is any such division in nature, but solely because it is
convenient for the purposes of science. The abdomen, then,
is artificially mapped out into the following regions.

Two imaginary lines are drawn across the abdomen, one
of which is supposed to extend from about the seventh rib
on one side to the same point on the opposite side (fig. 111.
1. 1.). The second line is supposed to extend from the fore
part of the large bone of the pelvis to the same projecting
point on the other side (2. 2.). These lines mark out three
large and distinct spaces (3, 4, 5.). The space above the
upper line is termed the **Epigastric Region** (3.); the
space below the lower line is termed the **Hypogastric Region**
(5.). The space included between the two lines is
termed the **Umbilical Region** (4.).

Two lines are next supposed to extend vertically, one
on each side from between the seventh rib to the prominence
formed by the large bone of the pelvis (fig. 111. 6, 6.). By
these vertical lines the three first regions are still further
subdivided in the following manner:—The right and left
parts of the Epigastric region form two distinct regions
(7, 7.); these are termed the right and left **Hypochondriac**
(7, 7.), while the central part retains the name of the Epi-
gastric (3.). In like manner the right and left parts of the
umbilical region form two distinct regions (8, 8.), which
are termed the **Lumbar Regions** (8, 8.), while the central part
retains the name of the Umbilical (4.). Moreover, the right
and left parts of the hypogastric regions are at the same
time each divided into two, which are termed the **Iliac Regions**
(9, 9.), while the central part is termed the **Region of the
Pubis** (5.).

This arrangement being once understood, it is easy to
speak with precision of the situation of any of the abdomin-
all viscera. He who has made himself thoroughly acquainted
with these regions, and with the organs situated in each, can
tell what viscera would be wounded supposing a sharp in-
strument were to pass from the fore to the back part of the
body, entering at any given point of the abdomen. He who
can tell this has acquired, in a practical point of view, an
invaluable piece of information. He who cannot tell this is
in danger, in the practice either of medicine or surgery, of
committing perpetual and fatal mistakes; and, therefore,

until he can tell this, no student of medicine who has a clear
conception of the duties of his profession, and who wishes to
perform these duties conscientiously, can be at rest.

**Knowledge of structure is necessary to the knowledge of
function; knowledge of natural function is necessary to the
knowledge of diseased function; knowledge of the nature of
disease is necessary to the cure of disease.** The natural
situation and relation of organs, the healthy structure of
organs, the sound action of organs, must therefore form the
subject of the day. Many of the medical men and the lay
men, since this knowledge is the basis of the science of the one
and the art of the other. Now, among the means of ac-
quiring this knowledge, one of the most direct and certain
is the examination of the external parts of the body. There
are indeed, organs, indeed, places, beyond the reach of exter-
nal examination. The disordered states of such organs can be ascer-
tained only by symptoms. The diseases of such organs do not
alter the external appearance of the body; they afford no out-
ward sign by which the inward state can be distinguished.
But whenever the situation of organs is such as to place
them within the reach of external examination, this mode of
investigating their diseased affections is the simplest, the
readiest, and the surest; and there is no part of the human
body so well adapted for this kind of examination as the
abdomen. Its walls are soft and yielding; some of its most
important organs lie immediately beneath the surface; though
they cannot be seen they can be felt; and several of their
morbic conditions can therefore be ascertained with clearness
and certainty.

Not only are some of the diseases of the abdominal viscera
visible to the naked eye, but they are even strikingly ex-
pressed; for they either cause a permanent change in the
configuration of the abdomen, or they produce a temporary
alteration of its natural movements, or they occasion both
effects. And as the abdomen affords the greatest facility
for the external examination of its contents, so the varied
and extended functions performed by its organs render this
examination of paramount importance. There is no part
of the body in which so many different organs are crowded
together; in which they lie so close to one another:
in which they are so much intermingled; in which they are
so liable, by the operation of internal morbid causes, to
be removed from their natural situation; in which the
diseases of one influence by sympathy so greatly an extent
the state of others; in which the symptoms or signs of
disease are so numerous, so complex, so deceptive; in which
disease is so apt to extinguish or embitter life, and the over-
sight, or the misconception of which proves so certainly
injurious, and so often fatal.

Both in the male and in the female it often happens that
diseases not to be entertained, or at any rate exceedingly
apt to be overlooked, or mistaken, if the region of the part
affected be covered with its ordinary clothing, become mani-
fest the moment the part in question is uncovered; or if not,
are rendered obvious by other modes of inspection to which
the removal of the clothing is indispensable. As an exam-
ple of this, it may be worth while to give some illustra-
tion of the extent and value of the information to be derived
from an external examination of the abdomen, when care-
fully and accurately performed, were it only to remove the
obstacles sometimes opposed to this examination on the part
of the patient from false delicacy, and to exhibit the mis-
chiefs that may result from the neglect of it, on the part of
the practitioner, whether from ignorance or from in-
dulgence.

The external examination of the abdomen is termed
**exploration**, or, as it is technically termed, is comprised
in simple inspection, manual examination, and percussion.

1. The simple inspection of the abdomen often affords
valuable information. The mere almond shape of the abdomen
sometimes of itself sufficient to determine the seat and
the nature of the disease. In each case of diseased organs the
change is different; in each it is peculiar, and even char-
acteristic. The abdomen may be affected with spasm, as in
the case called spasm, or with inflammation, as in the
case called enteritis. Life may depend on the promptitude
with which the true nature of the affection is detected. One
set of remedies is required for one of these diseases, and a
totally different set for the other. Remedy of the one
preservation of life, if the disease be inflammation, may be
destructive of life, if the disease be merely spasm; and if,
under the notion that the disease is spasm, the remedies
proper for inflammation be not employed, death may be the
consequence of the error in less than twenty-four, or even
twelve hours. In both affections the pain may be the same; and several other symptoms may be similar, but the form of the abdomen may be alone sufficient to determine the true nature of the malady: for, if it be inflammation, the abdomen will be rounded, enlarged, and distended; while, if it be a tumour, it will be drawn out and contracted. There are affections which place life in the most imminent danger, especially in children, in which it is difficult, if not impossible, to determine, from the symptoms alone, whether the seat of the disease is in the brain or in the abdomen. Suppose it be in the brain, one set of remedies are required, which must be applied to the head. Suppose it be in the intestines, a different sort of remedies is required, which must be applied to the belly. An index is sometimes afforded, however slight it may be, of the more foul of the abdomen: while its size, combined with its form, often affords a still more certain guide; and so does any deviation from its natural movements.

2. Manual examination affords still more correct and complete information relative to the condition of the abdominal organs. The size, the tension, the temperature, the sensibility of the abdomen, the presence or absence of unnatural tumours, or moral growths within its cavity, the presence or absence of pains, the nature and extent of the symptoms of the intestinal canal, may be ascertained with considerable precision by touch combined with pressure. Increase of temperature on the surface of the body is a most important sign of internal disease. Increase of temperature arises from the natural increase of action of the intestines, and denotes inflammation of the part affected. All acutely inflamed organs are hotter than in their natural state, and if the inflammation be intense, the neighbourhood of the inflamed part gives to the hand of the examiner the sensation of a heat not very different from that which we feel in the seat of a sign not only of disease, but of exceedingly severe disease.

Diminished temperature, which arises from diminished action in the arteries, and an overcharged state of the veins, is no less important as a sign of disease. It always denotes a most dangerous condition of the system, the danger being in proportion to the coldness. It is the concomitant of the worst forms of fever which are ever witnessed in this country; fever with a cold skin being incomparably more alarming than fever with even a palpitating hot skin. In that pernicious fever, of which we have lately had so much experience, termed cholera morbus, the first, the most sure, and the most alarming sign of the invasion of the malady, was coldness of the system, and especially of the abdomen, the seat of the malady; and it always ensued that there was no one sign which afforded a better criterion of the extent of the danger, in any case, than the degree of coldness of the system in general, and of the abdomen in particular.

The physician may often form a judgment as to the seat, the nature, and the extent of abdominal disease, from the degree of sensibility of the abdomen to pressure with the hand; and, by practice, he may acquire such delicacy of touch as to be able to detect, by its insinuation alone, moral changes, even in deep-seated organs, to an extent, and with a degree of precision and certainty, far beyond what is commonly believed by practitioners.

3. That mode of external examination of the body termed percussion—namely, the mode of eliciting sounds from the surface, the nature of the sound produced affording a knowledge of the condition of the parts beneath, has opened to the modern practitioner a new source of information, the careful and judicious employment of which has already produced results of far greater precision and importance than could possibly have been anticipated. This mode of examination has been applied principally, and with the most valuable results, to the detection of the diseases of the chest; but application of it has recently been made, and with not very considerable advantage, to the detection of abdominal disease.

M. Pierre, a young Parisian physician, has brought into a formal and matured shape this new application of percussion, which an excellent account is given by Dr. Forbes, in an article termed "Examination of the Abdomen," in the Cyclopaedia of Practical Medicine.

Our object will not permit us to pursue this subject further. Our object has been rather to inform than to satisfy curiosity; rather to indicate the nature and extent of the information to be acquired, than to supply it. Enough has been said to show that there is reason to congratulate both the medical profession and the public on the renewed attention which is now paid to the external or the physical signs of internal disease. The external examination of the body can never supersede other modes of investigation; but it may often afford essential aid to whatever other mode is adopted; and if applied with skill, be very indispensably indispensable to the success of any other. With all the aids that can be applied to the task, the detection of internal disease is often difficult and very often uncertain, and the enlightened practitioner can afford to our countrymen, who are so open to类似的参考文献。
class of fishes into the three great orders—Chondropterygi, Actinopterygi, and Malacostracae, according to the cartilaginous or bony nature of their skeletons and fins, afterwards applies the principles of Linnaeus, or the relative position of the pectoral and ventral fins, to subdivide the last of these orders into families. In its present acception, therefore, the term Abdominoidea denotes a family, or subdivision of malacostracous, or soft-finned fishes, only; and, in this restricted sense, includes the greater number of the freshwater species, as well as those which, like the salmon, periodically migrate from the sea to deposit their spawn in fresh-water lakes and rivers. M. Cuvier subdivides this family into five subordinate groups, all of which he has defined by appropriate and unequivocal characters. He denominates these subfamilies, cyprinoids, siluroids, semicorids, clupeoids, and lucioids respectively, the carp, silurus, salmons, herrings, and pikes, the typical genera from which their characters are severally taken.

Salmon, given as a specimen of the family of Abdominoidea.

**ABDUCTION** (from ab, from or off, and duco, to lead) is an unlawful taking away of the person of another, whether of child, wife, ward, heiress, or women generally. An abduction of child—(See KIDNAPPING). An **abduction of wife** may be either by open violence, or by fraud and persuasion, though the law in both cases supposes force and constraint. The remedy given to the husband in such a case is an action of dower, in which he may recover damages for taking her away; and also, by statute of 3 Edward I., c. 13, the offender shall be imprisoned for two years, and fined at the pleasure of the king. The husband is also entitled to recover damages against such as persuade and entice the wife to live separate from him without sufficient cause.

**Abduction of ward.** A guardian is entitled to an action if his ward be taken from him, but for the damages recovered in such action he must account to his ward when the ward comes of age. This action is now nearly superseded by a more speedy and summary method of redressing all complaints relative to guardians and wards,—namely, by application to the Court of Chancery, which is the supreme guardian of all persons under age in the kingdom.

An action maintained in the 9th year of George IV., the abduction of an woman against her will, who may have property either in possession or expectation, is declared to be a felony, and punishable by transportation for life, or a shorter period, or imprisonment for any period not exceeding four years with or without hard labour. In addition to this punishment of the offender, the marriage, when obtained by means of force, may be set aside on that ground. In this case, as in many others, the law will construe into fraudulent contracts; and, consequently, in one case, where both the abduction and marriage were voluntary in fact, they were held in law to be forcible, the consent to both having been obtained by fraud.

**Abduction of women generally.** The forcible abduction and marriage of a woman is a felony. Here, and in the case of stealing an heiress, the usual rule that a wife shall not give evidence for or against her husband is departed from, for in such case the woman can with propriety be reckoned a wife where a main ingredient, i.e., her consent, is a part of the contract of marriage; besides which there is another rule of law, that ‘a man shall not take advantage of his own wrong,’ which would obviously be done here, if he who carries off a woman could, by forcibly marrying her, prevent her from being evidence against him, when she was perhaps the only witness to the fact.

**ABEL.** The second son of Adam. Some interpreters have maintained that he was the twin brother of Cain, but apparently without any authority from the language of Scripture. His history is contained in the fourth chapter of Genesis, where, we are informed, that he being a keeper of sheep, while Cain was a tiller of the ground, the two brothers offered sacrifices together to the Lord; the former bringing of the fruit of the ground for that purpose, and the latter of the firstlings of his flock. The offering of Abel alone was accepted; and the preference thus shown so excited the envy and anger of Cain, that, as they were together in the field, he rose up against his brother and slew him at the first time staine the earth with human blood. There does not seem to be any reason for supposing that God was pleased with Abel’s sacrifice, and offended with that of his brother. For, when he had recovered the offerings between the offerings of which they were severally composed, it would rather appear that it was the opposite characters of the two brothers which made the sacrifice of the one acceptable, and that of the other the reverse. This view seems to be confirmed by the manner in which our Lord refers Abel in the twenty-third chapter of Matthew, righteous Abel; and also by the reason expressly assigned for Cain’s enmity to his brother, in the third chapter of the First Epistle of John, where we are told that he slew him, ‘because his own works were evil, and his brother’s righteous.’

**ABEL (CHARLES FREDERICK),** a native of Germany, and a pupil of Sebastian Bach, was much distinguished as a composer and performer in the middle and towards the end of the last century, and the first years of the celebrated band of the Electorate King of Poland, at Dresden; but, his talents being very inadequately rewarded, he quitted that service, in 1758, with only three dollars in his pocket, and reached England the following year where he soon met with encouragement that at length brought him to an end in empty praise. When the queen of George III. had her establishment fixed, Abel was appointed chamber-musician on it, at a salary of 200l. per annum; and shortly after he united with J. Christian Bach in forming a weekly subscription concert, which for many years with all respectability was highly patronised and liberally supported. His chief instrument was the viola da gamba, a small violincello with six strings, now fallen into disuse. With this he produced an effect on his auditors which scarcely any other instrument could produce, and principally by means of his adagios, or slow movements. His compositions, Dr. Burney tells us, ‘were easy and elegantly simple; for he used to say, ‘I do not choose to be always struggling with difficulties, and playing with all my might.’ In nothing was he so superior to all other musicians, the historian of Music adds, ‘as in writing and playing an adagio, in which the most pleasing yet learned modulation, the richest harmony, and the most elegant and tastefully affected melody, are all expressed in a most refined and elegant manner; and science, that no musical production or performance with which I was then acquainted seemed to approach nearer perfection.’ (Hist. of Music, vol. iv.) The critic, however, of the present day, who has compared his compositions, with the most modern productions of Mozart, Beethoven, Clementi, Dussek, and Cramer, &c., fresh in his memory, will not deny the vast superiority of these later productions. Abel—judging him by his remains—possessed more taste than imagination—more knowledge of his art, and elegance in his manner of performance, than vigour of conception. Even Dr. Burney admits that ‘his later productions, compared with those of younger composers, appeared somewhat languid and monotonous. But they suspect the fact to be, that they were more accurately estimated when compared with the productions of a more advanced age. Abel was intertemperate in the use of fermented liquors, and brought his life to a happy close in the year 1787.

**ABEL (NIEL SORDI),** born 1761; died 1829; aged twenty-six years and a-half. If we cannot place him in the first rank of analysts, it is because his early death prevented his competing with the great names of the age in that department in the quantity of his labours. But his best mathematicians, sufficiently indicate a talent which would have placed its possessor high in the ranks of science. He was born in the province of Christiansand in Norway, where his father was a poor clergyman. He commenced his studies at the age of sixteen and at the age of sixteen showed a decided turn for scientific pursuits. In 1821 he entered the university, and soon afterwards published his first essay. In 1824 the government gave him an allowance of 600 dollars, to enable him to travel. He went, accordingly, through France, Germany, and Austria, and formed an acquaintance with M. Creisle, in whose journal, and in the Astronomische
Nachrichten of Professor Schumacher, most of his works are published. On his return, after two years of absence, he was appointed Professor in the University, which post he held till his death, which was brought on by over-exertion in his bibliographical labours.

Abel has linked his name to a remarkable discovery. It is well known that no general solution has ever been discovered of any class of equations above the fourth degree— that is, no procedure has been found by which equations of the fifth degree and upwards can be solved with more than sufficient accuracy for practical purposes. Abel showed that such a solution could not be found, that the roots of an equation of the fifth degree and upwards did not admit of any general algebraic expression.

While the results of the attention of all mathematicians, the elementary student may judge of the elegance of his analytical style, from a paper on the convergence of series in Crelle's Journal, in which some results, hitherto unproved, seem to lie on the very threshold of the subject. M. Crelle calls him, with justice, one of those geniuses who appear once in a century.

A collection of his works is preparing for the press; but where, we are not informed. [Abel, Journal de la Con-]

ABELARD, one of the most celebrated teachers of the twelfth century, both for his extraordinary talents and his misfortunes, was born at Palais, a little town in the north of France, close to the sea, in the year 1079. He was the son of a gentleman of fortune, and of considerable merit, spared no expense for the education of his son. Learning, having begun to revive a second time in the preceding century, had made considerable progress in France towards the end of the eleventh; and Britain was not behind the general improvement. The famous Roscelin was from that country, though he was not the master of Abelard, as many writers have asserted.

Of a happy, fruitful life as he was in celebrated teachers, was too soon narrow a field for Abelard, who had already learnt Hebrew, Greek, and Latin; and accordingly he went to Paris, whose University was the resort of crowds of students from all parts of Europe. Guillaume de Cham- peaux, the most skilful dialectician of the age, numbered Abelard among his pupils. But the pupil soon surpassed his master, and in the dialectic struggles of the day, he often challenged him to public disputations, so common in the twelfth century. With the advantage of the pupil, he vanquished his more tried and experienced antagonist. After this success, he became so puffed up with vanity, that he made enemies of all around him. His tutors, and many of his fellow pupils, became disgusted with him, and Abelard retired to Melun, where he resided the angrier brought him into many troubles; in spite of which, however, a great number of pupils left De Champeaux to attend the lessons of the rival professor at Melun. This success induced Abelard to change his residence, and to remove nearer Paris, as the storm was now somewhat abated. But his arduous labours had so much injured his health, that he was then scarcely twenty-two years of age, that he was obliged, for some time, to discontinue his public labours. He went to Chartres, to be near his uncle, to restore his declining constitution. After the lapse of some years, he came back to Paris, where he found that his powerful antagonist had ceded his chair to a man of very inferior talent, and that he was all at once deserted by his pupils on the re-appearance of Abelard. This unforeseen circumstance forced De Champeaux to enter again into the arena, there to dispute with this scholarly Achilles, by whom he was again conquered, and compelled for ever to leave the field. But Abelard continued his dialectic lessons; he went to the courts and towns, as far away as Lyons, and introduced into every new country and province a pupil and a disciple.

This of a few of the events of Abelard's life after the return from the university. But we must now proceed to some events of a more personal nature. Abelard's last will is a subject to be taken in the same light for the care of the pupils, and, still more, taught them to despise

Ausculte, who, indeed, was unfit for his station, and altogether inferior to Abelard. The latter compared him to a tree of promising appearance at a distance, on account of whose beauty few disappoints us, when we find it bears no fruit. [Abel., Epist. primators.] However, Ausculine had power enough to have him expelled from Laon, which he soon effected. Abelard now reappeared in Paris, but as professor of dialectic among the pupils, a task which he never previously successfully. He saw himself surrounded by the most eminent scholars of his age; Gui du Châtel, who became Pope Celestine II.; the still more famed St. Bernard, and above all, the illustrious John of Salisbury, whom Abelard had introduced into the university. Amongst the things taught by Abelard to his ardent pupil, the art of love was the chief; and very soon the fair disciple surpassed her master. Their love was published all over Paris, before the good canons suspected anything amiss. Abelard, however, was forced on his scholastic duties, excited so generally the satirical clamours of the students, and became so universally the topic of conversation at Paris, that at last the eyes of the public opened to the consequences of his indiscretion. His uncle, whose shame could no longer be concealed, fled to Brittany, and hid herself under the roof of Abelard's sister, where she gave birth to a boy, who was called Astrolabii; but the child died. Fulbert, enraged at this discovery, pronounced the union unlawful, although ordained, yielded to his threats, as did Heloïse herself, but with a great deal more reluctance. She seems to have been not so much actuated by any improper motives (as so many romantic writers, who have disfigured history, under the pretext of embellishment, have attempted to represent), as because she thought that this union, being made public, would infallibly ruin the fortune of Abelard, and destroy that which was above all things dear to her—the love of her husband and protector, and Abelard, who was at the time in the height of his glory, wrote a letter to Abelard, to dissuade him from the marriage, which is full of the most eloquent expressions. At last it was agreed that the marriage should be performed at Paris, and kept secret. But Fulbert, who was impatient that the unwedded maiden should become a married woman, found the means of making the marriage public. Heloïse, convinced that the glory of her husband was endangered by their marriage being known, denied it in the strongest manner. Her uncle, enraged at her obstinacy, in which he thought her encouraged by Abelard, swore to revenge himself at least on his niece, who was at that time residing with him. Abelard, being informed how cruelly Heloïse was treated by Fulbert, took her away, and placed her in the convent of Argenteuil, near Paris. Ful- bert, believing that Abelard wanted to make a nun of his wife, in order to get rid of a mistress, vowed a cruel vengeance, which he was soon enabled to execute. He bribed the valet of Abelard to act two wicked parts; to become the valet of his master at midnight, who mutilated him in the most atrocious manner. The miscreants were punished after the cruel fashion of the age; and the canon was condemned to lose all his fortune, and was banished from Paris. Heloïse rejoiced at the vindication of her freedom, but devoted herself to the remembrance of her late lover, and his grief and his shame under the monastic garment in the Abbey of St. Denis. But he did not there find the repose which he sought. The monks of that convent soon hated him, on account of the scandal which he reproached them for their dissolute habits; and for having tried to assert, and to prove, that their great patron, St. Dionysius, or St. Acropolitans was the same as generally believed to be the patron of that church, the reverse is now universally known to be the fact. But this opinion of his, well-founded as it was, shocked the pro-
judices of the monks, being contrary to the legends and miracles of the abbey, and, as such, was considered as subversive of the privileges of the order. The infatuated monks, enraged at the pretended heresy of his work on the Trinity, which was publicly burnt in council at Soissons, in 1121, and still more at his 'treacherous' assertions about St. Denis, accused him of having written the highest, and it was Abelard's praise to have surpassed in these all his contemporaries. If we are to judge of this renowned disputant by what remains of him, we fear our judgment would be rather unfavourable. Among the Lansdowne MSS. of the British Museum the reader may see copy of two of Abelard's dialogues, one between a Christian and a Jew, the other between a Christian and a philosopher. Words are wanting to express the utter insipidity and absence of inspiration, the stiltedness, energy, and withal the superficiality, with which these attempts are attempted to display; nor can we concede to them the praise of being written in Latin which will bear the test of strict examination. The crime of Abelard, for such we must call it, and his misfortunes, have given to his name a celebrity, to which we conceived it might be put in the Index by the Inquisition of Madrid, which is almost the only thing we know in their favour. As to the question whether Abelard himself knew Greek, we are sure, that he knew he had some knowledge of the Greek language. It appears that Greek was always studied in France during the tenth, eleventh, and twelfth centuries; though it was very imperfectly known, and confined to a few schools. Hebrew and Arabic, at that time, were both known. The best classical works of Greek priests into Western Europe served to keep alive a certain degree of knowledge of this language.

The most complete edition of Abelard, is Petri Abelardi et Melochii Commentaria in Aristotelis Opera, printed at Paris, 1616, in 4to. The edition in the British Museum, though it is in fact that of Amboise, bears the title of Andrea Querciatus (André Duchesne), as do several other copies. André Duchesne is the author of the Notes and Commentaries appended to the end. There is a number of other editions, amongst which is that of the Letters published by Bastion, 2 vols. 12mo. Paris, 1782, with the text and translation; that of Fournier, 1796, with a Life of Abelard, by M. P. Ponsonby, vol. 4to.; that of Richard Rawlinson, London, 1714, 6vo.; that of Oxford, 1728. Brunet, in his Manual, gives an incomplete list of them.

The principal sources from which we have drawn this article are, first, the Dictionary of History of France, from page 29 to 225, vol. ix.; Bayle's Critical Dictionary (Amsterdam edit.), 1740, 4 vols. folio; the Universal Bibliography; and the Works of Abelard, complete, Paris, 1616, 4to.

ABELE TREE, in Botany, the English name of the Pauwus alba.—(See Populus.)

ABELMOSCHUS, in Botany, a genus of the Mallow tribe, usually referred to Hibiscus, which see. It consists of plants having showy white, rose-coloured, or yellow flowers, solitary or in clusters; the flowers are usually without an alteration of the Arabic habb el mish, or musk-seed, according to Forskahl.

ABENCERAGES, is the name given by Spanish pilgrims and merchants to a noble kingdom of Granada, several members of which distinguished themselves during the period immediately preceding the fall of the Mohammedan empire in Spain. The history of the Abencerages is intimately connected with that of the then
ABE

reigning dynasty of Grenada. In the year 1421 of our era died Yussuf III, a wise and valiant prince. He was succeeded by his son Mohammed VII., also called Ali, and the son of the Left-handed, who followed the example and advice of his father in maintaining friendly relations with the Christian court of Castille, and with the Arab princes on the northern coast of Africa, but lost the affection of his subjects by his partiality. The discontent arising against himself, and being left also unappreciated by his subjects, he retired into the desert of the Arabian mountains. But in 1437, an open revolt broke out, which had been incited by one of his king's cousins, Mohammed al Qazirah. The royal palace, called the Alhambra, was invested by the conspirators. Mohammed VII., descendant of the Almoravides, freed himself, supported by his two nephews, reclaimed his paternal dominions, and Al Qazirah suffered death for his treason. But the friendly relations between Grenada and Castille were soon interrupted, in consequence of the refusal of Mohammed VII. to renounce arms. This prince, supported by his two nephews, attached to him the united forces of his opponents. But he fell in a decisive battle, which he lost, and Yussuf ben Alhamar occupied Grenada, while Mohammed VII. fled to Malaga. This second interruption of Mohammed's reign was of short duration, for, after a few months in the throne a second time after the death of Yussuf ben Alhamar, which took place within six months. Fresh hostilities with Castille soon commenced. The frontier provinces of Grenada were much infested by the incursions of the Castillian commander Cazorla. A son of Yussuf ben Zerragh, at the head of a select band of valiant knights, drew out his troops against Cazorla, and fell in a battle (1437), in which the Castilians sustained much loss. New disturbances soon broke out, for the succession of Grenada (1444) once more detracted by one of his nephews, Osman al Ahmar. But the claims of the latter to the throne were contested by another aspirant, Mohammed ben Isma'il, who was supported by his two nephews. And finally in 1453, prevailed over his rival. Soon after this, John II. had fled the government of Castille by Henry IV., who was adverse to Mohammed ben Isma'il, and renewed the hostilities which, from this time, took a turn decidedly unfavourable to the kingdom of Grenada. The Spanish historians mention that, about this time, an attempt at a revolution was made in Grenada by the Abencérgeses, which had for its object to confer the crown on one of their own family, Mohammed ben Zerragh, and the Castillian commander, Medina Sidonia, who took advantage of these disturbances to occupy the fortress of Gibraltar. The Arabic chronicles say nothing of such an event, and the whole story appears doubtful. If there be any truth in the report, it may be, that the Abencérgeses intended to force Medina Sidonia upon the throne, which, from their stake attachment to the cause of that unfortunate prince, seems not improbable.

Of the feuds of the Abencérgeses with the Zegries, another noble Arabian family in the kingdom of Grenada, we shall return presently from the fourteenth century. A highly interesting story is told in the Guerras civiles de Gr enada, by Gines Perez de Hyta, a work which professes to be a translation from an Arabic manuscript. Of the authenticity of this there seems, however, good reason to doubt. The work is probably a copy of two volumes, but in most editions only the first is reprinted, and copies of the second are said to be now extremely rare even in Spain. An English translation of the first part, by Thomas Rold, appeared under the title of The Civil Wars of Grenada, 5x. London, 1625. In a second edition, 1626, en El libro de la Historia de la Dominacion de los Arabes en España, vol. iii.)

ABEN ESSA, sometimes called Ebenezer, or Evenare, by the scholastic writers, or with his complete name Abraham ben Meir ben Ezra, was a celebrated Jewish scholar, who flourished in the eleventh century, and was held in high repute both as an rabbi and as a writer in the Hebrew language, and as an accomplished writer of the Hebrew language, was very great. Moses Maimonides recommended his son to study the writings of Aben Ezra in preference to all others; and the well-known grammarians, David Kimhi, and the traveller, Benjamin of Tudela, praise his vast erudition: while Judah ben Alchazir, the successful Hebrew translator and mutator of Harizi, acknowledges his merits as a poet. Among ourselves Aben Ezra has become known by his work on the Talmud, which is, in fact, a commentary on the Old Testament, which, it seems, he wrote at different periods, between the years 1110 and 1167. It has been printed in the great Rabbinical editions of the Bible, which have appeared at Venice, Bâle, and Amsterdam, and there have been also several editions in the Hebrew tongue. But, from the great number of his other writings, which are still extant, it is evident that Aben Ezra must have bestowed as much attention upon mathematics, astronomy, philosophy, and medicine, as upon theology, and his works on the game of chess (edited by Thomas Hyde, Oxford, 1694) affords us a specimen of his success in poetic composition. For an enumeration of the works of Aben Ezra, which are still preserved in MS., in several of the libraries of Europe, we must refer to the article, by He Eben Ezra, in Erich and Graber's Encyclopaedia, vol. i.

ABER. This word, which is prefixed to the names of many places in Great Britain, is a Celtic term, and means, generally, the mouth or entrance of a river. It is sometimes defined as the fall of a small water into a greater, which, of course, includes the terms 'mouth of a river,' and 'port or harbour.' Thus, the town of Aberbroochie, in Scotland, is at the mouth of the river Brodie, and New Aberdon is the mouth of the river Yussuf, which is called the Aber deyvanny, at the confluence of the Usk and Gavenny; and Aberystwith at the outlet of the river Istwith.

ABERBROOCHIE, or more commonly ABBRATHOCHIE, a town in Scotland, in the county of Forfar, at the mouth of the river Broomach, which is about twenty miles west of Dundee, between Edinburgh and Aberdeen, having been created so by charter, granted in 1186, and renewed in 1589; and, in conjunction with Aberdeen, Montrose, Brechin, and Brecihin, formerly sent one member to parliament. Aberbroochie was united with Brecihin, Brechin, Forfar, and Montrose in sending a member. It is irregularly built, except in the parts of modern erection. The town-house contains several public offices, as well as a library and reading-room. The chief manufactures are sail-cloth, thread, and leather, which are exported, together with paving-stones and grain. Among the imports are flax, hemp, linseed, and tallow. A small but secure harbour (defended from the sea by a breakwater, and protected by a battery of twelve guns) enables the town to carry on these trade. There are two parish churches, and some dissenting places of worship. The population amounted in 1831 to 6566. There are the ruins of an abbey, founded in honour of St. Thomas-a-Beeket, which was destroyed by the Protestants, in 1547, when order was given to Cardinal Beaton. Aberbroochie is fifty-eight miles north-east of Edinburgh. Lat. 55° 32' north, long. 2° 34' west.

ABERCROMBY (SIR RALPH), a British general, distinguished for many gallant and important actions. He was the son of George Abercromby, Esq., of Tolbodie, in Clackmannanshire, where he was born in 1738. After receiving a liberal education, he entered the army in March, 1756, as a volunteer in the 20 regiment of Dragon Guards. By the year 1787 he had reached the rank of major-general. When the war with France broke out, in 1793, Abercromby
was sent to Holland, with the local rank of lieutenant-general, in the expedition commanded by the Duke of York. His bravery during the prosperous commencement of this attempt was not more conspicuous than the humanity with which he exerted his best energies in the disastrous sequel to alleviate, as far as might be, the miseries of the sick and wounded troops, whom he was charged to conduct in their retreat.

Soon after his return to England, in April, 1796, he was made a Knight of the Bath; and in August of the same year, for they are so called, he was made commander-in-chief of the forces there. In this quarter he took from the enemy, in succession, Grenada, Demerara, Rasqueibo, St. Lucia, St. Vincent, and Trinidad. The last of these colonies fell into his hands in July, and he then returned to Europe, having been previously raised to the rank of lieutenant-general; and on reaching England, he was rewarded for his valuable services by receiving the command of the Scots Greys, and the appointment of lieutenant-governor of the Isle of Wight. In the following year, on the breaking out of the rebellion in Ireland, Sir Ralph proceeded thither, as commander-in-chief; but after he had held that office for a short time, it is understood that his unconcealed aversion to the service in which he was engaged was the cause of his being relieved. As to certain operations, led to a new arrangement, by which he was transferred to the chief military command in Scotland, and the government of Fort Augustus and Fort George, of the utmost importance, or general interest, and with a view to the service abroad, on occasion of the second expedition sent against the French in Holland, in August, 1799, with the conduct of which he was entrusted, before the arrival of the Duke of York. It proved, as it is well known, equally unfortunate with the latter; and his small eminences in the situation of General Abercromby of displaying his activity, intrepidity, and high military talent. In 1801, he was employed to command the English forces despatched for the relief of Egypt; and, in spite of the utmost exertions of the enemy, which fell into his hands, the evacuation of his troops, on the 8th of March, at Aboukir, though not without the loss of 2000 men. A few days after, the enemy made a general attack upon the invading forces, as they lay at anchor in the harbour. He had been in command, who was unversed and severely wounded at an early period of the action, by one of the enemy, whom, notwithstanding, he disarmed, delivering his sword to Sir Sidney Smith, whom he soon after met. Then remounting, he rode back to the lines of Lord Hutchinson, * from those about him, and continued in the field giving his orders with that coolness and perspicuity which had ever marked his character, till long after the action was over, when he fainted through weakness and loss of blood. The injuries which he had received, and which he thus nobly bore in silence, were past the skill of surgery; he was immediately conveyed to the ship of the Admiral, Lord Keith, and there lingered till the 28th, when he expired. His body was interred in the burial-ground of the Commandant of the Grand Master, under the walls of the Castle of St. Elmo, near the town of La Valetta, in Malta. A monument has since been erected to his memory, by order of the House of Commons, in St. Paul’s Cathedral, London. The sum of 10,000 pounds was provided for his widow, as was as excellent as his public merits were great, left four sons, of whom the present Lord Abercromby is the eldest. On his death, his widow was created Baroness Abercromby, with remainder to her issue male by her late husband. A pension of 2000 pounds a year was also settled upon Lady Abercromby and the three succeeding holders of the title.

**Aberdeen.** This name is common to two places situated very near each other, between the rivers Don and Dee, in Scotland; the former is a city, and the latter an Aberdeen. They are often confounded, though they are distinct, both in their municipal and ecclesiastical constitutions.

Old Aberdeen is the more worthy of the two, on the right bank of the Don, was only a village (though said to be of some note) until the twelfth century; when it was elevated to the rank of a city by the removal to it of the bishopric of Morthlas, in Banffshire. The cathedral of St. Machar is now nearly demolished; a small part only being retained for the celebration of divine service. There is also a neat town-house, erected towards the close of the last century, and a bridge of one Gothic arch, built by Bishop Gordon, in the early part of the fourteenth century, up to which the bridge the river Don is navigable. There are some small charitable foundations; but the University (King’s College) is the institution most deserving notice. This is not to be confounded with Marischal College, in New Aberdeen, founded in 1593 by the Marquess of差别, for they are so called, he was made commander-in-chief of the forces there. In this quarter he took from the enemy, in succession, Grenada, Demerara, Rasqueibo, St. Lucia, St. Vincent, and Trinidad. The last of these colonies fell into his hands in July, and he then returned to Europe, having been previously raised to the rank of lieutenant-general; and on reaching England, he was rewarded for his valuable services by receiving the command of the Scots Greys, and the appointment of lieutenant-governor of the Isle of Wight. In the following year, on the breaking out of the rebellion in Ireland, Sir Ralph proceeded thither, as commander-in-chief; but after he had held that office for a short time, it is understood that his unconcealed aversion to the service in which he was engaged was the cause of his being relieved. As to certain operations, led to a new arrangement, by which he was transferred to the chief military command in Scotland, and the government of Fort Augustus and Fort George, of the utmost importance, or general interest, and with a view to the service abroad, on occasion of the second expedition sent against the French in Holland, in August, 1799, with the conduct of which he was entrusted, before the arrival of the Duke of York. It proved, as it is well known, equally unfortunate with the latter; and his small eminences in the situation of General Abercromby of displaying his activity, intrepidity, and high military talent. In 1801, he was employed to command the English forces despatched for the relief of Egypt; and, in spite of the utmost exertions of the enemy, which fell into his hands, the evacuation of his troops, on the 8th of March, at Aboukir, though not without the loss of 2000 men. A few days after, the enemy made a general attack upon the invading forces, as they lay at anchor in the harbour. He had been in command, who was unversed and severely wounded at an early period of the action, by one of the enemy, whom, notwithstanding, he disarmed, delivering his sword to Sir Sidney Smith, whom he soon after met. Then remounting, he rode back to the lines of Lord Hutchinson, * from those about him, and continued in the field giving his orders with that coolness and perspicuity which had ever marked his character, till long after the action was over, when he fainted through weakness and loss of blood. The injuries which he had received, and which he thus nobly bore in silence, were past the skill of surgery; he was immediately conveyed to the ship of the Admiral, Lord Keith, and there lingered till the 28th, when he expired. His body was interred in the burial-ground of the Commandant of the Grand Master, under the walls of the Castle of St. Elmo, near the town of La Valetta, in Malta. A monument has since been erected to his memory, by order of the House of Commons, in St. Paul’s Cathedral, London. The sum of 10,000 pounds was provided for his widow, as was as excellent as his public merits were great, left four sons, of whom the present Lord Abercromby is the eldest. On his death, his widow was created Baroness Abercromby, with remainder to her issue male by her late husband. A pension of 2000 pounds a year was also settled upon Lady Abercromby and the three succeeding holders of the title.

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exported as such, or worked up into canvas, sail-cloth, sheeting, &c.; and the printed cottons are in considerable repute for quality and colour. Thread, carpets, and coarse cloths; nails, cordage, and materials for ship-building, are also among its productions. These articles, with granite, of which 7000 tons, for paving, are sent yearly to London, salmon, (caught in the Dee and Don,) and grain, are the chief exports; and, in return, besides articles of ordinary consumption, they bring in wool from London and New-
castle, flax from different parts of England and Holland, and coals from England and the Firth of Forth. There are some breweries in the town, as also iron founders, and ship-building yards, at one of which several steam-vessels, of between 500 and 600 tons, have been fitted out.

The harbour is spacious and safe: and a pier, erected under the direction of the celebrated Smeaton, and subsequently lengthened, has caused a diminution of the bar which once obstructed the entrance, so that vessels drawing seven or eight feet of water can enter at any time. By a parliamentary return of 1830, it appears that 350 vessels, with an aggregate tonnage of 46,201, belonged to the port. There is a navigable canal, eighteen miles in length, from this place to the bridge over the Don at Inverary.

An English garrison, which occupied the castle in the beginning of the fourteenth century, having been cut off by the town-people, the fleet of Edward III., attacked and devastated Aberdeen in 1313: and a victory gained over an English detachment at Dumott drew down a more com-
plete destruction from Edward's army in 1326. It was on its being rebuilt after this calamity, that the designation of New Aberdeen was bestowed. Many of the citizens were slain in the defeat which the Covenanters suffered from

Montrose in 1644.

New Aberdeen is 108 miles N.N.E. of Edinburgh, and 272 N. of W. of London: lat. 57° 9' N., and long. 2° 6' W. of Greenwich. The population of the burgh and parish, in 1821, was 26,184; by the last returns in 1831 it had increased to 32,912.

ABERDEINE (Carduelis spinus, Cuvier: Fringilla figurina, Ranzani), sometimes called the sickle, a well-known song-bird, which has some resemblance to the green variety of the canary-bird, but there is considerable difference in indi-

cividual birds with respect to the brightness of colouring. Fie-

ning's specific description, therefore, 'the head above, black; the neck, breast, and rump, lemon yellow,' though it applies to individual male birds, will not apply to others, and not at all to the female; as we have seen male birds, at least two years old, with the head grey rather than black, and others with neck, breast, and rump as bright yellow as the marks on the wings of the goldfinch. In the latter instances the head was jet black.

Syne conjectures that if the aberdevine is not the original stock-bird of the cage-canary, it is very similar to it, and ought to be considered rather a variety than a distinct species: but if he had looked closely at the points of the bills, the lengths of the tails; and particularly at the motions and manners of these several birds, we think he would have come to a different conclusion. — [See CANARY.]

Sepp has delineated the nest of the aberdevine in the cleft of an oak, built with dry bent mixed with leaves, and

profusely lined with feathers; the base neatly rounded, and the feathers projecting above the rim, and concealing the eggs, which are bluish-white speckled with purplish red, like those of the goldfinch. Tenminick, again, says it builds in the highest branches of the pine.

It breeds in the north of Britain, and in the only visits Bri-
tain, Germany, and France in the autumn and winter. It is

represented in some books as very irregular in its migra-
tions, particularly to this country: but we suspect that this opinion has perhaps arisen from the irregularity of obser-
vations, for we have been attentive to the subject, we have remarked its arrival about Lee, in Kent, to be almost as regular as the departure of the swallows, which takes place about the same time. During its winter sojourn with us, the aberdevine feels chiefly on the seeds of the birch and alder.

As a cage-bird it is frequently paired with the canary, to produce what are termed mule-birds; but it is, besides, a lively and persevering songster. One which we possessed, though the colours were so dull as scarcely to distinguish it from a hen-bird, sang for ten or eleven months in the year. Its song would be very pleasing, though not so plaintive as that of the linnet, nor so sprightly as that of the goldfinch; if it did not at intervals introduce a jarring guttural note, almost like the break of the nightingale when angry.

ABERGAVENNY, a town in the county of Monmouth, at the confluence of the Usk and Gavenny, situated in a range of meadows, surrounded by several hills. There are no fine buildings over the bridge, of 600 years' standing, an ancient and spacious church, as well as the remains of a castle, and of a Benedictine priory founded soon after the Conquest. The town is long and troubling, the streets narrow, and the houses irregularly built; but considerable improvements have been made in the town, additions and place and removing projections. There are several Dissent-
ing meeting-houses, a Catholic chapel, a grammar-school, a Lanercastrian, and several Sunday schools. The principal building is in the parish of which a considerable quantity is sold in the market in the months of July and August. Many of coal and iron afforded by the neighbouring mountains has given rise to several iron-works in the surrounding dis-

trict. The population in 1831 was 4230. The Monmouth-
shire and Brecon chains possess near the town, and gives facili-
ties for its trade and that of the neighbourhood. Abergav-
enny is supposed to have been the Roman station of Gobannium, so called from the river Gobannius (Gavenny), and once possessed a charter of incorporation, which was confirmed in the reign of King John. It is 26 miles W. by N. of Monmouth, and 143 W. by N. of London; lat.

31° 50' N., long. 2° 58' W.

ABERNETHY (JOHN), a distinguished surgeon, born in the year 1763-4, either at the town of Abernethy in Scotland, or at that of Derry in Ireland, who enjoyed the honour of having been the place of his birth. He died at Enfield, after a protracted illness, on the 18th of April, 1831, in the sixty-seventh year of his age. In early youth he removed from the place of his birth, and resided with his parents in London. He received the elements of grammatical and classical instruction at a day-school in Lothbury, but it does not appear that he enjoyed the advantage of any higher education than that afforded by the ordinary day-

school of that period. At the usual age he was apprenticed to Sir Charles Bick, surgeon to St. Bartholomew's Hospital, under whom, and especially in the wards of this hospital, he had ample opportunities of acquiring a thorough knowledge of his profession, of which he availed himself with diligence. Competent at first judgements, who observed at this early period the qualities of his mind and his habits of study, predicted that he would one day acquire fame if not fortune. Though he appeared before the public early as an author, and though his very first works stamped him as a man of genius, endow-
dowed with a philosophical and original mind, yet he rose little by little from the public eye. For a considerable time he had but few pupils, and he was at first by no means a good lecturer, his delivery being attended with a more than ordinary degree of hesitation. On the death of Sir Charles Bick, his former master, he was elected surgeon in his room; and, subsequently, St. Bar-
tholomew's Hospital obtained under him a reputation which it had never before acquired.
Abernethy was a pupil of John Hunter, and the earnestness
and delight with which, at an early age, he received the lessons
of anatomy and physiology, and the observations of nature, was
his own judgment. It was from this profound and original
thinker, who exercised an extraordinary influence over the
understanding, tastes, and pursuits of his young pupil, that
Abernethy derived that ardent love of physiology, by the
application of which he was enabled to prepare himself for a
rude art into a beautiful science. He made himself thor-
oughly acquainted with anatomy, but it was that he might be
admitted into the new world of physiology; he studied its
laws, but not the final function: and the moment he had obtained a clear idea of
these two sciences, he saw the applications of which they
were capable to the treatment of disease. From that
moment he looked with contempt on the empiricism
then almost universal in surgery; he ridiculed its jargon; he
exposed the narrowness of its principles, if it be at all
allowable to designate by such a term the ignorant dogmas
which alone regulated the practice of the surgeon.

If this were, indeed, the ordinary result, then it must be
admitted that the excellence of Mr. Abernethy, as a teacher,
was, after all, but of a secondary order. He only teaches well
who sends his pupil away thirsting after truth, determined to
seek it, feeling the necessity of a nameless, all-pervading,
and invaluable, but unaccountable, influence, capable to
be exerted by remedies calculated to make a salutary impression on the general
frame, not by topical dressing, nor any mere manipula-
tions of surgery. This single principle changed the aspect
of the entire field of surgery, and elevated it from a manual
art into the rank of a science. And to this first principle he
added a second, the range of which is perhaps somewhat
less extensive, but the practical importance of which is
nevertheless very great. He taught, namely, that the
ordered state of the constitution either original from, or is
rigorously allied with, derangements of the stomach
and bowels, and that it can only be reached by remedies which
first exercise a curative influence upon these organs. The
broadest way to health is usually conferred upon mankind by
the establishment and establishment of these two principles, both
by the prevention and the mitigation of disease and suffer-
ing, it were vain to attempt to estimate, and it is not easy to
pay to their author the debt of gratitude which it is due.

Further, the same philosophical view of the structure and
functions of the human frame, which enabled this acute
physiologist so greatly to improve the theory and practice of
surgery, suggested, and at the same time armed him with the
courage to perform, two operations in surgery bolder
than any that had ever before been achieved, and the repe-
tition of which has since been attended with splendid suc-
ceed—namely, the tying the carotid and the external iliac
arteries. The announcement of the performance of these
capital operations, at once established his reputation as a
surgeon, and increased the credit of the English school
throughout Europe.

Great, however, as was the reputation which this distin-
guished man acquired, and ardent as of course were the
prospects he had of the future, there were not a few old
wise men who looked with jealousy upon his prowess; to
that he gave his chief celebrity chiefly to his success as a teacher. Gifted with the genius to master
and extend his science, he was endowed with the still rarer
capacity of communicating to others in a clear, succinct,
and illuminating manner a list of the valuable points
he knew. Easy and fluent, yet not incoherent—abounding with
illustration and anecdote, yet methodical—logical, yet often
vivid, and occasionally humorous almost to coarseness—
the impression made upon his own mind by the
prelections of his master, gives the following account, which, if
true, is decidedly unfavourable as to the ultimate result of the
moral and spirit of his lecturing. He so eloquently ex-
pressed his deductions, so intimate was he, so
nicely disentangled the perplexities of many abstruse
subjects; he made that so easy which was before so difficult,—
that every man who heard him feels perhaps to this day, that
for some important portion of his knowledge he is indebted
Mr. Abernethy. He revealed to the public for the first time
his peculiar doctrine; he so reasoned it, so acted it, and so
dramatized it (those who have heard him will know what I
mean); and then in his own droll way he so disbarred
the more laborious searchers after truth in the places of

ABERRATION (of Light), an astronomical pheno-
menon, being an apparent alteration of the place of
a star, arising from the combined motion of the spectator,
and of the light which brings the impression of the star to

No. 4. [THE PENNY CYCLOPEDIA.]
his eye. We should, however, premise, in order that the receiver might be too large a portion of aberration, that it is never so much as 2°, that is, the apparent place of the star differs from its real place less than the ninetieth part of the apparent diameter of the sun. It is no wonder, therefore, that practical astronomy was considerably advanced before the discovery was made. If our sense of vision were perfect, or if light moved no faster than a rain-drop, we should have terrestrial aberration, that is, objects would change their relative places when we began to move, and if we went as fast as a ray of light moved, the utmost confusion would ensue. When we ride in a carriage, into which the rain is beating, we mistake the direction of the rain, for the cause of which phenomenon, see APPARENT MOTION. But as light moves with a velocity so great that its motion cannot come into contact with any one mile in a second, its motion is so great compared with any we can give ourselves, that its passage from any one terrestrial object to another may be considered as instantaneous.

The motion of a spectator on the earth which goes round the sun at the average rate of about eighteen miles in a second, though less than the ten thousandth part of that of light, is nevertheless sufficient to cause a small variation in the place of the star, perceptible by good astronomical instruments.

We know (see APPARENT MOTION) that if a body A be struck in two different directions at the same instant, with impulses which would separately carry it them in one second of time, the result of the combined impulses is, that it moves in one second through an, the diagonal of the parallelogram, whose sides are an and AC. Again, if the spectator and the object at which he is looking are both in motion, the appearances presented by the motion will be preserved, if we render the spectator stationary, provided we give to the object the velocity and continued motion that would have been had, in addition to its own. Hence, if the spectator moves from P to Q in one second, while in the same time the object moves from A to C, and if AB be equal to PQ, the spectator, who does not perceive his own motion, will imagine that the object moves through AC in one second, he himself remaining at P. Hence, if rays of light move parallel to AC, and he can distinguish them, they will appear to him to move parallel to AB. Though he cannot see the light itself, he will mistake the direction of the object from which it comes: and if asked to point it out, will place his finger in the direction of AB instead of PM.

The following illustration will place this in a clearer light.

Let us suppose the rays to move so slowly, that a spectator can carry a tube long enough for light to take some perceptible time in passing from one end of it to the other. This will do for our purpose, since, though by such a supposition the aberration will be very much increased, yet the effort, and the reason of it, will be of the same kind as if light were supposed to have its real velocity. The star, being at an immense distance, the rays which reach the spectator in different parts of the second may be called parallel, without sensible error. Thus, while in one second the spectator moves from A to B, he receives rays of light in the direction indicated by the dotted lines. The question now is, in what direction must he hold the tube, so as to see the star through it? If he were at rest, that direction would evidently be AC.

Let AB be the line described by the spectator in one second, during which time let a ray of light move from A to B, or from C to A. Join AB, and let AC be the length and direction of the tube. Divide the second into any number of equal parts, say six, and carry the tube into the various positions which it will successively occupy. Consider a ray of light as a succession of little particles moving one after another in a straight line. Then when the eye has come to p, the particle p will have come to q; when the eye is at q, the particle will be at r, and so on. We have then so placed the tube, that its motion will not interfere with that of the ray, which moves as freely in the moving tube as if it were in a tube which were not moving. To the spectator, who does not perceive his own motion, the tube is stationary, and the ray of light appears to come down it; therefore AU will be the direction in which he sees the star, instead of AC. The angle CAU, contained between the real and apparent directions, is called the aberration. Here AU is the diagonal of the parallelogram BACU, in which AC is equal and opposite to AB, as before noticed. To apply this, we must remark—

1. That the above figure is much distorted, since AB is not the ten thousandth of AU, whence the aberration will be very small.

2. That the aberration is in the plane passing through AN, the line of the earth’s course for the moment, and through the real direction AC of the star; whence, as the earth changes the direction of its motion in going round the sun, the direction of the aberration will also change.

3. That we have committed an error in supposing the lines AC and AU to be parallel, since they meet at the star; which error, on account of the star’s enormous distance, will be imperceptible.

4. That AU is not properly the spectator’s motion round the sun only, but compounded of that and his motion round the earth’s axis; the latter, however, being at most not one tenth of a mile in a second, while the former is eighteen miles per second, does not produce any sensible aberration.

5. The real direction AC of the light may be considered as the same at every part of the earth’s orbit, on account of the distance of the star.

6. The aberration always throws the star apparently nearer to the earth’s course, that is, AU is always within the angle CAN.

7. The aberration is greater or less according as the angle CAN is nearer to, or further from, a right angle, and is greatest when CAN is a right angle. This result may really be proved by those who understand trigonometry, if they recollect that AC and AU are given, being the velocity of the earth and the apparent velocity of light, and that

\[
\sin \text{sin CAU} = \frac{\text{sin CAV}}{\text{sin AUV}} = \frac{\text{sin CAN}}{\text{sin CUN}}.
\]

Let us suppose, which will be exactly true for our purpose, that the earth moves in a circle (the ecliptic), of which the sun is in the centre. The line SA, perpendicular to the plane of the ecliptic, looks towards the pole of the ecliptic, let SU be the direction of a star, SQU perpendicular to the plane of the ecliptic to SM, and ASR perpendicular to MPQ in the same plane. When the earth is at p, it is moving in the direction SM perpendicular to SE, and the star, from its great distance, is in the direction EC parallel to SC.

Hence the aberration takes place in the plane CEM, that is, the star is a little lowered towards SM, and appears in the direction EN. Let the needle SN move round the circle with the earth, so as always to indicate the direction in which the earth is moving, that is, SN is always parallel to EM, and can be furnished with a tube long enough for light to take some perceptible time in passing from one end of it to the other. This will do for our purpose, since, though by such a supposition the aberration will be very much increased, yet the effort, and the reason of it, will be of the same kind as if light were supposed to have its real velocity. The star being at an immense distance, the rays which reach the spectator in different parts of the second may be called parallel, without sensible error. Thus, while in one second the spectator moves from A to B, he receives rays of light in the direction indicated by the dotted lines.
needle points to or $q$, that is, when the earth is at $\pi$ or $r$; and least, when the needle points to $r$ or $q$, that is, when the earth is at $p$ or $q$; because the angle $nq$ is a right angle when $n$ is at $p$ or $q$, and differs most from a right angle when $n$ is at $r$ or $r$. Hence the aberration increases as the earth moves from $p$ to $t$, diminishes from $t$ to $q$, increases from $q$ to $s$, and decreases again from $s$ to $p$. The line in which the star appears, moves round $sn$ in the course of a year, and describes a cone, while the star appears to describe a small oval or ellipse about $n$, the greater axis of which is parallel to $pq$, and the lesser to $rt$; such as $pqr$, in which $p$ is the apparent place when the earth is at $p$, and $r$ at the position of the sun $1$ year hence. When the star itself is in the pole of the ecliptic, or is seen in the direction $sa$, the angle $sa$ is always a right angle, the aberration is always of the same magnitude, and the apparent path of the star is a circle. As we take stars in which $as$ is more inclined to the ecliptic, the oval becomes flattened in proportion to its length, so that when the star is in the ecliptic, it appears to vibrate backwards and forwards in a straight line, going and returning once in each year.

If the star be on the solstitial colure, the points $p$ and $q$ will be the equinoxes, and $r$ and $m$ the solstices. The aberration will consequently be greatest at the solstices, and least at the equinoxes. We shall refer to this case presently.

We next consider the case in which we are at the centre. [See Apparent Motion, Spheres.] We may represent the phenomenon on a common globe by drawing a small ellipse or oval round the star, the major axis of which is parallel to the ecliptic, and the figure of which is the same whether $sp$ or $qt$ is the apparent place; whereas, when $nm$ is the apparent place, the star is observed $\frac{1}{2}$ further from the ecliptic. The major axis will always be an arc of $41^\circ$, and the minor axis will be $41^\circ$ multiplied by the sine of $n$ or the star's latitude.

Previously to entering upon the quantity of aberration, we shall give some account of the discovery, which is one of the most remarkable in the history of science. The arguments for the motion of the earth, though tolerably conclusive, were yet principally derived from the great simplicity of the hypotheses arrived at by others, since all the phenomena then observed could be equally well explained upon the supposition, that the other planes moved round the sun, at the same time that the sun moved round the earth. It remained, therefore, to find some experimentum cruciatum, some phenomenon, which admitted of no other explanation except what could be derived from the earth's motion. The first idea which suggested itself to astronomers was, that if the earth really moved, the stars would appear to change their places; though they did not count much by this, since they knew that the mean apparent places of stars might be so great, that the whole diameter of the earth's orbit would be too small a change of position to cause any perceptible change of place. [See Parallax.] To illustrate this, suppose the star $s$ to be in the direction $q$, and when it is at $p$, in the direction $p$. Draw $pq$ parallel to $q$. The spectator, who imagines himself at rest, will, if he observes the star at these two epochs, see a difference of position corresponding to the angle $npp$, at least to the difference of the star be not so great as to render that angle imperceptible to his instruments. This, however, will take place in the plane passing through the star and $pq$, whereas the effect of aberration takes place in a plane perpendicular to that plane. If, therefore, the plane of the path of the sun be perpendicular to that of the earth's orbit, we shall have small changes in the position of the stars; but seeing that they were in a direction different from that which would have been caused by the earth's motion only, they do not appear to have advanced any other explanation. In 1725, Bradley, Savilian Professor of Astronomy at Oxford, and afterwards Astronomer Royal, and Molyneux, the son of Locke's well-known friend of that name, set about this question conjointly. The most correct instrument for measuring was the quadrant, invented by the French Jesuits of the Zenith Society, and a very large one, having a telescope twenty-four feet long, made by Graham, one of the most celebrated artists this country has produced, was erected at Kew, under the directions of Molyneux. A zenith sector measured the line, and afterwards from a record of the star's passage the meridian, the zenith being determined by a plumb line. The instrument having a very small range, the star must not be far from the zenith, and the one chosen on this occasion was $\gamma$ Draconis, which happens to be within about $16^\circ$ of the pole of the ecliptic, and passes very near the zenith of London. This star will, from the preceding account of aberration, appear to describe nearly a small circle about the place it would have if the earth had no motion, which is called its mean place. In the maps of the stars, published by the Society, the little circle, which represents $\gamma$ Draconis, will do well enough to give an idea of the path which it describes every year. By measuring the star's zenith distance when on the meridian, its polar distance was also measured, since the zenith and pole are both points of the meridian, distant from one another by the colatitude of the place. [See Complement.] That is, by adding the difference between $90^\circ$ and the latitude of Kew to the meridional zenith distance of the star at that place, we obtain its polar distance. In fig. 4, $s$ represents the mean place of the star, and $v$ the small ellipse, nearly a circle, described by the star in one year. The reader must imagine this circle placed in the heavens, and the line $pf$ bent over his head, so that $z$ is his zenith and $p$ the pole. We must now show how to find the points of the ellipse $v$, answering to the four principal periods of the year—namely, the solstices and equinoxes. Referring back to fig. 3, in which we finally placed the spectator at $s$, the sun will appear to describe the circle which the earth really describes; that is, as the earth moves from $q$ to $r$, the sun will appear to move from $p$ to $t$. Hence, when the earth is in the line of the apparent place of the star towards $sa$, $90^\circ$ before the earth, it throws it also towards a line $90^\circ$ behind the sun's apparent place. Let $z$, fig. 5, be the earth, $w$ the apparent axis of the sun, $v$ the axis of the earth, $w$ the instrument capable only of measuring changes in the polar distance, the time being the winter solstice. The circle which bounds the whole figure is the solstitial colure, and as the star $\gamma$ Draconis is very nearly on that colure, we will suppose it to be at $s$. Let $z$ be the spectator's zenith, that is, let him be on such a part of the earth that the plumb line falls in the direction of the point $z$ by the arrows, $v$ is the vernal equinox, $s$ the summer solstice, $a$ the autumnal equinox, and $w$ the winter solstice. The
which had been previously discovered by observation of Jupiter's satellites, must, when combined with that of the earth, produce an apparent change of place of a star. Following up this idea, he found that it was fully sufficient to account for the deviation he had observed. We have previously explained why the idea of a parallax or change of place of a star, arising from a change of the observer's position, for a moment, is leading to a new and comprehensive view of the universe. The phenomenon of aberration has also long been known to the astronomers of the ancient world, and great efforts have been made to explain it. The hypothesis of the Copernican system is by no means the only one which has been proposed to account for the apparent motion of the planets. It is, however, the most successful, and it is the only one which has been able to account for the observed phenomena in a satisfactory manner. The Copernican system is therefore the most probable one, and it is the one which we shall adopt in our account of the subject.

The greatest aberration, as we have observed, is parallel to the ecliptic, and is due to the motion of the earth around the sun. The aberration of a star is the apparent change of place of a star, produced by the motion of the earth around the sun. The aberration of a star is the apparent change of place of a star, produced by the motion of the earth around the sun. The aberration of a star is the apparent change of place of a star, produced by the motion of the earth around the sun. The aberration of a star is the apparent change of place of a star, produced by the motion of the earth around the sun. The aberration of a star is the apparent change of place of a star, produced by the motion of the earth around the sun. The aberration of a star is the apparent change of place of a star, produced by the motion of the earth around the sun. The aberration of a star is the apparent change of place of a star, produced by the motion of the earth around the sun. The aberration of a star is the apparent change of place of a star, produced by the motion of the earth around the sun. The aberration of a star is the apparent change of place of a star, produced by the motion of the earth around the sun. The aberration of a star is the apparent change of place of a star, produced by the motion of the earth around the sun.
that the freehold of lands could never be in abeyance. Still it was always admitted that both the inheritance and the freehold might, in some cases, be in abeyance. Thus, in the case of globe lands belonging to parsons, and of lands held by bishops and other corporations sole, the inheritance is and must always be in the absence of any circumstances, be entitled to more than an estate for life in these lands; and during a vacancy of the church, the freehold is in abeyance; for, no parson being actually appointed, it cannot possibly rest in any one, nor can the freehold be in the patron, who, though he possesses a right to present to the benefice, has no direct interest in the land annexed to it.

In this case, the law acknowledges a necessity that the freehold or inheritance should for a time be in suspense or in abeyance, but such an abeyance is always discouraged as much as possible, and is never permitted by the law to be created by the voluntary acts of parties. Therefore if a man grant land in such a manner that the freehold would, if the deed were allowed to take effect, be in abeyance, the law comes forward and declares the deed granting such an estate to be void; and if the grant be so framed that the inheritance would be in abeyance, the law declares that the inheritance shall remain in the person making the conveyance. The object of the law is to prevent the presentation of a freehold subsisting for a time without an owner, an evil which it guards against with the greatest vigilance; and therefore, if, as in the case last put, land is so granted that by possibility upon the death of one person there may be no one entitled to take the land, the law immediately appoints the grantor to supply the gap, if any should occur; and though he had, as he considered and intended, parted with all his interest, another rule of law, which will be more fully considered in treating of contingent remainders, then steps in and assigns him the land for ever. Titles of Honour are also sometimes said to be in abeyance, as where the persons next in inheritance, to the last possessor, are several females, or co-partners. In this case the title is not extinguished, but under the nomination of the king, who by his prerogative is said to be the fountain of honours and dignities. Several instances of the exercise of this prerogative are on record both in ancient and modern times. (See 'Coke upon Littleton' 165, a note 16, 17.)

ABIB, the first month of the Hebrew year, now more generally known by the Chaldee name Nisan. This month is first mentioned by name in Exodus xiii. 4. 'This day came ye out in the month of Abib;' and in the second verse of the preceding chapter it is appointed to be the beginning of the year.

On the 14th of this month, in the evening, the great festival of the Passover commences, according to the precept in Exodus xii. 18. 'In the first month, on the fourteenth day of the month, at even ye shall eat unleavened bread, &c.' At sunset the paschal lamb is killed, the use of unleavened bread begins, and all servile labour ceases. A feast of barley was gathered on the evening of the 15th, and offered up on the 16th as the first fruits of the harvest. The reaping commences the next day. The eating of unleavened bread finishes on the 21st.

In the calendar of the modern Jews, Abib is no longer the beginning of the year, its place being usurped by Tisri, which was anciently the seventh month. Abib contains thirty days, and must not begin on Monday, Wednesday, or Friday. In those cases where the beginning would fall regularly on one of those days, the occurrence is obviated by adding or taking away a day of the preceding year.

The fast of the death of Joshua is celebrated on the 26th day of the month, unless it should happen to be Sabbath, when the fast is postponed to the following day, or Sunday.

This month begins on the first appearance of the new moon nearest the vernal equinox, or the 21st of March. In 1833 the first of Abib will be on the 21st of March, on which day the new moon falls.

The word Abib signifies 'an ear of corn;' and the month, without doubt, received its name from the season in which it occurred, as the corn was then in ear in Egypt and Palestine.

Abib is the name given by the modern Coptic Christians to their month which begins on the 25th of June. The Coptic name is Epip.

ABIES, in Botany (the Fir), a genus of trees of the coniferous tribe, well-known for the valuable timber that is produced by many of the species. It was formerly considered a part of the genus Pinus itself; but modern botanists have followed the popular practice, and have distinguished it. The origin of the Latin name is unknown; that of the English appellation is the Saxon furh-wudu, fir-wood.

**GENERIC CHARACTER.**

*Flowers monocious.*

**MALES.** Calthin simple, solitary, terminal, or axillary. Stamens obtuse, and often callous at the apex, terminated by a jagged membrane.

**FEMALES.** Calthin somewhat cylindrical; their scales two-flowered, imbricated, and having frequently at their base externally a bractea, which is either very short or lengthened beyond the scales themselves, and terminated by a taper point.

Comes more or less cylindrical; the scales imbricated and woody, but not thickened at the extremity; seeds ending in a membranous wing.

**Embryos** about the length of the seed, with several closely-packed cotyledons.

**Trees of various sizes,** usually with a straight, conical, undivided trunk, from which proceed spreading, horizontal, or dropping branches, arranged in a pyramidal manner. Leaves either solitary, or collected in little fascicles, deciduous or evergreen.

From Pinus, or the pine-tree, the fir is obviously distinguished by its more pyramidal form, and by its leaves arising singly from around the stem, not by twos, or threes, or a greater number, from out of a membranous sheathing scale, as well as by the characters in the fructification above described. Its species form four very natural tribes, of the first of which, the silver fir may be taken as the representative; of the second, the Norway spruce; of the third, the larch; and of the fourth, the cedar of Lebanon. As out of these are interesting either for the excellence of their wood or as objects of ornament, we shall briefly notice all that are at present known. Those who wish for further information should consult Mr. Lambert's Monograph of the Genus Pinus—L. C. Richard's Monocure sur les Coniferes of Michaux's Histoire des Arbres Forestiers de l'Amérique Septentrionale, &c.

**SECT. 1.** Leaves growing singly round the branches, and all turned towards one side.—**SILVIRAS.**

No. 1. *Abies Picea,* the Silver Fir (Abies pectinata, De Candolle Fl. Fr., ii. 275; Pinus Picea, Linnaeus Sp. pl. 1420; Lambert, t. 40). Leaves arranged like the teeth of a comb somewhat emarginate, of a whitish colour underneath. Cones erect, with very blunt closely-pressed scales, which...
are much shorter than the taper-pointed inflexed bracteae. A native of the mountains of the middle and south of Europe, in stony, dry, exposed situations. Its favourite district seems to be on the Pollino and in the forest of Rubi, in the kingdom of Naples, where it is found and cultivated in the florists’ gardens from 130 to 150 feet in height, and from its seeming to be closely allied to Rhododendron to the name of pulcherrima (most beautiful), applied to it by Virgil. This tree is readily known by its leaves having their points all turned towards the sky, at an angle of 45°, and often 2 inches in length. At the base of the trunk, especially in the younger years, are found small clusters of whitish flowers, not unlike the thistle. It is often found in company with several other plants, like Agastache, and Lonicera, together forming a most beautiful and fragrant retreat. For its successful cultivation in this country it requires strong land, such as will suit the oak, and a sheltered situation; it will then become a very large tree. From a communication to Mr. Lambert, it appears that trees have been cultivated which, at 100 years of age, contain six loads, 210 cubic feet, of timber. It is said by some to grow slowly for the first fifteen years, but afterwards with great rapidity. A plant in Woburn Park is recorded to have grown for 110 years, to the rate of one foot in height, and three and a half inches in circumference. Its trunk sometimes arrives at 150 feet in height, and six feet in diameter. Antiquarians, not considering that this plant is the real abies pulcherrima of Virgil, and of the Roman authors, have gathered in vain attempts to make the declaration of Caesar (v. 12), that he found in Britain all the trees of Gaul, except the beechn and abies, with the well-known fact that fir-wood is abundant in our ancient posses, and has met with even beneath the foundations of Roman roads. What Caesar meant it is hard to say, but that he did not meet with silver fir in Britain; of the pine he says nothing, and therefore it is to be presumed that he found it.

No. 4. Abies Sibiriaca, the Siberian Silver Fir (Pinus Siberica and Pinus Pichiana of the gardens). Scarcely anything certain has been published of this tree, which, according to Linnaeus, Mr. Lambert, and others, is the same as the Abies picea, our No. 1, but which Russian botanists distinguish as a distinct species. Grimmel describes it as a native of all parts of Siberia, and from 25 to 50 N. lat. in mountainous regions, especially in the upper country lying between the Irissch and the Ob, where it forms dense woods. The Russians call it pichia, or fir.

No. 5. Abies nobilis, Large-braided Fir (Pinus nobilis, Douglas and Lambard). Leaves very numerous, falcate, all turned one way, of nearly the same colour on both sides. Cones oblong, erect, with rounded broad scales concealed by the bracts. A native of the western parts of Russia, and is frequently found in the Caucasus. It is also a common tree in the mountains of northern California, where it was found by Mr. Douglas. The timber is said to be of excellent quality. The cones are about six to eight inches long, and are found in clusters of not less than one hundred. It is a very hardy and vigorous tree, and is said to grow in the most sterile and rocky situations. It is also found in Asia Minor, and is therefore adapted, like the yew, to the construction of live-fences. A great deal of the essence of spruce is extracted from its shoots.

No. 6. Abies Frazeri, the Double Balsam Fir (Pinus Frazeri, Pursh, Flor. Amer. Sept., 1833: Lamb., vol. i., t. 42). Leaves linear, emarginate, silvery-white beneath. Cones oblong, squarrose. Bracteae somewhat leafy, inversely coriaceous, with ovate, mucronate, northerly, very small cones. Most abundant in the mountainous districts of Carolina and Pennsylvania. Pursh is the only botanist who appears to have seen this species in its native situations. According to Mr. Lambert it is little more than a shrub, seldom exceeding ten feet, and more frequently, at least in this country, much smaller than that. This botanist considers it well suited for lawns and pleasure-grounds in situations where it is wanted to break particular lines, but not to interrupt the view. A fine specimen exists in the nursery of Mr. Lamport, and is said to have grown from two to three feet in diameter, and ten feet in height.

No. 7. Abies Wechmanni, Webb’s Fir (Pinus Wechmanni, Wallch, Cat.; Lamb., t. 41; Pinus spectabilis, Lamb.). Leaves linear, solitary, flat, all-spreading, and turned one way, silvery-white beneath, with a deep notch at the extreme point. Commonly found in the blue ranges of California, where it forms large and lovely groves. It is rarely, if ever, found in groups of more than one hundred trees, nor in large clusters. Found by Mr. Weber’s house in California.

No. 8. Abies Cambrica, the Hemlock Spruce Fir (Abies Cambrica, Lamb., vol. i., t. 43). Leaves flat, arranged irregularly in two rows; when young, downy as well as the yellow slender branches. Cones very small, ovate, sharp pointed, with rather acute, ciliate, entire scales; seeds very small. The most northerly situation in which this tree is found is about Hudson’s Bay, in lat. 51°. Near Quebec it forms extensive forests; in Nova Scotia, New Brunswick, Vermont, and the upper part of New Hampshire, it is extremely common; but in the middle and southern states it is confined to the Alleghany and their dependent ridges, where it inhabits the sides of torrents and the bleakest situations. It is a noble species, rising to the height of seventy or eighty feet, and measuring from two to three feet in diameter. It appears more frequent by the shores of Songquiat than in the principal mountains. The leaves are elongated, narrow, and acuminate, with a cordate base, and acuminate apex. The wood is of little value, being neither sound nor durable: it is chiefly employed for the manufacture of laths and for coarse in-door work. The bark is exceedingly valuable for tanning; mixed with oak-bark, it is said to be much better than oak-bark, and is therefore employed in its natural state, for the manufacture of tallow-candles. It is said to be a great deal of the essence of spruce is extracted from its shoots.
Cones detach fine the arrives little drawing man. Leaves known Leaves Deppe He is 5. a is sufficient stature in and unknown. Humboldt boldt this it highest flat, tribe. Schiede Guchilaque minute subtended to by three covered 8000 feet. are unknown. The period, vol. ii. p. 5; Lambert, t. 43). Young branches quite smooth. Leaves arranged in two rows, sharp pointed, covered beneath with a glaucous bloom.—Found by Humboldt on the lower hills of Mexico, between Masatla and Chilpancingo, at an elevation of 4000 ft. Deppe and Schiede found it on the cold mountains of Orizaba, at the highest limit of arboreal vegetation. It is described as a lofty tree, resembling Abies picea and balsamea, from which it is distinguished by its sharp-pointed leaves. The flowers are unknown. The cones of this tree, which are used for adornment of churches in Mexico. According to Mr. Lambert, the cones are like those of the cedar of Lebanon, but smaller, and almost black. The Mexicans call it oyamel. From specimens brought by Mr. Graham from Mexico, we should suppose this to be a very beautiful tree; the leaves are longer, and the branches more slender than those of any other of the Silver tribe.

No. 11. Abies hirtella, the Hairy Fir (Pinus hirtella, Humboldt and Kunth, Nov. gen. et sp. pl. ii. p. 5). Young branches covered with hairs. Leaves ovate-oblong, flat, acute, covered with glaucous bloom beneath.—Known only from the incomplete account of Humboldt, who found it on the mountains of Mexico near El Guarda, between Guchilaque and the city of Mexico, growing at an elevation of between 9000 and 9000 feet. He describes it as a small tree, three or four times as high as a man. Its cones and flowers are wholly unknown. The leaves are about an inch and a quarter long.

No. 12. Abies Smithiana, the Indian Silver Fir (Pinus Smithiana, Wallich, Plant. As. rarior, vol. iii. p. 24, t. 246). Leaves slender, four-cornered, whitish beneath, a little turned towards one side. Cones erect, ovate-oblong, with ovate, rounded, even scales.—A native of the mountains next the Himalayeh, where it is called by the natives raga. A tree of enormous size, with nearly opposite branches, covered with short down, and so arranged as to form generally two rows. Leaves dark green, from an inch to an inch and a half in length. Cones from four to six inches long, brown, very even, and covered with a glaucous bloom. Seeds small. Nothing more is known of this plant, which is only described in Dr. Wallich’s work above quoted.

SEC. II. Leaves growing singly round the branches, and all spreading equally.—By Larix.

No. 1. Abies excelsa, the Norway Spruce Fir (De Cand. Fl. Pranc., 3:275; Pinus abies, Linn. sp. pl. 1421). Leaves scattered, somewhat four-cornered, mucronate. Cones cylindrical, pendulous, with blunt, wavy, slightly-toothed scales.—Native of the mountainous parts of the north of Europe, where it sometimes constitutes, as in Norway, the principal timber. It is found all over Siberia as high as 70° N. lat.; in that region it is considered by the wandering tribes a certain sign of the presence of springs of fresh water, for it is only seen in moist and springy places; a property transferred to Abies picea by the late Sir James Smith, who has most strangely misapplied the statement of the Russian botanist Gmelin. When growing singly in rich soil, separate from other trees, this forms one of the most beautiful objects that can be imagined, with its long, drooping branches touching the very ground, and its regularly pyramidal figure: but in other situations, in plantations where the trees are crowded and deprived of their lower branches by want of light and air, it becomes, after nine or ten years, an inedible plant of little value except to be cut for poles. When in perfection, and occasionally it arrives at its greatest perfection in this country, it acquires a stature of 150 feet; its wood is of a white colour, of a fine even grain, and very durable: in the market it is known under the name of white or Christiania deal. In Norway it arrives at maturity in seventy or eighty years. Trees of such an age are what are usually cut down for exportation, and each yields on an average three pieces of timber, eleven or twelve feet long. The spruce is readily known by its leaves of one uniform dull green colour, spread equally round the branches, and by its long pendant cones.

No. 2. Abies orientalis, the Oriental Fir (Pinus orientalis, Linn. sp. pl. 1421; Lambert, t. 39). Leaves very short, uniformly imbricated, quadrangular, with a callous point. Cones ovate, cylindrical, pendulous, their scales somewhat rhinodes. To botanists this is known chiefly by a figure published by Mr. Lambert after a drawing by Aubriet, the celebrated draughtsman, who accompanied Tournesfort in his journey to the Levant. It was found by that traveller in the mountains southeast of Trebisond, above the convent of St. John. It has been subsequently met with by Russian botanists in the woods of Mingrelia, and near Tiflis by Sir Gore Ouseley; but little has been added to our knowledge of the species. The young branches are said to be hairy. The leaves are very short and dense. The cones are small and pendulous, of an ovate, tapering figure.

No. 3. Abies alba, the White Spruce Fir (Michaux, Hist., vol. i. p. 136, t. 12; Pinus alba, Lambert, t. 36). Leaves rather glaucous, spreading equally round the branches four-cornered, somewhat pungent. Cones narrow, oval, tapering towards the point, with even, undivided scales. Found along with Abies nigra in the colder regions of North America; according to Michaux it does not advance so far to the north-
ward as that species, from which it is known not only by its smaller size, the trunks rarely exceeding forty or fifty feet in height, but also by the bluish cast which characterizes the foliage, and which gives it a much lighter appearance than the sombre *Abies nigra*. Dr. Richardson, however, states that it was the most northerly tree observed in Franklin's Polar journey. The timber is of inferior quality. From the fibres of the root, aerated in water, the Canadians prepare the thread with which they sew together the birch-bark that forms their canoes. Its resin is also used to render the seams water-tight. Mr. Lambert appears to have been misinformed as to the essence of spuce being prepared from the branches of this species, which appears on the contrary from the statements of Michaux to be carefully rejected, because its leaves are thought to impart an unpleasant flavour. The bark is said to be occasionally used for tanning. Milton Abbey in Dorsetshire, and the grounds of the Earl of Tankerville at Walton, are named by Mr. Lambert as stations where fine specimens of this species may be seen.

No. 4. *Abies nigra*, the Black, or Red, Spruce Fir (Michaux, *Hist.*, vol. i. p. 125, t. 11; Pinus nigra and rubra, *Lambert Monogr.*, t. 37 and 38). Leaves spreading equally round the stem, short, four-cornered. Cones ovate-oblong, obtuse with ragged rounded scales. Native of the most inclement regions of North America, especially in swampy situations and in the valleys between ridges of low hills, where the soil is deep black and humid. In such situations are found the finest forests of this species, and there, although the trees are so crowded together as often not to be more than four or five feet apart, the timber arrives at the height of seventy or eighty feet, with a diameter of from fifteen to twenty inches. The first in the landscapes of northern scenery illustrating Captain Franklin's Polar Expedition are of this species, which, however, Dr. Richardson did not observe higher than 65° N. lat. The trunk is remarkable for the perfect regularity with which it diminishes from the base upwards. The head is of a regularly pyramidal figure, the branches spreading almost horizontally, and not inclining towards the earth, as in the Norway spruce. The timber is of great value on account of its strength, lightness, and elasticity. It is employed for the yards of ships; and in America, in districts where the oak is scarce, also for their houses; floors are occasionally laid with it, but it is not well adapted for this usage, as the planks are apt to split. From its young branches is extracted the essence of spuce, so well known as a useful antiseptic in long voyages; and not from those of the Abies alba, according to Michaux. By some it has been thought that North America produces a red as well as a black spruce, the former being of better quality than the latter; but the researches of Michaux show that what differences exist are due exclusively to the influence of soil, and have no dependence upon specific peculiarities.

According to Mr. Lambert, the curious dwarf spruce, called *Pinus clasbiana*, is probably a variety of *Abies nigra*.

No. 5. *Abies Douglasii*, the Douglas Fir (*Pinus taxifolia, var. douglasii*), is probably a variety of *Abies nigra*.

Leaves spreading equally, deep green, whitish beneath, obdose. Cones cernuate, ovate-oblong, with rather uneven cartilaginous scales, much shorter than the branches, which are three-toothed, the lateral teeth being membranous, with the intermediate ones much longer and more rigid. According to Mr. Douglas, the discoverer of this gigantic species, it is found in the Northern forests of the Pacific coast of America, from 43 to 52° N. lat. The trunks vary from two to ten feet in diameter, and from 100 to 150 feet in height. Occasionally it arrives at still greater dimensions; there still exists, near Fort George, on the Columbia River, a stand which elicits the bark, and at three feet from the ground, measures forty eight feet in circumference. An evergreen tree, with an erect, taper trunk, when old is covered with a rough, ragged bark from six to nine inches thick, abundant in a chlorophyll, and with a yellowish-green tint, which has been observed in the balm of Gilead. The timber is heavy, firm, of as deep a colour as yew, with few very knots, and not in the least liable to warp. We have a plank now before us, which, after standing some years in a hot room, is as straight, and its grain as compact, as the first day it was planed. The growth is exceedingly rapid; we have seen a branch three inches in diameter which was not more than eight years old. The aspect of the young branches is so deep a green that they seem as if they were more nearly of the nature of a yew than of a spruce. In the autumn their buds are very prominent and bright brown. The cones are remarkable for the long tridentate bracteae which stick out far beyond the cones themselves.

A considerable number of plants of this important species are now scattered among the parks and woods of this country, some hundreds having been raised and distributed by the Horticultural Society of Philadelphia, and are both perfectly adapted for the purposes of the garden. They are the most suitable for the larch bed, and, being less tolerant of shade than the larch itself, are evergreen, and fully as hardy.

No. 6. *Abies Menziesii*, the Menzies Firs (**Pinus Menziesii, Douglasii, *Lambert*). Leaves very short, rigid, rather incurved, white beneath, spreading regularly round the stem, very deciduous. Cones oblong, composed of very lax, ragged retuse, ovate, thin scales, much longer than the narrow, serrated, concealed bracteae. Buds ovate, acute, covered with a sheath of abraded leaves, of the species of *Picea californica*, in which it was found by Mr. Douglas, who describes the wood as being of excellent quality. The cones, which are about three inches long, are extremely different from those of any other species. The branches, deprived of their leaves, are covered with thin, hard, projecting bases, which give them a singularly tuberculated appearance.

**Sect. III.** Leaves growing in clusters; deciduous. —

**Larches.**

By some botanists this section is considered essentially different from the others; but the want of any clear, distinctive characters, either in the mode of growth or the organs of fruitulation, induces us to concur with Linnaeus, Jussieu, and Richard, in considering the larch the same genus as the spruce. The leaves of the former are clustered or fasciculated, merely in consequence of the universal nature of the development of lateral branches; so that the leaves themselves make their appearance without a perceptible central axis. This is proved not only in the cedar of Lebanon, but even in the larch itself, by numerous cases where the branches being less abortive than usual, lengthen enough to display their real nature.

No. 1. *Abies Larix*, the Common Larch Fir (*Rich. Monogr.* Conf. 164, t. 13; *Pinus Larix, Linn. Syn. pl. 1427; Linn. Eur. Pop. Fl. P. et F. 127, Europea, De Cand. Fl. Franc. 327, Leclercq. Fl. Occidentalis, Bentham & Hooker, vol. ii. p. 37, America, and Siberia. In the latter country it is the commonest of all trees, delighting in dry, elevated situations; it forms vast forests, sparingly intermixed with pines. Its trunk grows very erect, with graceful drooping branches, gradually diminishing from the base to the apex, and giving it a regularly pyramidal form. In the spring, when its young leaves first burst into life, it has a peculiar yellowish-green tint, which is possessed by no other tree of our forests. The larch has been now, for many years, extensively cultivated upon barren, exposed land, both in England and Scotland, and it has been found one of the most profitable of all trees, to the planters who provided the land be well drained; but it will not succeed in swampy situations. It grows with great rapidity, is subject to very few accidents, transplants with but little risk, and produces timber of great
Abies abundance instances the It a far both frequently found A Digitized was on in the Society crimson growth, purposes. subject afterwards banters destroyed, form Greeks. the which have been some Greece, appears, Brian^on some time all since the inner and the small trees, Archangel is, huge Archangel Tyrol. is a native objects of its being indestructible: instances have been named of its having been taken from buildings uninjured

(The Larch.)

of the sea, he has felled trees, eighty years old, that have each yielded six loads of the finest timber. Three varieties are mentioned by botanical writers; of these the first is remarkable for the young cones being pale green instead of crimson; the second has a weeping habit: both these are natives of the Tyrol. The third sort is of a slow, stunted growth, and an inelegant appearance, leafing early, and very subject to injury from spring frosts; it was raised by the Duke of Athol from Archangel seeds.

From the boiled inner bark, mixed with rye-flour, and afterwards buried for a few hours in the snow, the hardly Siberian hunters prepare a sort of leaven, with which they supply the place of common leaven when the latter is destroyed, as it frequently is, by the intense cold to which hunters are exposed in the pursuit of game.

The bark of the larch is nearly as valuable to the tanner as oak-bark; it also produces the substance called Venice turpentine, which flows in abundance when the lower part of the trunk of old trees is wounded. A sort of manna, called Briançon manna, is exuded from its leaves in the form of a white flocculent substance, which finally becomes concreted into small lumps.

It is believed that this species was the ɐríus of the ancient Greeks. The origin of the more modern word lärz is uncertain. By some it is derived from the Celtic lär, fat, in allusion to its unctuous, inflammable resin; by others from the Welsh lâr, wide-spreading: it is, however, more likely to have been in some way connected with the word l'arís, which appears, from a very curious paper by Mr. Drummmond Hay, read some time since to the Horticultural Society, to be the Berber name of a large coniferous tree found in Rif, or Er rif, and in all the higher sierras of Marocco.

No. 2. Abies microcarpa, the Red Larch Fir (Pinus microcarpa, Lambert, t. 50). Leaves clustered, deciduous. Cones oblong, small; their scales erect, close-pressed, the upper ones much smaller than the lower.—A graceful tree, with much of the habit of the common larch, from which its very small cones, of a bright purple in the summer, readily distinguish it.—A native of North America. This is by no means so well adapted to the planters' purposes as the common larch, growing very much smaller. According to the Duke of Athol, who cultivated this in his larch-plantations in Scotland, trees, when fifty years old, do not contain one-third as many cubic feet as the common larch. The wood is so heavy that it will scarcely swim in water.

No. 3. Abies pendula, the Black Larch Fir (Pinus pendula, Lamburt, t. 49). Leaves clustered, deciduous. Cones oblong, with numerous spreading scales, which gradually diminish from the base to the apex of the cones. Branches weak and drooping.—A native of North America, where it is found growing in a rich clay soil, mixed with sand, in cold mountainous districts. When cultivated in this country it is an elegant tree, having a good deal of resemblance to the common larch, but being of a brighter green colour, and much more graceful. The leading shoot will often begin to droop at the height of fifteen or twenty feet from the ground, and, after gradually acquiring a horizontal direction, will bend towards the earth so as to form a natural arch of great beauty. The wood is less valuable than that of the common larch.

SECT. IV. Leaves growing in clusters; evergreen.—CEDARS.

No. 1. Abies Cedrus, the Cedar of Lebanon Fir (Pinus Cedrus, Linnaeus, Lamburt, t. 51). Leaves clustered, evergreen. Cones oblong, very obtuse, erect, with broad closely-packed scales, which are a little thickened at the margin.—Mount Lebanon and the range of Taurus are the native spots of this most stately and magnificent tree, which compensates for its want of height by its huge wide-spreading arms, each of which is almost a tree in itself. According to Labillardière, a French traveller in Syria, the largest of those now remaining on Lebanon is 101 feet in height, and 6 feet in diameter; the trees are held in great veneration, and a holiday is set apart for the feast of cedars. Its growth is far from being so slow as some imagine; on the contrary, the observations of those who have cultivated it with care prove that it will vie in rapidity of growth with almost any forest tree. It appears from Mr. Lysons' inquiries that there is a tree at Highcliffe, the seat of the Earl of Caernarvon, which, when fifty-eight years old, measured ten feet one inch in circumference at three feet from the ground. Cedar wood has the reputation of being indestructible: instances have been named of its having been taken from buildings uninjured after a lapse of two thousand years. Mr. Lambert, however, remarks, with justice, that 'in relation to these properties, there is much vulgar error and confusion, the cedar of Lebanon being often confounded with trees of different genera.' Mr. Lambert conjectures that the Cedrus of the Scriptures was the əţrənus 风景区 ; Sprengel refers it to the Juniperus oxycedrus; but it appears highly probable, from some interesting observations made at Tangier by Mr. Drummond Hay, that the indestructible cedar wood was the beautiful, hard, deep-brown timber of Thuja artécula, the Sundance tree (see Thuja). The wood of Abies cedrus produces deal of very indifferent quality.

(The Cedar of Lebanon.)

No. 5. [THE PENNY CYCLOPÆDIA.] VOL I.
6. Abies, in Botany, a name given by Abbele Brongniart to a single incompressible specimen of a fruit resembling that of some spruce fir, but of which not even the identity is known. It is called Abies l rocket.

ABINETE E. in Botan. (Richard, Monogr. Conif. 145), a species of Abies, described by Richard, by which he means Abies, Pinus, and the genera that have in modern days been struck off from these two. For its botanical characters see Conifer.

ABINGDON, one of the principal towns in Berkshire, and a place of great antiquity. Some have carried back its origin to the time of the Britons. It received its name of Abban dun, or Abben town, the name of the abbey, from the removal hither of a monastery previously fixed at Bagley.
Wood in the neighbourhood. It was a place of considerable importance in the period of the Saxon Heptarchy; and Ofa, King of Mercia, had a palace here. The abbey, which was founded in the twelfth century, flourished under the favor of successive princes; and its revenues, and the dissolution of religious houses, amounted to nearly 2000l. per annum. Henry I. was educated in it. The town is pleasantly situated at the junction of the Ock and the Thames, just above where the Wilts and Berks canal joins the Thames, and, within forty miles of Oxford, a market-town, and are well paved and lighted; the supply of water is also good. The market-house is an elegant structure of freestone, and in it is a spacious hall for transactions. In the July and October sessions and the summer assizes are held here. Abingdon returns one member to Parliament. It has a separate jurisdiction, having obtained a charter of incorporation in the reign of Philip and Mary, A.D. 1557.

There are two handsome churches, those of St. Helen and St. Nicholas; and meeting-houses for the Baptists, Independents, Quakers, and Wesleyan Methodists. There is a free grammar-school well endowed, a national and a British school, and some other foundations for the purposes of education. There are also many small schools which have obvious mischiefs. In a town of thirty-two poor women are supported. The trade of Abingdon consists of malting, hemp-dressing, and sack and sail cloth making; in the latter branch of manufacture they are fast declining since the cloth trade was made large. Capacious wharfs and warehouses have been erected at the entry of the Wilts and Berks canal into the Thames. The population of the town was, in 1831, 1879. It is 26 miles N.W. by N. of Reading, and 56 W.N.W. of London.

ABIPONIANS, an aboriginal tribe of South America, who formerly occupied part of the province of Chaco, a country about 360 leagues long and 100 broad, lying about the river of Paraguay, near the parallel of 29° south. The Moquis, a nation of South America, was abjuration for taking the oaths of the Chaco; he describes them as a well-made, tall, handsome race of men, with faces of the European form, and a complexion rather light coloured. Their bodies are robust, capable of enduring fatigue and all the changes of temperature. According to the Jesuit missionary Dobrizhoffer, our chief authority, they are the most wonderful people in the world. An Abiponian, almost a hundred years old, will keep on his horse as nimble as a boy, and sit there for hours. His teeth and sight are unimpaired at this advanced age: a man who dies at eighty is considered to have come to an untimely end. However, the good missionary remarks that all the inhabitants of Paraguay are not quite so wonderful. Many of their advantages of physiognomy are long lived than the equestrian. One curious feature in the character of the Abiponians is their skill in horsemanship. The horse, as is well known, was introduced into South America by the Spaniards, and from them the Abiponians stole them. They soon became an expert in the management of this animal, that, issuing from their distant retreats, they crossed dry deserts, or extensive swamps, with equal ease and daring, and, after a journey of surprising rapidity, would bring the horse to rest, and all their provisions and arms all before them. [See Martin Dobrizhoffer's 'Abiponians,' London translation, 1822; Latin original, Vizaca, 1784; also in German, 3 vols. 1802.]

Dobrizhoffer went to South America in 1749, and stayed there almost twenty years. He was an Abiponian, and was able to speak and write Spanish, Portuguese, and many other languages. He was a Jesuit missionary, and had many adventures, and his accounts are extremely minute, and even tedious; and though it is no doubt contains many curious and interesting facts, it is not possible to read it without a considerable portion of scepticism; indeed, we do not hesitate to say, that we disbelieve altogether many of the accounts which the good missionary gives: we need only refer to men one hundred years old jumping on horses. Compare Azara's short notice (vol. ii. p. 183) of the Abiponians of Las Garzas.

ABJURATION (of the Realm), in law, signifies a sworn renunciation, or the making an oath of allegiance to the crown; an oath by which a person is outlawed from the realm for ever. By the ancient common law of England, if a person guilty of any felony, excepting sacrilege, fled to a parish church, or churchyard, for sanctuary, he was entitled to the protection of the clergy until a day before the coroner, confess the full particulars of his guilt, and take an oath to abjure the kingdom for ever, and not to return without the king's licence. Upon making his confession and taking this oath, he became amicus fictus and fled the felony; he had forty days from the time of his appearance before the coroner to prepare for his departure, and the coroner assigned him such port as he chose for his embarkation, to which he was bound to repair immediately with a cross in his hand, and to embark with all convenient speed. If he did not go immediately out of the kingdom, or if he afterwards returned into England without licence, he was condemned to be hanged, unless he happened to be a clerk, in which case he was allowed the benefit of clergy. This practice, and the abjuration for taking the oaths of the realm, was entirely abolished. In the reign of Queen Elizabeth, however, for some time after, the same extraordinary regulations against Roman Catholics and Protestant Dissenters convicted of having refused to attend the divine service of the Church of England, they were by statute (35 Eliz. c. 1) required to abjure the realm in open court, and if they refused to swear, or returned into England without licence after their departure, they were to be adjudged felons, and to suffer death without benefit of clergy. So that the punishment of abjuration inflicted by this Act of Parliament was far more severe than the common law; in the latter case, the felon had the benefit of clergy; in the former, it was expressly taken away. Protestant Dissenters are expressly exempted from this severe enactment by the Toleration Act; but Popish subjects are liable to be called upon to abjure the realm for their recusancy until a statute passed in the 31 Geo. III. (1791), relieved them from that and many other penal restrictions upon their taking the Outlaw of Albigence and Abjuration.

ABJURATION (Oath of). This is an oath asserting the title of the present royal family to the crown of England. It is imposed by 13 Will. III. c. 6; 1 Geo. I. c. 13; and 6 Geo. III. c. 53. By this oath the juror recognises the right of the king under the Act of Settlement, engages to support him to the utmost of his power, and in case of his death, or incapacity, to disclose all traitorous conspiracies against him, and expressly disclaims any right to the crown of England by the descendants of the Pretender.

ABLANCOURT (PERROT NICOLAS D'), one of the most esteemed translators of the classic authors, in the seventh century, was born at Châlons sur Marne, in Champagne, now in the department of the Marne, in 1606, and died of the stone at Ablandon in November, 1664; but not of voluntary starvation, as account of the pains of his disorder, as is said in the Memoirs. His family was honourable, and greatly esteemed at the bar. His father bestowed the most anxious care on his education, with the view of uniting the professions of lawyer and private education. He was so far successful, for his son advanced most rapidly in his classical studies. Ablandon commenced his career at the bar, but quitted it almost immediately for literary pursuits; and at the same time abandoned the Protestant creed, in which he had been brought up, to the great delight of the Catholic members of his family. He returned, however, to his first belief; for six years afterwards, his conscience not being quite at rest, he studied with the deepest attention under the hand of Stuart for three years, and, after four years' labour, repaired the Roman faith, and immediately after retired into Holland, to be near the learned Saumaise, and enjoy the society of that famous scholar; perhaps, also, to let the scandal of his second abjuration die away. It is only fair to say that he was not a man of extraordinary worldly consideration whatever. From Holland he repaired to England, and from thence to Paris, where he became intimately acquainted with Patru, one of the most celebrated writers and distinguished lawyers of that day, and also with
other eminent literary characters. In 1637, (the biographer Unin says, by mistake, 1627, the Académie Française having been established only in 1634-35,) he was received a mem-
er of the French Academy, and gave his whole attention to the trans-
lation of the works of Tacitus; but being soon obliged to
return to England in consequence of the death of the
king, where he lived near seven years. He next set out to
reside at his seat at Abicanscourt, in Champagne, for the
remnants of his life, with the exception of the time he spent
in Paris during the printing of his works. Abicanscourt had so
lively an imagination, that his friends wondered at his being
only 5 years old; yet his reasons were so good, according
to his own account, that there were already too many modern
works deficient in truth and novelty, in which princes could
not learn their duties as well as in the ancient writers.
D’Abicanscourt might say quoted Macrobius, and several others
as exceptions to that remark. Of his numerous translations
those most known are, the whole of Tacitus, of which there
are been ten editions; four orations of Cicero; Caesar; and
the Wars of Alexander by Arrian, the most esteemed of his
translations as regards the style only; Thucydides; the
Anabasis of Xenophon; and an imitation, rather than a
translation, of Lucian. As to the accuracy of the trans-
lations of Abicanscourt, when compared with those of the last century,
and still more with those of the present, they are decidedly
inferior; but as the man was young, and had no advantage,
he is, however, to be considered an accomplished scholar.
His life was, however, as is generally allowed, directed
towards the opinion of his friends and the public at large, they
were denominated belles infidèles. They were intended for
students, and were in a fair style; but it was their nature,
not to domesticate; and that which he designed for them
got lost in the execution. He died at Paris in 1654, when he
was only 36 years old. The last essay he wrote was on
the termination of, or from, was treated in the
same unceremonious manner, for we find ex regis, out of the
king; ab regis, from the king; de regis, down from the king;
where we might have expected ex regis, or regis, de reges. But,
as we said above, ex, ab, and de, being more pre-
fered in modern languages, many incorporated, or
invented, new terms, or translated entire expressions, as
if the pronunciation of the former rendered that of is superfluous,
and consequently the little is dropped into a weak e, as
before. Now this termination e, affixed to the Latin nouns,
were received from the grammarians the name of ablative,
for, i.e. the case of the preposition ab. The termination, well enough
ex regis, out of the king; ab regis, from the king, &c.;
but is not well suited to the ideas, cum regis, with the king;
in regis, in the king, &c. But the grammarians who
instituted this termination, and several others like it,
asked before them. For fear, lastly, that any of
the learned should find fault with our Latin, we will observe
that even the little e which marks the ablative case, which
itself is but a remnant of a longer termination, was often
absorbed by a preceding vowel in the Latin word to which
it was attached. Thus, to take regina, a queen, they did not
say in regina, cum regina, ex regina, &c., but in regina,
cum regina, ex regina, &c. When the term ‘ablative case’
is used in English grammar, it is only an awkward name for
the present commonly used preposition of, or to
the."
langed to Sweden, and it then was the chief city of all Fin-
land. It stands on the Aurajoki river, and is surrounded by
tills and mountains. In its neighbourhood is a mineral
spring. The number of inhabitants is 12,550. The manu-
factures of Abo are tobacco, sugar, sail-cloth; and it trades
in provisions and dairy produce. There are also dockyards here.
The fort of Aholius protects the entrance of the river, which
does not admit vessels of large size to go up as far as the
town. In the year 1827, seven hundred and eighty houses
were destroyed by fire, together with the University build-
ings and the library, and many valuable books.

Since this accident, the University has been removed to Helsing-
fors. (See Helsingfors.) Gustavus Adolphus, in the
year 1628, founded this University, or rather instituted an
Academy, which Christins, in 1640, elevated to the rank of a
University. Alexander I. of Russia added to the endow-
ments. (Carnach's Geography, German.)

Many of the treaties between the great European powers are
distinguished by the names of the places at which they
were concluded. Thus, the Peace of Abo is often referred
to in history, as the treaty by which the relations of Sweden
and Russia were determined during the latter part of the
last century.

A congress was opened at Abo in March, 1743, by the
plenipotentiaries of Sweden and Russia, to confer on condi-
tions of peace between those powers. The war, which it was
the object of this conference to put an end to, had been com-
 menced in 1741 by Sweden, who, still smarting from the
encroachments she had been compelled to make to Peter the
Great of Russia, determined, by the Treaty of Nyasjard in 1721, to
again engage the Turks in a war between Russia and Turkey to conclude an alliance with the
latter power against Russia. The war was most disas-
trous to Sweden: the hopes she had conceived of assistance from Turkey were frustrated by the peace of Belgrade be-
tween Russia and the Porte, her best soldiers were defeated,
and her armies in Finland destroyed in the first campaign.

The revolution in Russia, by which Ivan was dethroned,
and the daughter of Peter set upon the throne, occasioned a
suspension of arms, but in 1743 hostilities began again.

Sweden was again defeated, and all Finland abandoned to
the Russian arms.

The Swedish Diet met, and deliberated on offering the
succeesion of the throne of Sweden to the Prince Royal of
Dalmatia. Russia, fearing the union of the crowns, offered
peace, and restitution of her conquests, on condition of the
Diet's choosing Adolphus Frederic of Holstein Gottorp as
the successor of the reigning king, Frederick, who was
civilized. The condition was accepted, and the election took
place on the 4th of July, 1743.

By the stipulations of the treaty, which was signed on the
18th of August, n.s., Sweden renewed her cession of Ingria,
Livonia, and Esthonia, which had been given up by the
Diet of Nyasjard, and was also compelled to yield the
eastern portion of Finland, making the river Kymmenne the
boundary of the two nations. Russia restored the rest of
the Grand Duchy, which she had gained in the war, in-
cluding Abo, Bornborg, and Bass Bohmia. It may be
necessary to mention that the whole of Finland was ceded to
Russia by a peace concluded between the two powers,
on the 17th of September, 1809.

ABOMA, a large species of serpent, which inhabits the
temis and meresises of South America. (See Boa.)

ABORIGINES, a term by which we denote the primi-
tive inhabitants of a country. Thus, to take one of the
most striking instances, when the continent and islands of
America were discovered, they were found to be inhabited by
tribes of people, whose immigration into those regions we have no historical accounts.

All the tribes, then, of North America may, for the present, be considered as
aborigines. We can, indeed, since the discovery of America, trace the movement of various tribes from one part of the continent to another; and, in this point of view,
when we compare the tribes one with another, we cannot
call a tribe which has changed its place of abode, aboriginal,
with reference to the new country which it has occupied.

The aboriginal tribes of North America are, that the natives on the east
side of the Mississippi to the west of that river are not abor-
origines in their new territories. But the whole mass of
American Indians must, for the present, be considered as
aborigines with respect to the rest of the world. The
English, French, Germans, &c., who have settled in Ame-
rica, are, of course, not aborigines with reference to that
continent, but settlers, or colonists.

If there is no reason to suppose that we can discover traces of any people who inhabited England prior to and
different from those whom Julius Caesar found here,
then the Britons of Caesar's time are the aborigines of this
island.

The term aborigines first occurs in the Greek
writers who treated of the earlier periods of Roman history,
and, though interpreted by Dionysius of Halicarnassus to
mean ancestors, it is more probable that it corresponds to
the Greek word autochthonos. This latter designation, in-
deed, expresses the most remote possible origin of a nation,
for it signifies 'people coeval with the land which they in-
habit.' The word aborigines, though perhaps not derived,
as some suppose, from the Latin words ab and origo, still
has the appearance of being a general term analogous to
autochthonos, and not the name of any people really known
to history. The aborigines of the ancient legends, inter-
 woven with the history of Rome, were the inhabitants of
part of the country south of the Tiber, called by the Romans
Latium, and now the Maremma of the Campagna di Roma;
but we are, in truth, unable to say to what people this term
may be properly applied. [See Niebuhr's Roman History.]

ABOU-BANNEs (Namemius Ibis, Cuvier; Tan-talus
Ethiopicus, Latham), an African bird, which has occasioned
much discussion among the learned as to its identity with
the ancient Ibis. The attention of Bruce was attracted,
during his stay in Upper Egypt, by some birds called by
the natives Abou-Hannes, whose forms reminded him of
this Ibis, as represented in Egyptian monuments, and re-
peated observation confirmed him in the opinion of their
identity with the ibis of the ancients. This identity
was subsequently corroborated by the distinguished naturalists,
expanded, and roundish at the point, could neither divide nor pierce serpents; and indicates rather an aptitude to dabble in marshy and moist grounds.

On the other hand, Baron Cuvier found, in the museum of the ibis, remains of the skin and scales of serpents, and hence it has been inferred that the birds might have been serpent-eaters (Ophiophagous). This inference, however, is at variance with the observations made in Egypt by M. Strabo, who found a great number of individuals, in the crops of which he uniformly found land and fresh-water shells (Cyclostomata, Amphitauria, Plumeber, &c.), and these shells were always entire when their inhabitants had not been previously digested.

It does not appear that the ibis breeds in Egypt; but, on the testimony of the inhabitants, it arrives as soon as the waters of the Nile begin to rise, augmenting in numbers as the waters increase, and diminishing as they subside, and disappears when the inundation terminates. These birds, on their arrival, repair to the low lands, which are first covered with water; but when the waters become deeper and spread wider, the birds betake themselves to the higher lands. They afterwards approach the river, where they establish themselves by the sides of the canals and on the small dikes, with which the greater part of the cultivated grounds are surrounded.

The bird in question sometimes lives solitary, sometimes in small troops of from eight to ten. Its flight is lofty and powerful, and it uttereth in articulate cries. When alights on a fresh piece of land, it remains for hours together occupied in tapping the mud with its bill, in search of worms, &c. It walks leisurely by step, and has been observed to run, like our curlew (Numenius coquus, Latham), to which it otherwise bears some resemblance.

The Egyptians call the bird Abou-menzel, which literally means 'Father sickle-bill'; the bill being curved like a sickle. The Egyptian name, Abou-Hannes, means 'Father-John'; because, as M. Dumont supposes, the birds arrive about St. John's day.

The following is the earliest account that we have of the ibis, from an eye-witness (Herodotus i. 76):—'The ibis is all over very black; it has the legs of a crane, and a beak consisting of two flat plates. Its size is also considerable, and the appearance of the black ibis, which fights against the serpents. But the other ibis, which is more of a domestic bird (for there are two kinds), has the head and all the neck bore of feathers; it is of a white colour, except the head, neck, and extremities of the wings and tail, all which parts are very black. As to its legs and beak, it resembles the other kind of ibis.' The black ibis, according to Herodotus, decoursed the winged serpents which yearly attempted to destroy Egypt from the east. (Arab. of a cret. It is needless to add that these winged serpents are a fable. Strabo, who himself was some time in Egypt, gives the following account:—'The ibis is the tamest bird of all: in form and size it is like the stork. But there are two varieties of color, one of which is that of the stork, and the other is all black. Every street in Alexandria is filled with them, partly to the benefit of the citizens, and partly not. The bird is useful so far as it devours all kinds of vermin, with the garbage of the shamels, and the refuse of the eating-houses, &c.' Here Strabo makes no distinction between the two, except in colour, and he describes both species as living on all kinds of garbage. We believe, however, he has confounded the real ibis and the stork, as Hasssquint, a German traveller, confounded the real ibis and the heron. [See Ins.]

ABOU-HARB, in Arabic, the name of the Leucoryx antilope, a species of the antelope-family, and found in those districts of Nubia which are between the 20th and 11th degrees of latitude. This species of antelope is of a larger size than the common species, and is peculiar to Nubia and Abyssinia.

ABOUKIR. The castle of Aboukir is on the N. lat. 31° 19', E. long. 22° 58'. The town of Aboukir (N., the town of Alexandria) is on the extreme north-eastern point of the low barrier of limestone rocks that form the breakwater of the coast of Alexandria. It marks, in fact, the extreme eastern limit, along the northern coast, of the rocks of the Abuqir, a name that is now understood by the locals to mean the Canopic mouth and the alluvium of the Delta. It is not unlikely that Aboukir castle is near the site of an ancient city, but whether this city was Canopus or not, we think it is impossible to decide, as the coast has undergone very great changes. Canopus, however, could not be more than a few miles distant from Aboukir, probably on the east side.

The small island which lies near Aboukir point contains traces of old buildings, and also evident marks of having once been larger than it is at present. This little spot is now commonly called Nelson's island, in commemoration of the victory which the English admiral obtained over the French fleet, under Brueys, in Aboukir bay, August 1, 1798. (See Nisus.) Aboukir bay may be considered as bounds by Aboukir point on the south-west, and by the neck of land at the outlet of the Rosetta arm on the northeas.
antiquity than the sculptures of the outside, and the painted bas-reliefs of the interior.

The width of the front of this temple is about 90 feet; the depth measured from the centre of the door-way to the extremity of the adytem is 76 feet. From the door a passage leads to a room 35 feet by 34, supported by six square pillars, three on each side, with Isis-headed capitals, similar to those of Denderah. From this apartment we pass into a narrow kind of vestibule, the direction of whose length is at right-angles to the axis of the excavation; and thence into the adytem or recess, which contains the remains of a sitting statue cut in the rock. There are two other small chambers besides those enumerated, one at each end of the vestibule just alluded to. The interior of this excavation is richly adorned with painted bas-reliefs, representing offerings of palm-branches and the lotus to Osiris, with other subjects usually found in the Egyptian sculptures. The figures are painted yellow with black hair; the head-dress of Isis is painted in black and white stripes; the ceiling is blue, which is a favourite colour for ceilings in the ancient buildings of Egypt.

But this excavation, magnificent as it is, sinks into insignificance when compared with another rock-cut temple, which is found a few hundred feet distant in the opposite side of the valley. The front of this temple was almost covered with sand, except the head and shoulders of one of the four colossal which decorate the façade, and the frieze and head of an enormous hawk. Belzoni, in the year 1817, with the assistance of Captns lby and Mangels, and the aid of the miserable natives, succeeded in finding the entrance; but he had to remove 31 feet of sand before he came to the top of the door.

This excavation is about 100 feet above the level of the river, and faces south-east by east. The width of the front is 117 feet (127 according to Colonel Stratton), and 86 high: the height from the top of the door to the top of the cornice is 66 feet 6 inches; the height of the door is 20 feet. There are four enormous sitting colossal in front, which are the largest in all Egypt or Nubia.

[One of the Coloss of Abousambul.]

The following are some of the dimensions of this enormous temple:

Monsters are in sight; a third is buried in the sand, and the fourth has partly fallen down from the rock to which he was attached by the back, and is also covered. From some traces of colour on these figures, it seems probable that they were once painted, according to the Egyptian fashion. Over the door are four figures in relief of Osiris, 20 feet high, in a niche, and with a colossal figure, one looking towards it. The highest part of the façade is formed by a cornice, ornamented with hieroglyphics, and a moulding and frieze below it. Above the cornice is a row of twenty-two monkeys seated, about 8 feet high, and 6 across the shoulders.

The depth of the temple is about 170 feet. It contains in all fourteen apartments; but its several arrangements may be best understood, in the absence of a plan, by considering it as containing four principal chambers, one after another, with a number of attached apartments. To form anything like an adequate notion of this enormous excavation, it is necessary to consult the special descriptions to which we refer at the end of this article; but the following description of the Pronaos, or first great chamber, may serve to give some idea of the colossal dimensions of the whole. The first chamber is 57 feet long, and 52 wide, and is supported by two rows of square pillars, four in each row; each of the pillars is 12 feet square, and 20 feet high. These figures are described as bold in their execution, and as producing an agreeable effect. Their arms are crossed on the breast; in one hand they bear the key of the Nile, and in the other the scourge. These statues are entirely covered with a kind of scum, which is easily peeled from them, and sometimes the heads and other parts are decayed and fallen away.

The painted walls, which represent a hero of colossal size gaining a victory over his enemies, triumphing, &c., are well worth a careful study, not only as works of art which possess merit in their way, but from the resemblance, in many respects, of the events here depicted to the battles and scenes represented on the walls of Thebes. They appear to be the records of great achievements, such as tradition assigns to Sesostris, who is now generally considered to be identical with Ramesses the Great. The name and title of the latter monarch are found in many parts of the temple; and if he was not the original excavator, he may, perhaps, be considered, at least, as the completer of this great design.

In the adytem, or last chamber of the four above-mentioned, which is 243 feet long, and 12 wide, there are colossal painted figures seated at the extremity: in the centre of this room is a pedestal. Hereon conjectures that a sarcophagus once stood on this pedestal, and that we ought to consider this huge excavation not a temple, but a tomb.

The name Abousambul is variously written at the present day, and the origin of it is somewhat obscure. It seems most probable that it contains the syllable Psam (the name of a deity), which we observe in several Egyptian names, such as Psammy and Psammophanes. [See Gais's Monuments of Egypt—Belzoni's Operations in Egypt and Nubia—Ritter's Africa—Col. Stratton, Edin. Phil. Journal—Egyptian Antiquities of this Society.]

ABOU-SCHOM, the Arabic name of a species of fox (Vulpes variegatus) [Ripp. Zool. Atl., p. 31], discovered by Rippel in Nubia and Upper Egypt. It does not burrow under ground, like the generality of foxes; but, like the jackall, resides among the rocks and deserts, and feeds upon lizards and small quadrupeds.

ABOUSHEHR, generally called BUSHIRE, is a town on the east side of the Persian gulf (N. lat. 26° 57', E. long. 50° 32'), and now the principal sea-port in these waters. It stands on the northern extremity of a sandy peninsula, which is washed by the sea on the west side, and on the north and north-east bounded by an indentation of the sea, forming a deep bay. The country all around Bushire is parched and barren, showing nothing but dry clay, bracken, sand, and low vegetation. Though the town looks pretty well from the sea, like most Persian towns the interior disappoints expectation, as the place does not contain more than half a dozen decent houses, which are built of sun-dried bricks. Under the decline of the Persian Empire, Bushire has become the great Persian emporium for the Indian trade, and its commerce is now considerable. Bullion and raw silk are the principal articles of export. Vessels of 300
ABRACADABRA

tons cannot approach nearer the town than six miles. The population is probably as much as 10,000. [See Kinmeir's Memoir on Persia.]

From Bushire to Shiraz in the interior, through which place a great part of the trade of Bushire passes, is a distance of about 152 miles following the road through Kazerun, which, in many parts, is exceedingly steep and rugged.

ABOUSIK, a place in the Egyptian Delta on the site of the ancient Busiris (N. lat. 30° 53'), near the left bank of the Danuictia branch of the Nile. Like most of the sites of ancient cities in the Delta, it has preserved its name almost unchanged, and enough still remains to show that a temple once existed here, as we know from Herodotus, though its trees are insignificant when compared with those of San, Tel Basta, and Heliopolis.

ABRAHAM (originally ABRAM), the great ancestor and founder of the Jewish nation, and the first depository of the divine promises in favor of the chosen people. He was the eldest son of Terah, the eighth in descent from Shem, the eldest son of Noah, and was born probably, at Ur, a town of Chaldea, about 2000 years before the Christian era. His history occupies about a fourth part of the book of Genesis—namely, from the 11th to the 25th chapters inclusive. Having married Sarah (originally Sarai), his sister by the father's side, he accompanied his father and his nephew Lot to Haran, where Terah died; and then, at the command of God, still taking his wife and Lot along with him, he left Haran, and proceeded towards the south, till he reached the plain of Moreh, in Canaan. The epoch of the commencement of this journey, which happened when he was seventy-five years old, is called by chronologists the Call of Abraham. Soon after, a famine forced the patriarch to make a journey into Egypt; from which country, when he had returned to the place of his abode in Canaan, he found that the increase of his own flocks, and those of his nephew, made it necessary that they should choose separate settlements; and, accordingly, by mutual consent, Lot withdrew towards the east, and established himself among the cities in the plain of Jordan, while Abraham removed to the plain of Mamre in Hebron. He had reached his ninety-ninth year, and his wife, who had been akintho barren, her eighty-ninth, when God appeared to him, and declared that there should yet spring from them a great nation: a promise which was confirmed, to the almost incredulous mother, by the birth of Isaac the following year. The severe trial of Abraham's faith, in the command given him to sacrifice this beloved son, so beautifully related in the 22nd chapter of Genesis, is familiar to every reader. Some time before this, we may remark, he had given another striking proof of his submission to the divine will, and his implicit reliance on the promises of God, in his dismissal of his son Ishmael, whom he had by Hagar, the Egyptian bondwoman, on the assurance of his heavenly father, that of him, too, would he make a nation, because he was the patriarch's seed. Although Sarah's determination, that the bondwoman and her offspring should no longer remain in the house, 'was, we are told, 'very grievous in Abraham's sight, because of his son,' he had no sooner received the above intimation from on high, than he rose up early in the morning, and took bread, and a bottle of water, and gave it unto Hagar, putting it on her shoulder, and the child, and sent her away. The Arabs declare to have sprung from Ishmael, as did the Hebrews from Isaac. After the death of Sarah, at the age of 127, Abraham married Keturah, and by her had other six sons. The venerable patriarch died at the age of 175, and was buried, by Isaac and Ishmael, in the same tomb which contained his first wife in Maane. Abraham is mentioned by the epicist Justin, who, on the authority of his original Trogus Pompeius, inaccurately says of the Jews, that they derive their origin from Danaeus, a famous city of Syria, and that their kings were Abraham and Israel.

ABRAHAM, Men. 'To shun Abraham' is a well-known cant expression, which has reference to the practices of a large class of vagabonds and cheats who were once common in this country. An Abraham Man was an impostor who personated a 'Tom of Bellam,—an unhappy being who was turned out of a lunatic hospital to subsist upon casual alms, inurable but harmless, without a home, but still maintained by public sympathy.' This class of persons was so numerous at a period when there was very insufficient provision for the cure or mitigation of the greatest of human calamities, that the charity of the kind-hearted inhabitants of the small towns and villages was largely taxed for their relief; and the appeal thus made to the feelings by a poor creature, fantastically clothed in tawdry rags, and singing snatches of old songs, was so irresistible, that it became a profitable trade to imitate such an unfortunate being. In Decker's English Villages, written more than two centuries ago, there are many curious particulars of the habits of this class of impostors: these details, in great part, agree with the rich description which Shakespear has given in his Lear (Act ii. scene 3) of a pretended fool.

'Poor Tom,' who has put on
'The latest and most poetical shape,
That ever was, in contempt of man,
Thought meet to be by women's grace upbraided.'

[See D'Irís's Curiosities of Literature, vol. iii.]

ABRANTES, a fortified town of Portugal, in the province of Estremadura, on a hill near the Tagus (N. lat. 38° 27', W. long. 8° 11'), 74 miles north-east of Lisbon. It has about 3000 inhabitants. The eminence on which the town stands is covered with olive-yards and gardens; and, indeed, the whole country along the Tagus, as far as Lisbon, is exceedingly fertile. Abrantes has several churches and convents; but its value, as a military position, constitutes its chief importance. Abrantes gave the title of Duke of to one of the sons of John the First, through the female line.

ABRUZZO, a name given to three of the fifteen divisions of the kingdom of Naples in Italy: the Abruzzo Ultra, or Further Abruzzo 1 and 2, and the Abruzzo Citera, or the Neerer Abruzzo. They are thus distinguished from their neighbours—namely, the Abruzzo Citera, and the province of the Abruzzo Ultra.

The Further Abruzzo 1 contains about 1143 English square miles, and (1825) 174,370 inhabitants, who are one of the most industrious manufacturing people in the kingdom of Naples. The capital is Teramo, on the Tordino, with 6000 inhabitants: this district contains also the considerable towns of Atri and Civitá di Penna, each of which has about 8000 inhabitants, and the fortress of Civitella, near the Roman frontier.

The Further Abruzzo 2 contains about 2220 square miles, and 259,114 inhabitants. The chief town is Aquila, on a hill on the banks of the Aterno, otherwise called the Pescara: it has a castle, manufactories of paper, stockings, leather, a lyceum, a high court of appeals, and a population of about 18,000 inhabitants. The province of the Abruzzo Citera, and the birth-place of Ovill and Celano, about four miles from the lake of the same name, belong to this province.

The Nearer Abruzzo contains about 1700 square miles, and 180,460 inhabitants, who are employed in the manufacturing industry. Chieti or Tetti, the ancient Teate, near the Pescara, is said to have about 12,000 inhabitants. The Thateine order of monks, founded in 1524, take their name from this place. The fortress of Pescara and the towns of Castellamare, Sulmona, Sulmona, and Termoli, are particularly attached to this division of the Abruzzi.—(Cannakh's Gym.)

The origin of the name Abruzzo is uncertain. Some would derive it from the Pruttuti, a nation that formerly dwelt near the eastern coast. The form in which the word appears in the oldest Italian writers is Bruzzo, the ab
The mountains of the Abruzzi, though forming an essential part of the Appenine chain, and therefore running, generally, from north-west to south-east, are extremely irregular. They send out smaller branches towards the coast of the Adriatic, forming beds for the numerous streams which run into that gulf. The highest peaks, on the other side, are the ridges, sometimes diverging from, and sometimes parallel to, each other; the valley of Aquila lies between Monte Corno and Monte Velino, and between the latter and a more easterly range of the Apennines, the Abbruini, the Abruzzi, to the west of the Lake Celano, are watered by the Liris, the Turano, and the Salto, which two last join the Velino. The real back-bone of the Apennines, by which we mean the line which divides the waters that flow eastwards from those which flow westward, is traced between the sources of the latter river and those of the Tronto, which flows into the Adriatic. Following it to the south, we find the sources of the Pescara, which also runs into the Adriatic; and we trace the main chain further south, on the east side of the basin, which contains the Lake of Celano. The direction then winds round the south part of the lake, and afterwards runs to the head-waters of the Sangro, which flows in the same direction as the other two rivers.

It then strikes into Abruzzi, and among the mountains near the province of Molise, and passing between Castel di Sangro and Isernia, joins Mounts Biferno and Matese south-east of the latter. The central Apennines, to the north and east of Lake Celano, contain the highest points in the whole range, of which the nearest seen from the Abruzzi to the north, raising its lofty head 8397 feet. Further north, Monte Corno, the highest point of the Apennines, sometimes called the great rock of Italy (il gran sasso d'Italia), rises to the height of 9521 feet, and its summit is covered with snow, sometimes thick, sometimes thin. Vegetation, however, ceases only 600 feet below its highest point. Another lofty mountain, called Monte Majella, projects out of the main ridge between the valley of the Pescara and that of the Sangro; and we may consider it the highest summit being 8500 feet. This is an extinct volcano. The mountains of Abruzzo are among the finest in the whole Appenine range. They are less naked than those farther north, and they present groups of a bolder and more romantic appearance, spreading over a vast extent of country, 50 or 60 miles in breadth, they enclose delightful valleys, towns, and a numerous population within their various ridges: the whole province of Aquila is, in fact, encircled by them. These mountains are calculate, like the great mass of the Apennines. M. Orsini, a naturalist from Ascoli, observed on the sides of Monte Corno, masses of gneiss laid bare by the waters which had carried off the crust of alpine lime, of which the external cliffs are formed. A party of botanists, proceeding to the mountains in the latter part of the last century, when they ascended Mounts Velino, Monte Majella, and other high pinnacles. M. Tenora, one of the party, published an account of their observations. They found Mount Velino rich in rare plants, and the view from its summit magnificent. They suffered much from thirst, as they met with no springs on this mountain.

The brief description of Antinori, an Italian writer, is, on the whole, correct:—"There are, in many places, rough and inaccessible mountains always covered with snow, wild forests, pleasant woods, agreeable pastures, clear fountains, deep lakes, and many rivers of every size, which run from the one, or the other side, to seek the one or the other sea of Italy." The natives of the highlands of Abruzzo are chiefly occupied in rearing flocks of sheep, whose flocks of which, after feeding on the mountain pastures during summer, migrate to the plains of Fuglia at the approach of winter. The shepherds are generally accompanied by their wives and children in these yearly migrations, using the mountains, and by their large white dogs, which are very fierce to strangers. The sheep's milk is used to make cheese, the wool is an important article of trade, and the skins are exported in great quantities to the English and Dutch, for the manufacturing of the kingdom. The labourers and farmers in the Abruzzi are mostly poor, few of the latter being proprietors; and although the feudal duties have been long since abolished, yet the land-tax is very oppressive.

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[THE PENNY CYCLOPAEDIA.]

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amounting in many instances to 20 per cent. on the estimated income of the land. Improvements in agriculture, and especially in the method of managing the land, are little known. Numerous herds of swine are fed in the extensive oak forests that cover the mountain sides; and the hams and sausages of Abruzzo are in great request. Lamb and mutton also are of excellent quality.

The woods of the Abruzzi have been sadly laid waste during the past thirty years; fine timber trees, oaks and beeches, have been wantonly cut down; and the mountains have lost much of their beauty, and are bare here, the ravage omitted amounting with no obstacle, have washed off the soil, and carried devastation into the fields below. A want of fuel has been felt in many places, which is a serious evil in the high regions that are exposed to eight months winter; but to remedy this inconvenience, the government has now provided the new plantations from taxation. The mountain fastnesses are inhabited by bears, wolves, and wild boars. These provinces are but little frequented by travellers. Sir R. C. Hoare, who visited the Lake of Ceano, says of this country:—"The province of Abruzzo, unprovided by the generality of travellers, and unknown even to the inhabitants of the neighbouring districts, like Sicily, has been represented as a country uncivilized with regard to society, industry, and agricultural improvements; mountains, solitary or inhabited, and for the residence of wild beasts than of rational beings. But I must here repeat, with gratitude, that, in these romantic, unpopulated tracts, we met with that genuine and civil hospitality which is too seldom to be found in more favoured and populous countries."

The natives of Abruzzi are generally tall, robust, and healthy; their countenances are mild, and their manner quiet and civil; they are intelligent, industrious, and terse, and furnish the best soldiers in the Neapolitan service. Their women are model; even the peasant girl, as she receives the stranger into his cabin, and offer him a share of her scanty pittance. Their cabins, however, are often miserable, smoky, and filthy; the pig and the donkey share the same family. The streets and roads are generally composed of Indian corn flour boiled in water or skimmed milk; wheaten bread is a luxury; wine, however, is drank generally, being imported from the neighbouring districts. The women work in the fields as hard as the men. Thousands of peasants leave their mountains in the autumn, to go and work in the vast farms of the Roman lowlands, and return in the beginning of summer; whilst others proceed at that period to reap the harvest in the uninhabited plains, and to brave the malaria fever, which rages with great and fatal violence in any of the towns. The shepherds may be seen in December parambulating the streets of Naples and of Rome, with their bagpipes, with which they go playing from house to house, in honour of the acmea and various festivities of that season. Others continue to live altogether at Naples, where they employ themselves as pedlars, porters, grooms, and in other hard service; and they bear a general reputation for honesty above the natives of the other provinces of the kingdom. Indeed, a traveller may almost cry among them, because of their honesty.

The lower parts of the Abruzzi have a productive soil, and export a considerable amount of grain, oil, and almonds; they also produce some cotton. In some parts of the Abruzzi we find the system of terraced husbandry, which has converted the验收s and levels of Tuscanity into productive gardens. Of the three provinces of that of Aquila is the most fertile and the poorest; the city of Aquila, however, is considered as one of the principal provincial towns in the kingdom, and contains many wealthy families. Its territory produces cotton. The province of Teramo is famous in rice and corn. That of Chieti is the most fertile of all, and its wines are much esteemed. The olive grows in both the latter provinces. The city of Chieti, the finest in all Abruzzo, is well built, in a delightful situation, ten miles from the sea, has manufactures of woofs and wools and lemons of Chieti, several literary societies, and is a place of considerable wealth and luxury. Abruzzo is, upon the whole, a very important as well as very interesting division of the Neapolitan States, of which it constitutes the chief defence on the land side. During the numerous invasions and civil wars of that kingdom, it has been often the scene of protracted contests. The city of Teramo was great, and Atole was besieged in 1799; the inhabitants strenuously opposed the French troops, and assisted in the recovery of the kingdom.

Albanian and Greek colonies are found scattered about the Abruzzi, as well as in the other eastern provinces of the kingdom of Naples. They occupy whole villages with the districts around them, and form so many distinct populations in the midst of the indigenous inhabitants, preserving the manner, the language, and national peculiarities of their respective countries.

Three roads lead into the Abruzzi from the Roman States, one, which is a post-road, on the Adriatic side, proceeds from Ascoli and Teramo, and thence to Piuma and Sulmona, where it joins the high-road to Naples. Another, less direct article of a road, issues from Rieti to Civita Ducade, and by the way of Androco to Aquila. The third, also a mountain pass, leads direct from Rome by Tivoli and Viseavo to Tagliazizzac, and the banks of the Lake of Ceano. The only carriage-road from Naples to Abruzzi is the by Vederio to the town of Molise, the ancient Samnium, thence over the central Apennines to Castel di Sangro, which is the first town in Abruzzo, and further over a high wild mountainous region to Sulmona and Popoli on the Pescara, where the road rejoins the main one to Rome, and the other to Chieti.—[Zannonis Map of the Kingdom of Naples—Dallia's Geography—Tenore, viaggio in Abruzzo, Naples, 1838—Classical Tour by Sir R. C. Hoare, 4to, 1819.]

Inflammation

The purulent matter constituting an abscess, properly so called, is always confined within a definite space: the means by which it is confined vary. Sometimes the purulent matter increases, and the substance increases the substance in proportion of that part of the blood which is called fibrin, or coagulable lymph, is diffused with it: this fibrin coagulates into a firm solid, encloses the pus, and so prevents its discharge. Sometimes the effused fibrin, or coagulable lymph, becomes undermined by the inflammatory processes in this membrane, which is called an adventitious membrane, and the pus is completely enclosed in this new membrane as in a bag, or sac or cyst: an abscess of this kind is called an enargeous abscess, and the interior surface of this cyst is always endowed with the properties both of absorption and...
of secretion; for large collections of matter, enclosed in bags of this kind, occasionally disappear without any external opening; and on the other hand, when such a bag has been completely emptied of its contents, it is sometimes rapidly refilled with pus. When an opening is formed in an abscess, and purulent matter continues to be discharged from it, it loses the name of abscess, and takes that of ulcer.

Purulent matter is poured out from the blood in other modes, and forms other collections of pus; but these are not abscissae. Sometimes, for example, the pus, as it is secreted from the blood, is diffused through the substance of the inflamed organ. This is the case especially with the lung during the progress of inflammation; and pus is sometimes formed in such a way that the pus, instead of remaining in the cavity of the organ, escapes from the substance of the organ, and the pus which was formed in the substance of the organ is termed infiltration; and, instead of containing an abscess, the organ is said to have pus infiltrated through it.

Again, collections of purulent matter are often formed in natural cavities. The cavity of the thorax, for example, is lined with a serous membrane called the Pleura, and the cavity of the abdomen with a serous membrane called the Peritonem. In consequence of the inflammation of these membranes, pus is often poured out on their surface, and accumulates around them, often accompanied by other cavities: but in this case it is merely said that pus is contained in the cavity of the thorax or in that of the abdomen; we never say that these cavities form abscesses.

There are few tissues in the body which form abscesses in any other form. They are found in the brain, the lungs, the heart, the liver, the spleen, the uterus, the ovaria, the cellular membrane, and the joints. In some of these organs the disease is highly dangerous, in others extremely dangerous; and that, in either case, it is called abscess, is due to the fact that whatever organ an abscess may have its seat, the affection will give rise to a peculiar and definite train of symptoms dependent on the peculiar structure and function of the organ affected; but the symptoms which attend the formation of abscesses, and the effect of the disease upon them, do not denote the successive stages of their progress, the different modes in which they terminate, their diagnostic or distinctive signs, and their treatment, all these topics belong properly to the subject of suppuration, and will be treated of under the title of suppuration.

**ABSCISSA.** 

**A** _or LINEA **AB**_ or abscissa, a line cut off, is a mathematical term, used as follows: If any two right lines _A B, CD_ be given, meeting in o, the position of any point, _p_, in the plane of such lines is determined by the following means: (I.) within which of the four angles, _B O C, O A, A O D, D O B_, it lies; and (II.) what is its distance from each line, or from the parallels to them, at right angles to the two lines. Either of these sides being called the _absissa_, the other is called the _ordinate_; both are called _co-ordinates_; the straight lines, _A B_ and _CD_, are called the _axes_, and _O_ is the _origin_. With the convention, therefore, that the length of the _abscissa_ and ordinates by the letters _x_ and _y_ respectively. Thus, _o x_ being the absissa of the point _p_, _p y_ is its ordinate. All points in the line _p y_ have the same abscissa; all those in _p x_ the same ordinate.—See **Equation, Curve,** Positive, Negative. **ABSENTEE.** 

This is a term applied, generally by way of reproach, to that class of capitalists who, deriving their income from one country, reside in another country, in which they expend their property. The name has been adopted in America. See also with reference to the abovementioned principles of that science to which we here propose to state some of the more material points in a controverted question of great interest,—namely, whether the consumption of absences is really an evil to the particular country for which they derive their revenue. In the importance of a right judgment should be formed upon this matter, as there is a decided tendency in the progress of social intercourse to loosen the ties which formerly bound an individual or a family together. The phenomena thus elicited from the nation, and the rapidity and certainty of steam navigation, Dublin is now as near, in point of time, to London, as Bath was half a century ago; and the distance between England and every part of the continent is in the same way daily diminishing.

Crossing, it would be satisfactory to find that a theory which asserts that absenteeism is not wholly an evil, has some foundation in reason and experience.

The expenditure of a landed proprietor resident on foreign estate, calls for investigation into the industry of a number of labourers, domestics, artisans, and tradesmen. If the landlord remove to another part of the same country, the labourers remain; the domestic servants probably remove with him; but the artisans and tradesmen whom he formerly employed are absent from him. We may observe how these changes, when they once derived in the exchange of their skill or commodities for a portion of the landlord's capital. It never occurs to those who observe, and perhaps deplore these changes, that the landlord has left behind him, and the tradesmen and artisans whose operations have been useful to him, in his money in what part of his own country he pleases. They conclude, reasonably enough, that there is only a fresh distribution of the landlord's revenues; and that new traders and mechanics have obtained the custom which the old ones, through uncontrollable circumstances, have lost. It is left to the same landlord to reside in a foreign country—let the Englishman go to France or Italy, or the Irishman to England,—and it is immediately asserted that the amount of revenue which he spends in the foreign country is so much more than the sum which he derived from his estates in England, and so much encouragement withdrawn from its industry; and that he ought, therefore, to be compelled to stay at home, instead of draining his native land for the support of the foreign rival. This is the general doctrine of our philosophers. The economists maintain that this is a popular delusion; and that, in point of fact, the revenue spent by the landlord in a foreign country has precisely the same effect upon the industry of his own country, as if his consumption took place at home. Even, in a particular instance, it is in the interest of the landlord to stay at home. The landlord will endeavour to state their arguments as briefly as we can. Let us suppose a landlord deriving an income of 100 L. a-year from an estate in one of our agricultural counties.

We will leave out of the consideration whether he resides or not, upon what he lives in the enjoyment of his property, from his fathers, employing the moral influences of property for the amelioration of the lot of his poorer neighbours, or letting that hall, as well as his paternal acres, to one or more farmers. The landlord resides himself in London, or Brighton, or Devonshire, or Ireland, or to any other place, instance to instance. With his rents he probably purchases many articles of foreign production, which have been exchanged for the productions of our own country. No one questions his right to purchase these foreign productions; for there are few people who do not understand that foreign manufacturers design the goods which they can produce cheaper and better than we can, we should not send to foreigners the goods which we can produce cheaper and better than they can. If we did not take advantage of this, the manufacturers would not send to the continental nations our cotton and hardware; and the same principle applies to all the countries of the earth with which we have commercial intercourse.

The landlord, therefore, by consuming the foreign wares, encourages our own manufacturers of cotton and hardware, than, and he abandons the wine which, from drinking the wine: for he doubtless himself uses as much cotton and hardware as he wants, as well as the wine; and by using the wine he enables other people in Europe to use the cotton and hardware, which would not otherwise be used. For all that he consumes of foreign produce, some English produce has been sent in exchange. Whatever may be the difference between the government accounts of exports and imports (than which nothing can be more falla-

se), there is a real exchange of value between the countries, and the intrinsic value of all foreign trade is this,—that it opens a larger store of commodities to the consumers, whilst it develops a wider field of industry for the producers. (See **Exports.** There is a balance of trade for many years past, for instance, in the decisions of our legislators, that unless we sent away to foreigners a great many more goods than we received from them, or, in other words, unless our exports were much greater than our imports, the mercantile system would not be successful. (See **Balance of Trade.**) This notion was founded upon the belief, that if we sent away a greater amount of goods than those we received in exchange, we should be
paid the difference in bullion; and that the nation would be rich, not in the proportion in which it was industrious at home, and in which its industry obtained foreign products in exchange for native products, but as it got a surplus of gold, year by year, through its foreign trade. Now, in point of fact, such a direct or indirect, or ever could have happened; for the commercial transactions between one country and another are nothing but a series of exchanges or barter, and gold is only the standard by which those exchanges are regulated. (See Bullion.) We shall see here considerations bear upon the relations of the English landlord to his native country when he becomes an absentee.

When the landlord, whose case we have supposed, resided upon his estate, he probably received his rental direct from his tenant. If the rental was finally paid in bullion, it was in the shape of as many quarters of corn, as many head of oxen and sheep, as many fleeces of wool, as many fowls, as many pounds of butter, and so forth, as the estate produced. Three or four centuries ago the landlord was paid in cash for the convenience of all parties. It is now paid in money, or, in other words, the tenant sells the landlord's share, as well as his own share, and pays over the amount of his share to the landlord, in a money-rent, instead of in produce. We have seen that an absentee can not do this arrangement of modern times becomes doubly convenient. The rental is then collected by a steward, and is probably paid into the hands of a country banker, who draws a bill of exchange in favour of the landlord. By this process, the landlord at a distance of time, by a bill of exchange, is paid the full amount; and the landlord receives the amount of his share at his own door, without even the risk of sending money from one part of the kingdom to another. It would not be so, the servants of a great landed proprietor residing in London, would be paid in bullion for the convenience of all parties.

* A hundred oxen at your levee now.

If the landlord becomes an absentee, the process of remitting his rent assumes a more complicated shape. We suppose that an encumbrance leads him to settle in the Netherlands. His money is now required to be paid to a British absentee, who will either remit his bullion (which is almost worth its weight in silver) or transmit the value of his share of the corn, cattle, and other produce growing upon his estate in England. To make the remittance in bullion would not only be expensive, but unsafe; and, indeed, bullion can never be made to any considerable extent (such as the demands of absentees would require) from one country to another; for these large remittances would produce a scarcity of money at home, and then the bullion being rare, the price of corn and other commodities would rise. (See Course of Exchange.) Although the expenses of our armies in the Peninsula, in 1812-13, amounted to nearly 32,000,000l., the remittances in corn were little more than 3,000,000l. Nearly all foreign remittances are carried on by bills of exchange. The operation of a bill of exchange in connexion with our absentee landlord, would be this. He is a consumer now, in great part, of foreign produce; he probably requires many articles of English produce, through the influence of the British remittance in bullion. Whether there must be an export of English goods to the amount of the foreign goods he consumes, otherwise his remittances could not be made to him. He draws a bill upon England, which he pays, through a banker, to a merchant at Antwerp. This bill represents his share of the corn and cattle upon his farm; but the merchant at Antwerp, who does not want corn and cattle, transmits it to a merchant at London, in payment for cotton goods and hardware, which he does want. Or there may be another process. The agent, in England, of the absentee landlord, may order the merchant at Antwerp, who transmits the bill to the English landlord, and the merchant at Antwerp, recognising in that bill the representation of a debt which he has incurred to England, hands over the proceeds to the bearer of the bill. The bill may be remitted for the purchase of foreign commodities exported to foreigners. We thus perceive how the consumption of an English resident in a foreign state, out of a capital derived from England, produces, in principle, the same effects upon the English industry, as his partial or entire consumption of foreign goods in England. His consumption of foreign goods abroad is equivalent to an importation of foreign goods into England; and that consumption produces a correspondent exportation of English goods to the foreigner. Let it not be said that England sends out a thousand pounds' worth of her exports in consequence of the absentee's residence abroad, and gets nothing in return. She would have had to pay a thousand pounds to the landlord wherever he resided; and the only question is, whether she pays the amount less advantageous for the national welfare to the absentee, than to the resident at home. The political economists, whose opinions we have endeavoured to exhibit, maintain that she does not. It is probable that a good deal of the difficulty which this question presents, has arisen from the circumstance, that the subtraction of a particular amount of expenditure from particular parts of the nation, is regarded as an evil; while the benefit which still remains to the whole country is not perceived, because it is universally diffused. But it would be a widely different question if the absentee landlord, who had been accustomed to exact a certain proportion of the produce of his estate in England, were to suspend those improvements, and invest his surplus capital in undertakings in a foreign country. This the political economists, who have been most consistent in their opinions as to the right end of accumulation, it is undeniable is maintained: if they had, they would have confounded the great distinction between accumulation and consumption, upon which the very foundations of their science rest. — (See Accumulation.) In many cases the smaller consumption is the more profitable; for the landlord, by saving money, now in Europe, as he used to do in England, is enabled to accumulate with greater ease than he could at home; and this accumulation is, in nearly every case, invested at home. It is the same thing whether the absentee improves his own estate by the accumulation, or whether he enriches the capital of the adventurers in industry at home. Nor could the political economists ever have intended, we apprehend, in maintaining, as a mere question of wealth, that it was a matter of indifference whether an income was spent, to put out of view the moral advantages a capital may arise out of the different modes of individual expenditure. The absurd notion, which even the philosopher Montesquieu fell into in the last century, that the rich did not spend liberally the poor would die of hunger, for passing away from us, is rather that a portion of this particular consumption is suspended, there is an accumulation of capital, which is sure to set profitable industry to work in some way or other. But at the same time, without attaching undue importance to the influence of accumulations of capital, we can consider that it may be so directed as to call into existence profitable in stead of worthless industry, and thus to become a beneficent instrument of civilization to all those within the sphere of its power. In the ruder stages of society such a thing is, it is true, very probable, and indeed certain; but in a country far short of this high state of civilization, the possessors of property have duties to discharge which cannot easily be deputed, and certainly not safely neglected. It is this which makes the question of absentee residences so important in political economy alone. The absence of the principal landholders of that country must, morally considered, be a very serious evil; but it is an evil not without mitigation. The necessity for a large exportation of the products of the island of Ireland is a bill upon the United Kingdom, which calls into action a great quantity of profitable labour, to meet the wants of the English market in the most beneficial manner to the producer. The exportation of eggs from Dublin to Liverpool alone amounts, at one halfpenny each, to nearly five millions a year. The same trade is of considerable consequence. This impulse to the industry of the small tenantry, by exchange with England, will probably, in time, do as much as the residence of the landlords of Ireland could do to raise her peasants from the condition of miserable cottiers to that of independent farmers, who questionably do more than the presence of a debauched and even careless landlord, such as Miss Edgeworth has described in Castle Rackrent, who was wont to swallow up few or great extraordinary exhibitions of his dependents, in the shape of duty eggs and duty tea.
ABS

[See M'Culloch's Evidence before the Select Committee on the State of Ireland, 1825, Fourth Report, pp. 613-14-15; also his Evidence before the Select Committee on the State of the Poor in Ireland, 1830, p. 592, &c.—Leslie Foster's Essay upon Commercial Exchange, 1804, quoted in the lastmentioned Report, p. 597.—Ray, Cour de l'Assemblée d'Ecosse; Politique, tom. v. chap. 6—Chalmers on Political Economy, p. 206, 1832—Quarterly Review, vol. xxxiii. p. 459, for an hostile examination of Mr. M'Culloch's opinions.]

ABSORPTION, a religious ceremony in use in different Christian churches, by which the priest, after an individual, on repentance and submission to the requisite penance, to be absolved either from his sin, or from the ecclesiastical punishment or deprivation to which it had rendered him liable. It was intended by many theological writers, that down to the twelfth century, and distinctly, and not only as a discretionary act only used the words 'May God, or may Christ, absolve thee,' thus refraining from claiming any authority to remit the sin himself. Since then, however, the formula used in the Roman Catholic church has been Ego te absolvere cœtus tuae (I absolve thee from thy sins), accompanied with the sign of the cross. The Council of Trent has expressly condemned the doctrine that the priest has not power of himself to absolve from the guilt of sin. (Session xiv. Canon 4.)

The authority of which it is thus been questioned Order for the Visitations of the Sick, that power has been left to the church to absolve repentant sinners; and the words which the minister uses in performing the ceremony are nearly the same as those employed in the Catholic communion, 'I absolve thee in the name of the Father, and of the Son, and of the Holy Ghost.' This act has been accompanied by some that the absolution thus bestowed is only declaratory, while that pronounced by the Catholic priest is believed to be absolute, and to proceed solely from himself. In some cases this has been considered; not more so, perhaps, as if it is to say, it is of the nature of a prayer to heaven that the sins of the penitent person may not be visited with their due punishment. It is so also in the Protestant Church of Scotland; and there the absolution is commonly used to denote the person's return with a living conscience to the only tribunal of mercy, the church, of which he is a member of the Church.

The process is, in the first instance, pronounced by the mouth of its president, that the party is released from the ecclesiastical interdict to which his delinquency had subjected him.

ABSORPTION, from absorbo, to suck up. The function of absorption is one of the most important and necessary of the animal economy. The matter of which the living body is composed is in a state of continual change: old particles are ever moment taken from their situation and carried out of the system; new particles are every moment conveyed into the system, some from without their room. The constituent matter of the living body is, therefore, never exactly the same in two successive moments. This change of the constituent matter of the living body is due to the entrance of a large and a half of new substances, and the exit of other agents by which this process is carried on are the absorbent vessels. The absorbent vessels possess a peculiar structure essentially different from that of arteries, veins, or any other vessels of the body, and their action likewise is a voluntary power affecting the absorbing vessels arising from two distinct sets. The first arise from the alimentary canal, and more especially from the small intestines. They absorb the digested aliment, and are the instruments by which the new particles of matter, which are necessary to supply the loss occasioned by the removal of the old, are carried into the system. This new matter, which is termed chyle, is of a white colour, very much resembling milk; and these vessels, when full of it, have the appearance of milk when they are shed or howl. This is the fluid we call the lacteals vessels, (that is, milk-vessels.)

The other set arise from every part of the body,—from the whole of its external surface,—from the whole of its internal surface,—from every one of its tissues,—from every one of its organs—such as the skin, the lungs, the heart, the bowels, the kidneys, the muscles, the joints, the bones, and the end of all other parts, which by the agency of the blood and nerves, are capable of absorbing the air and the substances given to the body, may readily be turned into the absorbent vessels, (by whatever name they may be called,) to compose the living matter of the body. The air and the substances given to the body, by whatever name they may be called, may be turned into the absorbent vessels, (by whatever name they may be called,) to compose the living matter of the body. The air and the substances given to the body, by whatever name they may be called, may be turned into the absorbent vessels, (by whatever name they may be called,) to compose the living matter of the body.

The function of absorption explains many phenomena connected with health, with disease, and with the action of remedies. This is the fluid which supplies the nourishment to the animal system, especially to the widely-extended and powerful causes of fever,—namely, animal and vegetable matter in a state of decomposition; those, together with the effluvium of marshes, exhalations from the animal body itself; and perhaps other noxious gases diffused in the atmosphere, rendered foul by the extension of illustrations of its operation. An exposure but for a few minutes to an atmosphere loaded with marsh effluvia, of an intensely noxious nature, may produce a protracted ague, or even instantaneous death. Even a few inspirations of the atmosphere, rendered foul by exhalations from the human body, may produce, in a person previously healthy
immediate nausea and vomiting, followed by severe and persistent fever. A person labouring under small-pox may contaminate the air of a room to such a degree that a healthy person, breathing this air but for a short space of time, may become infected with the disease, although the infected may never have entered into it or been within sight of the infected person. In all these cases a poison is diffused through the atmosphere, which comes into contact with the surfaces of the body, and so affects the system through the medium of absorption. The intoxication of the alimentary canal or of the blood, or other injurious, these malignant agents; hence, persons who are under the necessity of remaining constantly in the chambers of the sick may remain with perfect inappetence, if these chambers are frequently and the air is well renewed. For example, if vomiting is imperfectly performed, not only is the disease of the patient aggravated, and perhaps by this cause alone rendered mortal, but his nurse also is sure to suffer; hence the value of this further fact, which cannot be too constantly borne in mind, that these noxious agents always affect the system exactly in proportion to its want of energy. Exposure to a powerful noxious agent, when the stomach is empty, is the body is exhausted by fatigue, when the mind is depressed, under the action of fear, hunger, and mortal disgust, exposure to this very same agent, when the body is well nourished, when the functions are carried on with vigour, when the mind is cheerful and confident, will be attended with no appreciable effect. There is no kind of severe and prolonged obesity or an over-fatigue; the mental condition of the management of which the knowledge of facts of this kind may not afford useful suggestions; but this knowledge is of paramount importance when malignant and mortal epidemics attack a village, a city, a district, or a nation.

This article is about the effects of malnutrition on the function of organs. The article states that in the absence of absorption in relation to noxious agents which are generated within the body itself. When secretion is vitiated, and the morbid matter is absorbed by the lymphatics, when digestive processes are much retailed, when the excretory portion of the alimentary canal is perfunctory, and the facial matter which ought to be carried out of the system is retained there and in part absorbed, in such cases, the sensible qualities of the perspiration, the colour of the breath, the foul state of the skin, the loss of strength, the irritable and feverish condition of body and mind sufficiently declare the disorder of the system. Considerations such as these show the value of pure air, simple and easily digested food, and regular exercise, purgative medi-
cum, and the class termed elixirs. By these means we can reduce the activity of the alimentary system, that are conveyed by this channel to secretory organs, and by their influence on the functions of these organs, effect a simple change in the general functions of the body.

ABSTINENCE, from abstain, to abstain. The term abstinence signifies a total, or an excessive privation of food. It has been shown above and the caution is necessary that the condition under which the matter of the body is in a state of continual change,—that old particles are constantly taken up and carried out of the system, while new particles are as regularly deposited in their room to repair the loss. The source of these new particles is the aliment, or food; but a second office is performed by the aliment scarcely less important than that of furnishing new matter for the renovation of the system. All the organs of the body are excited to the performance of their functions by the aliment, and by the particular stimulants, such as air, water, heat, and so on. But of these stimulants, the aliment is among the most indispensable and the most powerful. Upon the quantity and quality of the aliment depend the quantity and quality of the blood, and upon the quantity and quality of the blood depend the quality of the mind and the individual, and upon the quality of the mind depend the quality of the body. For example, the power of the stomach is closely connected with it; or where, owing to an unsound state of mind, the individual refuses to take nourishment.

During the first two or three days after the total abstinence from food, in a person previously in sound health, the suffering from hunger is generally severe. The thirst is also at times distressing, but thirst is not constantly attendant. The pulse during this period remains natural, and the temperature is imperceptibly raised. All these evolutions are scanty, and take place at short intervals. After the first two or three days the wasting of the body becomes visible, the fresh colour characteristic of health disappears, and the general appearance of the body is so altered that the patient is sunk and collapsed. The loss of weight, which increases rapidly, is appreciable, and the progress of the emaciation is striking. The physical debility increases in exact proportion with the emaciation: and the mind becomes only as the body is deprived of reason; and the body is most deprived of reason. All this time there is little or no pain from hunger or thirst, or these uneasy sensations return only at intervals, and are seldom acute and never lasting. The pulse at this stage may be a little quickened; it is certainly easily excited: and in like manner the heat, which seldom sinks below the normal standard, is readily parted with,—so that a slight change of the temperature of a room is felt acutely, and produces very uneasy sensations, a fact which proves the existence of a very sensibility. The functions are carried on, no less clearly than the physical debility itself. The most remarkable and curious phenomena which next supervene are those connected with the intellectual faculties. The loss of power to perceive accurately, and to connect the points which may be of importance in the management of which the knowledge of facts of this kind may not afford useful suggestions; but this knowledge is of paramount importance when malignant and mortal epidemics attack a village, a city, a district, or a nation.

The history of the progressive changes which take place in the system on the total abstraction of food, is illustrated in the most perfect manner, by two cases which fall under the notice of physicians capable of accurately observing and duly appreciating each successive event. Many wonderful examples of this nature have been cited in the studies which we have been engaged in. The cases which we refer to were observed and recorded by men whose veracity is beyond question, and who were endowed with more than ordinary discrimination and judgment. The record on this account is indubitable. The case in itself is interesting, and is as follows:

For the case we are indebted to Dr. Currie, of Liverpool, the author of an admirable work on the application of cold as a remedy in certain cases of fever. In August, 1795, a gentleman of Yorkshire, aged sixty-six, applied to this physician for his assistance, on account of an obstruction in his swallowing food, with which he had been afflicted for ten or twelve months. At first the complaint was slight, it occurred only when he attempted to swallow dry and hard substances; it afterwards extended to solids of every kind; and, at the time he was first seen by his physician, although he was still able to pass down liquids, the quantity he could swallow was not sufficient for his nutrition, and he was considered reduced. On the introduction of a bougie into the pharynx, however, he was immediately relived from the obstruction which, by a moderate pressure, was overcome. It then passed easily seven or eight inches more, but, at the lesser part of the tube towards its termination in the oesophagus, it met with a firm resistance, which no patience and skill could overcome. The tube was then introduced into the stomach, and a very viscid tumour, which, gradually increasing at first, diminished the passage, and at length closed it wholly.

On the evening of the 17th of October a sudden increase of the obstruction came on, and from this time he was able to swallow only a small damp of food at a time, and at long intervals. It was with difficulty that he got down seven or eight spoonsful of strong soup in the day, and this quantity gradually diminished. On the thirteenth day from this sudden increase of the obstruction, the passage appeared to be wholly closed.

The patient himself, to the last, was far from despairing
of his recovery; and the affectionate friends around him, though they could not but see the issue of the case, yet desir ed that his life might be prolonged to the uttermost.

The following plan was, therefore, adopted with this view. Every morning a clyster was administered, consisting of eight ounces of strong broth, made chiefly of the mem branous parts of feet, these being considered the most nu trients, but this with the subject of his appetite, and to which were added forty drops of laudanum. This was re peated in the afternoon, and again in the evening, previ ously to which, in the evening, he was placed up to the neck in a tub of warm water, which he drank freely; that many jokes had passed, at the recollection of which he laughed heartily, a thing uncommon with him; but it was observable that he was unable, longer than a mo ment or two, to distinguish this scene which had passed in sleep from a real one, and therefore was inclined into delirium from which he never recovered. At this period he was so weak as to be scarcely able to turn himself in bed, to which he had been entirely confined several days, previously to his death.

The second case, which is no less interesting, occurred to Dr. Willan. A young man of a studious and melancholic turn of mind was affected with symptoms of indigestion, particularly with sharp pains in the stomach and a constant sensation of internal heat, for the relief of which he thought proper to begin a severe course of abstinence, hoping by this means, as he said, to remove his disagreeable sensations; but there was reason to believe that some mistaken notions on the subject of religion principally induced him to form this plan of self-torture. He had, by the advice of a physician, drawn from business and the society of his friends, took lodg ments in an obscure street, and entered upon his plan, which was to abstain from all solid food, and only to moisten his mouth with water, or drizzle the juice of an orange. After three days of abstinence the craving or desire for food, which was at first very troublesome, left him entirely; he then pursued his studies and meditations without further inconvenience; he used no other drink except very cold water; he slept very little, spending most of the night in writing; he consumed from half a pint to a pint of water daily, into which he squeezed the juice of the orange to give it an agreeable flavour. He persisted in this plan with firmness fifty-one days. During the succeeding ten days his strength failed rapidly; he was no longer able to rise from his bed; hitherto he had flattered himself that his support was preternatural, and indulged his imagination with the prospect of some great event which he expected would follow this extraordinary abstinence. He then found himself sinking to the grave his delusion vanished. About this time his friends discovered his retreat, and he was prevailed upon to assent to any plan that might be conducive to his recovery. He was seen by Dr. Willan on the morning of the first day at six o'clock. In this instance, there was a degree of lethargy associated to a most astonishing degree; the muscles of his face were entirely shrunk; his cheek bones stood prominent and distinct, affording a most ghastly appearance; the abdomen was concave, from the collapsed state of the intestines; the ribs were visible; the greatest part of the muscles and the processes of their bones were easily distinguishable. His whole appearance suggested the idea of a skeleton prepared by drying the muscles upon it in their natural situations. His mind had become imbecile. He had undertaken during his confinement to copy the Bible in short-hand, and this work he had executed very neatly as far as the second book of Kings, with short arguments prefixed to each chapter. He showed his physician several improvements he had made in that kind of writing, particularly in the abbreviations. He had also, with great diligence, put together parallel passages, and traced particular subjects through the whole Scriptures, noting their application in different instances, and adding observations of his own. He had, in short, made great improvements in moral and religious knowledge, and had conducted himself with considerable ingenuity and judgment; but afterwards he became obscure, and seemed to be lost in endless confusion.

Unfortunately the treatment adopted was injurious, the quantity of food allowed him being far insufficient; yet, for a first few days, he seemed to improve, regaining some of his strength, and acquiring firmness and even cheerfulness of mind; but on the night of the fifth day he was sleepless and restless; on the morning of the sixth he began to lose his appetite, and his physical strength was unmanageable; at the same time his pulse was increased in frequency, with considerable heat of the skin, and tremors. During the following day he continued raving, and talking very incoherently, as he had done during the preceding night. He remained nearly in the same state, scarcely ever sleeping

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and taking very little nourishment, his pulse becoming daily smaller and feeble, and beating at length 120 strokes in a minute. Miss Cornaro still continued to eat, but only day by day from the period that he began to take food and medicine, and the seventy second from the commencement of his abstinence, on which day he died, quite exhausted.

There is no authentic case on record in which the duration of abstinence was so long. From these cases taken together afford an excellent history of the disorder of the functions, and the exhaustion of the powers of life on the total and continued abscission of food. The mind in the first instance was naturally firm and strong; in the second, it was supported by an enthusiasm amounting to insanity. When the mind is feeble, and especially when it is under the influence of fear, anxiety, despondency, or any other depressing cause, the duration of life is greatly abridged. It is in point of fact the absence of sleep, the loss of appetite, hunger and thirst; the absence of all energy of the fluids; the absence of all violence and turbulence of mind until delirium set in, the precursor of death.

From the powerful influence of abstinence on the system, it is obviously capable of becoming a most energetic remedy in various diseases. When the mass of the fluids and solids of the body is too abundant, abstinence is capable of reducing them to almost any extent that can be required; and if the disease is accompanied by pain and confusion of the senses, not only is it unattended with any diminution of the strength or injury to the health, but it contributes to the improvement of both. Numerous instances are on record which place this fact beyond question. The case of Cornaro is a splendid example of the power of abstinence, which afforded evidence of this more complete than it would be easy to invent, are universally known. The body, whatever be its bulk or weight, provided the health be in other respects maintained, may be reduced to any degree of thinness, and kept at that point by an appropriate regulation of diet and exercise. The physician, at his pleasure, can make no one fat, but he can make any one as thin as he chooses, frequently improving at the same time the health and visage of the patient and mind. Selden he is called upon to put this art into practice, and seductor than he ought does he insist upon carrying it into practice; but it is something to know that the resources of his art place this in his power.

In all acute diseases, such as the various forms of fever and inflammation, abstinence is a most powerful remedy, not only because the abstraction of nutrient diminishes the mass of the fluids and solids, (since the process of absorption goes on when no supply of either is stopped,) but it also withdraws the load of the main stores of the system, and consequently subdues the increased actions which accompany, and which for the most part constitute acute diseases.

22. Acute Maladies. — Acute maladies, especially in that large class which depend on what is termed phlegm, that is, of great quantity of fluids and solids, particularly in the phlegmatic state of the blood-vessels of the brain predisposing to and producing apoplexy, in some morbid affections of the stomach itself, in some degenerations of the liver, and in several diseases of the heart, abstinence is an invaluable remedy. In other chronic diseases it is injurious, as in diseases of debility, in diseases which depend on irritation in contradistinction to those which depend on inflammation, and in various nervous maladies.

Abstinence is not equally well borne by all persons, nor at all times by the same person. By the corpulent and phlegmatic it may be endured longer, and carried farther, than by the thin and spare; in the middle of nature and very old age. A degree and duration of it, which are highly beneficial in a fever or an inflammation, would be fatal in the state of health. It is curious, and it is highly important to bear in mind, that abstinence was not only productive, but nearly so nearly alike, that it often requires the utmost care and sagacity on the part of the physician to distinguish the one case from the other; and as the one requires opposite remedies from the other, a mistake may be fatal, and must be injurious. A man, addicted to drunkenness, was cast into prison for theft, and reduced, at once, to a diet of bread and water. After the first week, a disorder of the intellectual faculties took place; his countenance became pale and expressive of languor, his flesh wasted, and his strength declined; his nights were sleepless; shortly afterwards there was delirium, which was mild at first, but subsequently furious. These symptoms might have been easily mistaken for those of the man who derived inflammation of the brain, of which the nature of the affection was discriminated, and brandy was administered. Immediately the affection of the brain disappeared, and the flesh and strength returned.

Some time ago an alarming and unusual case burst out in the Melbank Penitentiary. The prisoners confined in this prison were suddenly put upon a diet, from which animal food was almost entirely excluded. An ox's head, the meat of which weighs eight pounds, was made into soup for one hundred and forty-nine prisoners, who were ordered to eat one quart of it each in place of the usual food. The prisoners were at the same time subjected to a low degree of temperature, to considerable exertion, and were confined within the walls of a prison, situated in the midst of a marsh, which is below the level of the sea. The adjacent woods are subject to great fluctuations of colour, of flesh, and of strength; next, this simple deli- cacy of constitution was succeeded by various forms of disease — scurry, dysentery, diarrhcea, low fever; and, lastly, affections to the brain and provoking system — namely, headache, vertigo, delirium, convulsions, apoplexy, and even mania. When bleeding was tried, the patients fainted after losing five, four, or even fewer ounces of blood. Abstinence will sometimes produce a train of symptoms exactly similar to the above diseases. Persistence in the abstinence will aggravate the malady, which will bundle every mode of treatment as long as the abstinence is persevered in; but which will disappear with surprising rapidity on the administration of a generous diet. Great care is especially required in the use of other irritants, which assume the appearance of inflammation, and which are attended with headache, noise in the ears, giddiness, restlessness, sleeplessness, and delirium. A professional man was seized with fever; rigid abstinence, not only during the duration of the fever, but also during the stage of convalescence. Delirium, which had been present in the height of the fever, returned in the convalescence. A physician of eminence in medicinal cases was seized with a fever, and consulted with and mind. Selden he is called upon to put this art into practice, and seductor than he ought does he insist upon carrying it into practice; but it is something to know that the resources of his art place this in his power.

It is the common belief that abstinence is conducive to longevity, and many stories are on record which are conceived to establish the truth of this opinion. It is stated, for example, that the primitive Christians of the east, who were driven from their country and dispersion into Egypt, lived healthfully and cheerfully on twelve ounces of bread per day, with mere water: that, with this diet, St. Anthony lived 165 years; James the Herm. 161; Ase- by, a student of the Exsop, 117; Simeon the Stylist, 112; and Romuald, 126; to which are added many others. But we should remark that the evidence for these instances of longevity may not be quite satisfactory.

The quantity of food absolutely necessary to support the functions of life in vigor, is not known with any degree of exactness. Probably it varies with every constitution, and with every situation and circumstance that modify constitution. Provision is made in the economy for carrying out the supreme superabundant nourishment, so that, within certain limits, more is than absolutely requisite is not injurious. Excess, without doubt, is always pernicious, and its dire tendency is to produce disease and to shorten life. For one person, however, what is vital nourishment to another, if consumed, a hundred die prematurely from the want of a sufficient quantity of nutritious food. Persons who live in the bad air of a city require a larger quantity of food, and that of a more nutritious quality, than those who breathe the pure air of the country; and those who labor, physi- cal or mentally, need a corresponding augmentation of food, in order to compensate the expenditure of the system. Persons in sound health, with a good constitution, having a firm and calm mind, and an active imagination, and who, indeed, a good portion of sleep, may subsist a long time on very little food. And such seems to have been the condition of the Eastern Christian ascetics, whose abstinence and longevity have been so much celebrated. But, even under such circumstances, the processes of life are attended with a
certain amount of expenditure, for the compensation of which a certain quantity of food is requisite, and without a supply of which the duration of life must be inevitably abridged. Both the physical and the mental states here supposed are precisely those, however, in which too large a quantity of food would prove more injurious than too small a quantity. In a word, in a state of health, abstinence is absolutely requisite, and, thus, though the mind abstracts, in a state of disease, abstinence is often beneficial, and temperance itself injurious, because what is temperance in health is excess in sickness.

Any continued morbid condition induced by long continued abstinence, but food; yet nothing will more certainly or more rapidly extinguish life, than the administration of food, unless it be given with the utmost caution. If a person, after having been long exposed to severe cold, be placed close to a large fire, or be brought at once into a warm room, he will sustain grievous injury, and perhaps die; and, in like manner, if a large quantity of nutritious food be poured into the stomach of a person who has been exhausted by long abstinence, the feeble spark of life that may remain will certainly be extinguished. In Dr. Wilan’s case, three pints of milk, a pint of milk for breakfast, a pint of mutton-broth boiled with barley for dinner, and as much rice-milk for supper,—were allowed on the third day after an abstinence of sixty days! No wonder that all the symptoms of death followed, and the negligence of the patient soon became hopeless. One-third of this quantity would have been far too much. To have allowed milk at all was bad, because milk becomes solid in the stomach of the square bodied man, and is thus a source of injury to others, from being unmasticated. In cases like this, a little thickened broth should be given every three or four hours, and the quantity very gradually increased; subsequently, animal food may be allowed; warmth should be provided for; and every useful anodyne, and the bowels should be aided by the occasional use of mild clysers. Internal stimulants are seldom needed; when given at all, the best are ammonia, camphor, the vegetable bitters, and tonics, with small quantities of some aromatic stimulants.

ABSTRACTION is an act of the mind, by which it considers a certain attribute of an object, or several attributes, by itself, and without regarding any other attributes which the object or objects may happen to possess. Thus, in the case of a ship, we see that these objects have in common the attribute of blackness; and this quality we can in thought draw off or abstract from the various other attributes which they respectively possess; and consider the blackness of the ship, as an individual and separate object. In like manner we can consider any attribute of a single object, such as of the sun or moon, without attending to its other attributes; thus we may contemplate the magnitude of the sun without attending to its heat, light, &c.; or we may consider the magnitude of the moon without attending to its light, heat, &c. When we consider the magnitude, the inequalities of its surface, &c. All names of classes, inasmuch as the individual members can never be identical, are formed by a process of abstraction. Thus, when we think of a ship or a house, we pay no attention to the materials, colour, shape, size, construction, convenience, or beauty of the ship or house, but give the one name to any dwelling of man built by regular artificers, and the other to any vessel with a deck and masts made to sail on the sea. Any object which possesses these attributes we call a ship or a house; though there cannot be any ship or house which possesses only those attributes, and is not also of a certain colour, size, shape, &c.; but these incidental qualities we leave out of our consideration in referring any object to the class of houses or ships.

From these remarks it is evident that abstraction, being a merely arbitrary act of the mind, by which a certain attribute is considered apart from any other attributes with which it may happen to be associated, does not represent any thing which is a still in the nature of things, there is nowhere an abstract man or tree which has no colour, dimensions, or other incident not entering into the abstract notion signified by those general terms. Man or tree, therefore, does not present any object to the mind which we consider as characteristic of a certain class, we refer to it that class, without taking anything to be combined of the other attributes with which they may happen to be combined. Thus, if in some unexplored part of the world there should be discovered a race of animals resembling some known variety of the human race in every particular except the colour of the skin or the hair, they would be doubtless called men, although this thing as an abstract man whose skin or hair is devoid of colour.

The circumstance of there not being any sensible object, or any conception of our mind, which we can image to ourselves without its attributes, has given rise to considerable perplexity on the subject of abstraction. For instance, when we think of a horse, we represent to ourselves an animal of certain colour, shape, and size; though we should equally give the name of horse to an animal of different colour, shape, and size. So, when we think of a plane triangle, although a triangle is one of the most evident thing, that it is an equilateral straight lines, yet we cannot help representing to ourselves a triangle which is either right-angled, or acute-angled, or obtuse-angled, or equilateral or scalene. The truth is, that this process by which the mind abstracts, is, that it takes a certain object or represents to itself the object of thought as an individual of its class, together with certain particular attributes which must belong to all individuals; and it considers apart from the rest only that attribute which is required for the matter in hand. Thus, if it is a question whether a newly-discovered skeleton is that of an animal belonging to the class of elephants or of deer, the comparative anatomist calls to his mind an elephant or deer, such as actually exists, but considers only the structure of his bones; and, if there is a close agreement in their structure, he pre-supposes that the animal to have belonged to one of those classes. So, likewise, when a mathematician, by means of a figure described on paper, proves that the square of the hypotenuse equals the sum of the squares of the other sides of a right-angled triangle, although the image in his mind is that of a triangle of a definite size, yet he considers only the relation of the sides and angles, without paying any attention to the length of the lines.

This process, by which the mind generalizes a particular notion, by considering only a part of it, might be illustrated by many examples of changes in the meaning of words. Thus, there stood formerly on the bank of the Thames in London, a palace called Bridewell; this, in the reign of Elizabeth, was converted into a prison for poor persons—hard labour: whence the term bridewell has been extended, and is now sometimes used as a general name for such penitentiaries. So the name palace has been extended to all sumptuous houses, having originally been confined to that on the Palatine hill, at Rome. It has been remarked that, although brute animals have, like men, the faculty of reasoning or drawing conclusions from premises, yet they have not, like men, the faculty of abstraction. Nevertheless, if any person should reason that a man who has once been bedewed with a stick, or peppered with stones, is not likely to be kept away from all sticks or stones, of whatsoever size, shape, or colour. That they cannot found, on abstraction, the admirable gift of language, the most important distinction between men and beasts, is owing apparently not to the absence of the power of forming general notions, nor yet to the inability of making articulate sounds, as we may perceive in the instance of the parrot.—See Nominalists and Realists.

ABSDURDUM, REDUCTO AD, is that species of argument which proves not the thing asserted, but the absurdity of everything which contradicts it. It is much used in Geometry, in order to demonstrate the converse (see Converse) of a proposition already proved. One of two things must be true; either the proposition asserted, or something in contradiction. If the opposing party denys the proposition, he must affirm that which is contradictory. Let his counter-proposition be taken for granted; then, if, by the legitimate use of it, some absurdity can be deduced, it is evident that the proposition asserted, and therefore the proposition denysed, is true. As an instance of this method of proceeding, let us suppose it has been proved, and is not denied, that whenever A is B, then C is D. We may then affirm that when C is not D, A is not B. For if A were B, and C were not D, the strict form of the reductio ad absurdum, in this case, is as follows:—You grant that if A were B, C would be D; but you refuse to admit the consequence that, when C is not D, A is not B; that is, you say that C may not be D, and yet A may be B. Let this, then, be as you say, that is, let C not be D, and yet let A be B.

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But in supposing that A is B, the admitted proposition obliges you to say that C is D. But you have supposed that C is not D, and that C is not B, which is absurd. Consequently, if it be true that, whenever A is B, then C is D, it follows that, when C is not D, A is not B.

The reductio ad absurdum has been objected to as not equally conclusive with direct demonstration. For this there is no foundation; though it must be admitted that direct demonstrations are more pleasing and more elegant. But it is obvious that, if everything which contradicts a proposition be false, the proposition itself must be true. In such a case logic distinguishes between that which is only contradictory, and that which is contrary to a proposition. Thus, to the proposition that 'all squares are equal,' it is contradictory that 'some squares are not equal,' and contrary to it that 'all squares are not equal.' Hence, whatever disproves a proposition something contradictory, and whatever disproves everything contradictory proves the proposition. The reductio ad absurdum is, therefore, as conclusive as direct demonstration.

ABU BEKR, properly called ABDALLAH ATIK BEN ABI KHOFAH, but better known under the name of Abu Bekr (i.e. 'Father of the Maiden,' in allusion to his daughter Ayyat, 'the Maiden'), was the first caliph or successor of Mohammed in the government of the new empire founded by him. Mohammed died in A.D. 632, without leaving male issue. The succession to the sovereignty of the empire was first contested between his father-in-law, Abu Bekr, and Ali ben Abi Taleb, his cousin, who was also, through marriage with the prophet's daughter Fatima, his son-in-law. Between the two rivals themselves the dispute was settled without an appeal to arms. Ali submitted to Abu Bekr, and Abu Bekr, after his succession, one must be true; thus, either all squares are equal or some squares are not equal. Hence, whatever disproves a proposition something contradictory, and whatever disproves everything contradictory proves the proposition. The reductio ad absurdum is, therefore, as conclusive as direct demonstration.

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The section treating of the Mohammedan history is written with greater accuracy; and in his account of the Mogul dynasty, towards the conclusion of the work, Abulfaraj speaks from his own knowledge and experience as an eye-witness. Though written by a Christian, this work is held in high esteem even among Jews and Mohammedans in India. To give a correct idea of the curious details which it contains concerning the history of science among the Arabs, particularly under the three Abasside caliphs, Mansur, Harun al Rashid, and Mamun. An edition of the Arabic text of the "Dinastrias," accompanied with an English translation, was first published by Mr. Gowanlock at Oxford, in 1663, 4to.; the Latin text, likewise with a Latin version, was edited by Bruns and Kirsch, at Leipzig, in 1769, 4to.

Abul Fazl, son of Sheikh Mobarik, was the valet of the celebrated Mogol emperor Akbar, who reigned from A.D. 1555 to 1605. Of the history of his life few details are known to us. In 1602, when returning from an expedition to the Deccan, he was murdered in the district of Nurwar by banditti, and, it was suspected, by the contrivance of Akbar's son Selim, who afterwards succeeded his father on the throne, under the name of Jehangir. The extensive and valuable works, which, notwithstanding the duty of his high office, Abul Fazl found leisure to write, have become a monument of personal service to his beloved emperor, as well as among the most enlightened statesmen, of the East. His principal work is the "Abkar-Namke," which exists as yet only in MS., and contains a history of the reign of the sovereign whom he served, and to whom he paid his personal allegiance. It was carried down till very near the time of his own death, and it was afterwards continued by Sheikh Enaieet-ullah in a supplement, entitled "Tahmiit-i-Abkar-Namke." But the work which has most contributed to make his name familiar to us is the "Takht-e-Mogul," or the geographical, historical, and political description of the Mogul empire, and of the several branches of its administration, some account of which will be given hereafter. [See AVIN-I-ABDARI.] Abul Fazl was a friend to the oppressed Hindus. It appears that the grievances which he made for their protection, and the zeal with which, assisted by his brother Fezli, he endeavored to derive a precise notion of the nature of their political and religious institutions from their own ancient codes, prejudiced many narrow-minded Mohammedans against him. In his Persian prose translation of the great SanakiriPerpom, the "Mahabharata," Abul Fazl has left us a curious and valuable monument of the persevering diligence which a Mohammedan statesman deemed it worth his while to bestow on the literata at the Imperial court, and the government of which he was called to assist by his counsels. Another of his works, less interesting to us, though much admired in the East on account of its refined and florid style, is the "Ayar-i-Daniih," or "Description of the Countries," and an imitation of the Arabic from the Arabic of the well-known fables of Bidpai, or Pulpay.

ABULFEDA, or, with his full name, EMAD-EDDIN ABDULFEDA ISMAIL BEN ALI, was the descendant of a collateral branch of the Ayubite dynasty, which Saladin, in A.D. 1192, appointed to the sovereignty of the three towns of Hamah, Mazzar, and Barin, in Syria, and which continued to hold that dignity even after the Bahriate Mamluks, under Aziz-Eddin Ibeb, had, in A.D. 1254, put an end to the Ayubite dominion over Syria and Egypt. Abulfeda was born about the year 1189, under the reign of al-Malik al-Adel, before the Mogsols, who then threatened Syria with an invasion, but were successfully repelled by the Bahriate Sultan Bihara. Mohammed ben Basel, once sent as ambassador to the Gorman Emperor, Frankland, by his brother, chance to meet. He began at an early age to display a warlike disposition, and to join in the expeditions against the remains of the Christian kingdom founded in Syria by the Crusaders. In 1285 he was present at the siege of Antioch, under Edward the first, as an outer and a leader of the land-piers. Already in 1315 he had assisted him in an expedition against the town of Malatia or Melite, which had shown itself favorable to the cause of the Eastern Christians, and to the Mogols. He continued on the most friendly terms with Nasir, till the latter was murdered, and then he suddenly and suddenly, when he had the customary annual presents of homage to the court of the Sultan. In the description of such places as he had not seen himself, he takes care to name the authorities from whom he draws his information. A uniform edition of his works, with the translation of the"Takht-e-Mogul," was published in 1805, by Reiske, in four volumes, 4to. Another edition, in five volumes, 4to. 1789-94; an edition and translation of the ante-Islamic part has been published by Fleischer, Leipzig, 1831, 4to.

ABURY, see AVERBUY.

ABUTMENT, in building, or the practice of civil architecture, that which receives the end of, and gives support to, anything having a tendency to spread or thrust outwards, or in a horizontal direction. The piers or mounds on, or against, which an arch that is less than a semi-circle, or a series of such arches, rests, are abutments; while the supports of a semi circular or semi-elliptical arch, or of an arch of any other figure, which springs at right angles to the horizon, are imposts. The arches of the Southwark and Vauxhall bridges over the Thames at London, are small segments of circles, even less than quadrants, and all their piers are abutments or abutment-piers; the arches of the London, Blackfriars, Waterloo, and Westminster bridges are all semi-ellipsoids, and their piers are imposts, or impost piers, and not abutments. The piers at the extremities of a bridge, of whatever form its arch or arches may be, are always termed its abutments; that is, abutments of the bridge itself; for the road-way of most bridges forms the arc of a circle, and may be considered as an abutment. Level bridges, such as Waterloo-bridge, cannot, indeed, be said to have abutments, in the technical and more restricted sense of the term; but in its more general acceptation, as mounds or props which receive the weight of the superstructure of which is composed, and tend to prevent the possibility of their spreading, the land-piers of a level bridge also are abutments. [See BUTTRESS and IMP.]

ABUTTALS (from the French ABUTTER, to limit or bound) are the butttings and boundaries of lands to the east,
The boundaries and abutments of corporation and church lands, and of parishes, are usually preserved by an annual procession.

**ABYDOS.** An ancient Greek town on the Asiatic shore of the Hellespont, now the Dardanelles, and nearly opposite Sestos on the European shore. It is said by Strabo to have been founded by the Miletians, but the date of its foundation, like that of many other Greek towns, is not accurately known. Abydos was burnt by Darius the Persian, after his Seleucid expedition; and somewhat later (B.C. 480) the people of Abydos witnessed the immense array of Xerxes cross the bridge on a bridge of boats.—(See *Outline of General History*, chap. viii.)—This bridge did not extend from Abydos to Sestos, which was a distance of more than three English miles, but it was formed at a narrower part, where the distance is somewhat less than one mile. It commenced on the Asiatic side, a little higher up the stream than Abydos: its termination, on the opposite coast, was at the projecting point opposite to Abydos, and between Madytnus and Sestos. The practice of crossing large streams by means of boats lashed together, and covered with planks, was common among the Persians: nor were they used only for temporary occasions, but existed in the time of Herodotus and Xenophon over the great rivers of Western Asia, as they do now over the Tigris at Bagdad, the Euphrates, at Hillah near the ruins of Babylon, and elsewhere. When Darius, the father of Xerxes, crossed the channel of Constantinople, on his Persian expedition, the bridge of boats was constructed by a Greek of Samos, who endeavoured to perpetuate his glory by causing a painting of the passage of the army to be put up in the great temple of Juno at Samos. A description of the bridge of Xerxes is given by Herodotus (vii. 36), who was on the spot probably much less than half a century after the event.

ABYSSINIA. It is difficult to give, in a limited space, any very complete account of the country called Abyssinia, and this difficulty arises no less from the extent of the subject than from the want of sufficiently comprehensive and trustworthy documents. We shall endeavour, in this article, to give a brief description of the country, and to state the chief authorities for our present knowledge of Abyssinia, pointing out generally how far they are satisfactory.

The name of Abyssinia became known in Europe from the Portuguese missionaries who penetrated there. It tells us that the name of the people is *Abeerim*; but the Portuguese often write the name of the country and the people respectively in the Latinized forms of *Abyssin* and *Abeerim*, from which our common term *Abyssinia* is derived. But as its first extant use is that of a country by a name not used by the inhabitants themselves, so in this case we are informed by Judolf that the word *Habes* in Arabic, and signifies a mixed people, though the proof of the identity of the Abyssinians being a mixed people is never yet given. The name of Iyopawaran or Ethiopians, is that which is adopted by the people when speaking of themselves, though we cannot say how far it is still in general use. They more commonly call themselves with reference to the great divisions to which they belong, such as people of Tigre, Amhara, &c.

The political boundaries of the country to which we give
the name of Abyssinia have varied since the Portuguese first made us acquainted with it, as we may see from Teliez' History of Ethiopia; but to trace all these revolutions would not be a very easy or a profitable labour. The present political limits of Abyssinia will be given below. Though the term Abyssinia strictly belongs to a particular political division of Africa, it is often used in a vague sense as referring to an extensive country remarkable for the physical conformation of its surface. We shall endeavour to define what part of Africa may be conveniently comprehended under this term. Abyssinia is an alpine country, of high table-land, north of the equator, and containing the sources of two of the largest branches of the Nile, the Taeazze, and the Bahr el Azrek or Abawi, besides the Mareb. Its nearest approach to the sea is in the Baharnegash territory, which forms the N.E. mountain-terrace of Abyssinia, and overlooks the flat coast near Arkeeko (N. lat. 13° 55', E. lon. 39° 37'), on the Red Sea. The rulers of Abyssinia have at present no command of the sea-coast, Masowa and Arkeeko, &c. being in the hands of the Mohammedans. A series of terraces conducts from the west coast of the Red Sea to a high mountain range, which runs nearly parallel to the sea-coast for probably 300 miles,

[This little map of Abyssinia is made according to Bruce and Salt, whose accounts have been compared with those of the Portuguese Jesuits in Teliez.

The map is merely intended to illustrate our description; and, therefore, nothing except what was essential has been inserted. The reader must infer the directions of many hills and mountains from the courses of the rivers, which, however, are very imperfectly known. Such places, as have not had their position determined with some degree of certainty, have a note of interrogation placed after them.]

and forms a boundary between two different climates. Beyond this limit southwards we are not able to state its direction. Towards the north and north-west the mountain region of Abyssinia sinks down into the low countries of Sennar and Kordofan; its greatest width from north to south it is at present impossible to state. By combining the maps of the Jesuits with Bruce's observations, it may be true that, following the meridian which runs through the great lake Dembea, this range may extend nearly 250 miles from the north limit bordering on the Kallas, or low grounds of Tcherkin and Waldhbra, to the almost unknown southern slope. On the south-east the terrace declines along the provinces of Shoa and Efat, which is indicated by the streams which water part of these provinces taking an east or a south-east course. We do not yet know whether or not the high land which divides the waters that feed the Bahr el Azrek from those that flow towards the Red Sea or the India Ocean, is continued westward or south-west towards the interior of Africa, though such a continuous range or high terrace seems exceedingly probable. The Bahr el Abiad itself, the main stream of the Nile, most probably has its rise in some lakes in a high table-land. This high table of land of Abyssinia is probably continued southward also. All we at present know about it is from the journey of Antonio Fernandez, which is briefly given in Teliez, but in such a way as to convey very little information. This zealous missionary left Dembea in March 1613, and crossed the Nile at the point where it turns to the north: he then went due south, and in the course of his journey crossed a large stream called the Maleg, and arrived at the kingdom of Narees, the north part of which lies in about 8° of north latitude. This country appears to be a kind of continuation of the high ground of Abyssinia, but as to its absolute elevation we know nothing at all.

The accounts of the Portuguese may still be considered as authority for many facts relating to Abyssinia, and the reader may see in the learned work of Job Ludolf how much information that industrious scholar was able to extract from them. Ludolf had also the advantage of personal acquaintance with Gregory, an Abyssinian then in Germany. Lewis Poncelet, a French physician, who visited Gonder in 1699,
to cure the king of some complaint, published an account of his journey. Finally, Mr. Bruce, in 1770, entered the country, and published an elaborate account of it sixteen years after his return. For reasons which we shall state more fully under the article BAUKE, we cannot here make so much use of that traveller as of Mr. Salt; and our notice of all those parts of Abyssinia which we know either entirely of his or Bruce's travels must necessarily be very brief and imperfect. Though Bruce is often confirmed by the more recent traveller, we do not feel entire confidence in his accounts of those parts, which are known only from his own personal observation or the information which he collected during the service that he rendered to Mr. Salt, whose plain and unadorned statements form a striking contrast with the rhomondatate and egotism of Bruce. Mr. Salt could not proceed to Gondar, because there was a kind of civil war between the Ras or governor of Tigré and the patriarch of Axum. The latter was left out of the question, and his political condition depended on the will of his viceroys.

The following sketch is principally founded on Mr. Salt's work, which we may at present consider as almost the only trustworthy authority for the kingdom of Tigré. Abyssinia is now divided into three distinct and independent states, which division is partly founded on natural boundaries, and has been partly caused by the incursions of the barbarous Galla tribes. These three great divisions are Tigré, Amhara, and Galla. Tigré is bounded on the north by the Bekla, Boja, Taku, and some wild Shangalla tribes; by the Danakil, Doba, and Galla on the east and south. It is separated on the west from Amhara by a great mountain range called the Nile, running first north and then west. Along the west bank of the Tacazze is the bold mountain range of Samen (mentioned under the same name in the Adul inscription), extending from the south part of Lasta northwards to the district of Wello. The Samen was occupied by the Samen on the 8th of April. The Tacazze and the Samen thus form a natural barrier between Tigré and Amhara; and though one province has been frequently conquered by the other, this natural boundary, joined to the differences of language, customs, and Tigré is always held a real, effective, and permanent union impracticable. Tigré comprehends an extent of four degrees of latitude and as many in longitude, having the form of an irregular trapezium. Its most northern point is about 15° 35' N., and in about 13° 30' E. The most southern point of Tigré is the river which runs westward and joins the Tacazze. This province contains ten chief subdivisions, and many others of little importance: its general character is that of a region of hill-forts, or "ambans," intersected by deep gullies and highly-cultivated plains. The chief towns are Axum and Adowa. (Called in old manuscripts Ar solo and Awzla). East of Tigré is the Galla, which is rich and fertile, and on a level at a considerable elevation above the sea. A lofty mountain range forms its eastern frontier, which range, on the south-east, separates it from the great part of the central plain of the nation. North of the Galla is the province of Enderta, which is divided into a great number of petty subdivisions, some of which comprise large also contains many of the most important cities of the country. The small and low district of Wollo, bordering on Wujeta, contains a fresh-water lake, which is as large as the district of Samen. According to Salt's map, it is about twenty-six miles long. The rugged province of Lasta (called Bugna by the early Portuguese writers), filled with almost inaccessible mountains, is the greatest part of Tigré. The language of Lasta is Amhara, and the inhabitants are divided into several districts, Salow and Born; the low lands between which and the east bank of the Tacazze are in the hands of Christian Agaws.

Still northward, the province of Averagles is a narrow belt of the east bank of the Tacazze, thirty miles in length, which this district also is in the hands of the Agaws. Their houses are built without mortar, and the better sort are constructed in the characteristic form of ancient Egyptian temples. In confirmation of his remark about the forms of their houses, Mr. Salt says: "Mr. Bruce declared that the Agaws were left equal by his opinion, bear out the statement. West of the Tacazze is the mountain province of Samen, the highest land in Abyssinia, extending about eighty miles from north to south. Between the northern part of Samen and Tigré proper is the king of Baharnaghez, which comprises many districts, are ruled by separate chieftains, with such titles as Shum, Kabasha, or Bahamers. The people of the latter resemble to the Arabians, is nothing more than Baharnaghez, the lord of the sea; these provinces are nearest to the coast of the Arabian Gulf, on which the rulers of Abyssinia had once a power that the never recovered.

The great river of Tigré is the Tacazze, probably the Astasabas or Astagábas of Strabo, and one of the most important rivers of the Nile. It rises in the high mountains of Lasta, from three sources which Mr. Pearce visited, and which he called Salt, Mareb, and Ain Tigr. On the east, it is joined by the Samen, on the west, prevents its receiving any considerable stream from that side, till it arrives in the region of Waduluba, where it is joined on its left bank by the Angrab, which is marked in Salt's map as the boundary of Waduluba and Walkayt. On the east it is joined by the Arequa, in the district of Temben, but the exact point of junction is not known. The Arequa rises near Antelo, and probably receives the waters of all the smaller streams that run through the fertile province of Enderta, as it has a wide bed which, in the rainy season, is often filled with water only held by a wall as wide as the river. When Mr. Salt saw it, was, on the east side, low and sandy; but the west bank was rocky, and in some places precipitous. The river, he says, has numerous fords, which render it fordable at most seasons of the year; while during the rainy season, the river is impassable even by the hippopotamus. This amphibious animal, called gomari in the language of the country, is common in the Tacazze; and Mr. Salt, with his companions, found, by experiment, that leaden balls from a musket seemed to make no impression on the back of the animal. The lake of Adule, formed by the natives agospo, is of an enormous size in the Tacazze, and more dreaded than the hippopotamus: those which Salt saw seemed to be of a greenish colour. The river runs south to the Amhara province, which, rising in the mountains of Tanaz, that forms the north-eastern part of Tigré, flows north-west, and probably joins the Tacazze in the kingdom of Semnar: report says it is lost in the desert. Between Antelo and the sources of the Tacazze, Mr. Pearce on one of his visits saw a great number of rock beds, which met with the kind of outline we have attempted. Abyssinia may be correctly called an Alpine land, and as it has never yet been well explored, we must necessarily be very incomplete, and must depend altogether on the routes of the few travellers who have visited the country. The authorities are the accounts of the early Portuguese missionaries, Ludolf's History of Ethiopia, Pocet, and the most important of all, Sauer's Travels. That part of the Alpine land of Abyssinia which lies between the Tacazze and the Red Sea, and forms the
The rest of Tigré is generally described as a high table-land, consisting of different elevations, which we may consider as interrupted, or, in some cases, rather connected by mountain ranges. From the northern regions of Baharagash we rise by various steps to the mountain province of Asama, where the Tacazze rises its first stream, which here forms the dividing line of the waters that run north-west to the Nile, and those which, taking a south-east course, enter the Indian Ocean, or are lost in the sand. The Samen, on the west of the Tacazze, forms the high barrier in that section; and though very steep in some parts, as he describes it, it is formed of inferior elevation to the southern eminences in the latitude of Antalo. The top is flat and cultivated. Mr. Bruce was fortunate enough to see all at once some people cutting corn near Indian, where he had driven over the high plain, and at about 205 inches, and no dew was experienced after first ascending the mountain, a phenomenon observable in some parts of the United States, at an elevation of a few hundred feet. No register of the thermometer being given (Bruce iv. 378), we can only guess the height of Lamalmon, where Bruce crossed it, to be about 5000 feet. In his tables, however, (vol. vii. p. 2,) he gives the height of the barometer at 19° 26′, at an elevation of a few hundred feet.

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side, "falls in several cataracts near 100 feet high into a narrow valley, through which it makes its way into the Tazazz." 

We must briefly notice the other approaches to Tigre from the sea-coast. The most southern, leading from Belu, or Belal Bay (N. lat. 11 14'), is only described by P. Buy, the author of "Itinerarium." This route, though running along some elevations, till the traveller ascends through a mountain pass into a still higher and colder region. This is followed by the great salt plain which borders the south-eastern frontier of Tigre, and is here precipitated by Mr. Collin, who visited it in 1809, on his route from Amphilia Bay to Antalo. From the southern extremity of Amphilia Bay (which Mr. Salt, with great probability, conjectures to be the Antiphilus of Strabo), after travelling nearly fifty miles somewhat south of west, Mr. Collin eves to the edge of that salt plain which is said to run from south-east to north-west for four days' journey. The direction of this plain is stated, in Mr. Salt's work, as from north-east to south-west, which Ritter has equaled; but this is at variance with Salt's map, and with the general direction of the great mountains. It took five hours to cross this plain; and the traveller was provided by the natives with sandals, made of the leaves of the desert palm, which are always used in crossing this desert. For about half a mile, the track is marked by slippery white sand, without visible water below. Mr. Collin found it hard, like a rough, irregular sheet of ice. On the west side he found the Abyssinians cutting out the salt in pieces like a mower's wheat-ume, which is done with tolerable ease, as it lies soft. But on the east side, the surface is broken and hard, but that beneath is smoother, and requires some exposure to the air before it is hardened. In some places the salt is three feet deep; but, in general, at the depth of two feet, it is too much mixed with the earth to be fit for use in its natural state.

This district supplies all Abyssinia with salt. At the foot of the Senafo, which may be considered as a continuation of the Taranta mountains, a resident Shum, or chief, under the Ras of Tigre, collects, in kind, the tax laid on all salt taken from the interior by the Abyssinian's backs. This salt, cut into long flat pieces, is one of the principal mediums of exchange in Abyssinia; its value, of course, increasing the farther it is carried westward. "In the more remote parts of Ethiopia," says Ludolf, "you may buy a clod of clay, or the people busily employed in getting in their harvest.

There is almost, but perhaps not quite, sufficient reason for believing that some part of the range of Sanen, which is as high as any land in Tigre or Amhara, reaches the limits of the Sahara, which, though the general height is about 13,000 feet, Mr. Peacock, on crossing the summit of Amban-Hai, one of the highest points of the Sanen, experienced a heavy fall of snow on the 17th of October; though on his visit to the sources of the Tazazz, through the mountains of Lusat, on the 4th day of the same month, he does not mention any snow: but, on the other hand, he speaks of snow and ice lying in every hollow of the Amba-Hai, before he had attained the summit. The monument of Ahable speaks of snow all the year round on the Sanen. According to the native authority on this decisive Mr. Salt's testimony to seeing snow on the Amba-Hai from the high land near Ailowa (a distance certainly not less than fifty or sixty miles according to his own map), and on the 5th of May, is the strongest testimony that we yet have.

Of the kingdom of Amhara, which Mr. Salt did not visit, our information is neither extensive nor altogether exact. The authorities are the accounts of the Portuguese Jesuits, Pedro de Loureiro, and J. Ambro; the latter of whom was Bishop of Finot, and, after the same, the Rev. Mr. Berenger, bordering in Lasta, we find—Berenger, Menno, Beleessen, Feguera, Denben, containing the capital Gondar, Tcherkin, Tcheliga, Kuara, Matisha, Gojana, and Danout.

The kingdom of Amhara forms a high table-land, sloping towards Senmaar in the north, towards the Bahar el Abiad on the west, and having on the south-east, in the province of Tigre, a sea-coast, connected with those of Lasta. Though we know many names of provinces, subdivisions of provinces, and tribes, our information about the country is exceedingly limited. The parts best known are those near the sources of the Nile, or rather of that branch of the Nile which forms the upper part of the great lake Deneba. According to Bruce's barometer measurements, the height of the sources of the Azrek, which are at some elevation above the level of the lake, must be more than 10,000 feet; but, though it may be more, there is no doubt that the whole region round the great lake Deneba is a high plateau, in parts intersected by hills. The first account of the springs of the Nile is by Father Peter Paez, from whose unpublished MS. Kircher's account is taken, and this agrees with Bruce's. At the Sources (which Mr. Ludolf wrote) is one called Ualba, on the top of Dongla, which we presume to be an eminence. After a north and north-eastern course of about seventy miles, it enters the lake of Deneba on the south side. This lake may possibly be the Psamis of Strabo. According to Bruce's map, and his journal of the route, this lake receives the waters of a prodigious number of petty streams. There are, according to Ludolf, eleven islands in it: the largest is named Dzam Tanza, which is sometimes called Bahej-Tanza, or the Sea of Tanza. All these islands, when Ludolf wrote, were possessed by monks.

The hippopotamus is abundant in this lake, but it seems doubtful if the crocodile inhabits it. The Nile, at its exit from the lake, is named by Bruce the river Gau. This, according to Gregory, the spring-head first shows itself in a certain land, called Scuent, on the top of Dongla, which we presume to be an eminence. After a north and north-eastern course of about seventy miles, it enters the lake of Deneba on the south side. This lake may possibly be the Psamis of Strabo. According to Bruce's map, and his journal of the route, this lake receives the waters of a prodigious number of petty streams. There are, according to Ludolf, eleven islands in it: the largest is named Dzam Tanza, which is sometimes called Bahej-Tanza, or the Sea of Tanza. All these islands, when Ludolf wrote, were possessed by monks.

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of horses. The inhabitants are dexterous horsemen, and good soldiers. Shoa joins Efat on the west, and is well watered by the tributaries of the Nile: it contains fine pastures, large towns, and numerous monasteries. Devra Libanos, or the monastery of Libanos, was once, and perhaps still is, well filled with monks. It also contains the town of Teguilet, once the Abyssinian capital, when these two states, as well as Amhara and Tigre, were included in the empire. Bruce finds that a branch of the order which he received, that in Efat and Shoa the Kithi poetic literature might be found in a purer state, and also more traces of ancient customs might be discovered. The regions are, indeed, a tempting field to the spirit of geographers, who might find in the Ma-Oumi full of fruit, without much risk, by setting out from Zeila on the coast.

The animals of Abyssinia present many varieties, as we might expect in such a country; but those that are peculiar to these regions are all that will require a short notice here. It is only in the lower regions and forests that the monkey and the elephant are found; the latter leaving strong marks of its visits by the damage done to the smaller trees. This animal, together with the rhinoceros, boar, and buffalo, is hunted in Abyssinia; and we have in Bruce Travels (vol. vi. p. 230) a curious account of this African field sport. The elephant is not found on the high terraces of Tigre, which are, indeed, nearly altogether without wood, and consequently the elephant does not use long stirs to them.

The two-horned rhinoceros, which is supposed to be peculiar to Africa, and is found also at the Cape, is common in Abyssinia, and was known to the Romans in the time of Sallust, when we see from an epigram of Martial; it is also accurately described by Pliny, and is a large animal. The savage hyena (Hyaena crocuta) haunts every part of Abyssinia in great numbers, and often makes its way into the towns, to which it is somewhat encouraged by certain superstitious notions of the natives, that prevent them killing it whenever they can. The case of the monkey and the elephant is similar; the giraffe is not distinctly mentioned by any traveller as having been seen by him on the terrace lands of Abyssinia, though Mr. Salt seems to say it is found there.

On his journey, Mr. Salt speaks of the zebra as being found in the southern provinces; but his notice of it appears too vague to enable us to assign its geographical limits. The buffalo, the lion, various species of leopards (one of which is black), several vultures, and the bird of paradise, is mentioned in Salt's Appendix, to which we refer the reader. Mr. Salt also mentions an undescribed species of lemur, with a clear white skin, adorned with a single black oval spot on its back. These skins come from Damot and Gofum, and are an article of trade. The ostrich is not found within the limits of Abyssinia Proper, though it is a country adapted to this bird's habits. Mr. Salt mentions that there are many species of falcons in Abyssinia; that vultures are numerous; and that the Egyptian goose is sometimes met with in the country. Its eggs are so large that hawks and quails, snipes, and doves, is common all through the country. In Mr. Salt's Appendix will be found a list of the rarer birds which he collected in Tigre.

Among the insects, the locust is the only one described by Salt, being that species which is said occasionally to cause those dreadful ravages in Abyssinia, briefly described by Lodolf. Bruce speaks of a black ant, nearly an inch long, which cut its carapaces in shreds, and thus proved its relationship to the giant stag-beetle. Bruce says, in his general description of Axum, and in other drawings, must add materially to the appearance of the country. The grape we believe to be indigenous in Abyssinia, and in some parts tolerable wine is made. The jessamine, both orange and white, and yellow like that of Virginia; and a honeysuckle, resembling that of England, are plentiful in some parts. The caper-tree, says Bruce, grows as tall as an elm, and yields a precious wormwood. After crossing the Tacazze in lat. 15° 42', he speaks of lemons and citrons, growing wild in the woods, which he seems to consider as indigenous, and not introduced by the Portuguese. He also speaks of the one to the south, which he interprets the 'river of limes or lemons,' which has, to us, rather an apocryphal appearance. Bruce saw many fine orange-trees near Gondar, but he says that the only benefit expected from them is the shade. The lemons were not, he supposes, good, but the natives made no use of it.

That the Abyssinians are, even in their present state, somewhat superior to most African nations, will appear from the following list of articles manufactured among them:

- Small carpets, from Sämen, of good quality; parchment, from Axum; and iron and brass articles: but the best specimens of brass chains are brought from the south, where they are said to be manufactured among the Gailla. 'Hides, says Mr. Bruce, 'are tanned to grey, black, or brown.' The Abyssinian saddle, so well described by Mr. Salt, and the whole accoutrements of their horses, are good. The horses themselves are generally strong, well made, and kept in good condition; and the men themselves are excellent horsemen.

Of the manners of the Abyssinians of Gondar we have an elaborate picture by Bruce, which we believe to be heightened with the usual colouring of that traveller. In his eleventh chapter he describes a feast of the higher classes, in which he says that the flesh is cut from the back, the skin is stripped off the hind quarters, and the flesh is cut from the buttocks in solid square pieces. The prodigious noise the animal makes, adds Mr. Bruce, with the most conical gravity, 'is a signal for the company to fall down to table. The height of the feast exceeds anything that we know of the most barbarous nations of the earth, and may at least be doubted until it is confirmed. As to the Abyssinians eating raw flesh occasionally, it is certain; but that they do not apply to us to be served by any means beyond the reach of probability; and, indeed, we find Mr. Pearce (see Salt, p. 293) corroborating the fact so far as this—that some brutal Lasta soldiers, on a marauding expedition, while driving a cow, cut two steaks from the rump, which they devoured raw, as we should call it, out of hunger. The animal was then driven on to the camp, and killed. But Mr. Pearce, who had been several years in Tigre, never heard of such feasts as Bruce describes. Mr. Salt, when he was in Abyssinia, in his salutation to Gondar, so well known Bruce, and spoke favourably of him. The feast story, however, was more than he would admit, and he expressed great abhorrence at the thought of it. At the same time he allowed that the harshness of the higher orders was carried much further in the kingdom of Amhara than in Tigre. Yet Mr. Salt met with many young men at Chenit, who came from Gondar, whose dress and manners created a very favourable impression; and he says, 'I have reason to believe that, in general, the people of Tigre are much ruder in their habits and fiercer in disposition than those of Amhara.' The prince Kasimai Yaseus, who was at Chenit on a visit from Gondar, had superior accomplishments to most of the young men in the country, and could both read and write the Gese with facility.

The early Portuguese writers allow the people of Narés, the first rank among the Abyssinians for good manners, while their account of the people of Tigre was unfavourable, the latter being said to have no regard for the Christian religion. The Narés, as Bruce says, are a more refined and elegant people, and the name is not unknown in the countries of the English or Dutch East India Company, as both these nations trade with them. As Mr. Bruce travelled three weeks at Chenit, saw the Raz daily, and was often invited to his evening repasts, without either seeing or hearing of any of the indecencies and grossness which Mr. Bruce describes: intoxication, however, is not unknown. The Abyssinians are a very tall and well made, and sometimes handsome, with features completely Roman. Those of Nares are described as not darker than the Southern Europeans, but the people of Abyssinia in general are nearly black. The Abyssinians are not, however, without name that characterise the people of Western Africa. It is true that some of those whom Bruce saw on the Tarrana had curly heads and short hair; but this is done by art.
"each man having a wooden stick with which he lays hold of the lock, and twists it round, till it eeris in the form he desires." Mr. Salt, saw, on one occasion, the Ras's wife, who was the sister of the Emperor, and he said, that her form is elegant, though small; her features were regular; and, having fine teeth and coal-black hair, she might, in any country, have been esteemed handsome.

Though the Abyssinians from a nation with a physical character which distinguishes them from other nations, yet the country contains some people of a different stock, such as the Christian Agows, who live along the east bank of the Tecazz to Lasta to the confines of Shoa. It is said they were once Nile worshippers, and that they are yet so disposed to the Christia religion. There are also Agows, who are still Nile worshippers, about the sources of the Nile, who supply Gonder with cattle, honey, butter, wheat, hides, and wax. Bruce describes more particularly those who live along the course of the river of Gois. The high-priest of the Nile was a venerable old man with a white beard, seventy years of age, and blessed with a family of eighty-four or eighty-five children. The Geez people do not wash themselves or their clothes in the water that comes down the Nile, but they are genuine natives of Egypt, and their other streams tributary to that sacred river. The Waite, who live on the east bank of the Great Lake, are described by Bruce as speaking a language radically different from all others in Abyssinia; they feed on the hippopotamus, and their hands are homed.

The mountains of Sannien, according to Bruce, are nearly occupied by Jews, otherwise called Fabaas (a word signifying strangers), in which he agrees with Telchz, who says, "the Jews of Abyssinia are the genuine sons and heirs of the people of Sannien; they are warlike, and have done much damage to the neighbouring provincies." Telchz adds, that they still possess the Hebrew Scriptures, and chant the Psalms in their Synagogues. The Shangalla negroes, we are informed, are very numerous in Gois, where they are in slaves; they are also used as slaves in Tigre. A particular account of them, as well as of the Galla, those troublesome enemies of the Abyssinians, will be found under their respective heads. The state of slavery in Abyssinia is an improved condition of the people, and has been much extolled, for the escape numerous evils incident to their wild state, and are well treated.

The Abyssinians even now are not without authors. Mr. Salt brought to England a manuscript, containing an account of the Ras's last campaign against the Galla, which the Ras himself made a present of to Mr. Salt. The history was written by a court scribe, in a style very complimentary to his master. The Ras had a juster at court, whose powers of reasoning, and a love of regular action were of a very high order. A painter was also in his service; and Mr. Salt has given (p. 394) an outline of one of his subjects, representing a combat between some mounted Abyssinians and Galla, which conveys rather a favourable impression of this artist's skill. The Abyssinians are generally fond of pictures, with which they line the inside of their churches and decorate their chief apartments, when they can procure them.

In our present state of knowledge it is not possible to attempt any complete classification of either the peoples or languages included within the limits of Abyssinia. There is no doubt that the varieties of language are very numerous. The chief tongue is the Geez, sometimes called the Ethiope, in which the Scriptures are written. The spoken language is a dialect of the Geez, which, from the course of time, has undergone considerable changes. The Geez is said, by Ludolf, to approach most nearly to the Arabic; and as we are unable ourselves to form a judgment on this matter, we shall quote in the following extract from the learned scholar. "It appears most probable to the Arabic of a much more ancient and purer stock; it seems to be a kind of production, as being comprehended almost within the same grammatical rules, the same forms of conjunctions, the same forms of plurals both entire and analytical, and of nouns both common and proper; whereas under this head the rest of the Oriental languages, may, with little labour, understand this our Ethiope." The Amharie, now the spoken language of a large part of the kingdom of Amhara, is said, by Ludolf, to differ considerably from the Ethiope in construction; yet, like it, it is the language "as far as I judge, the words are common to both." From the list of Amharic and Tigre words given in Salt's Appendix L, it appears that these two languages do differ considerably, and yet they agree in the numerals (as far as examples are given), nearly altogether, which is a strong proof of an original close relationship. The Amhara language, according to Bruce, is now very widely diffused, and the alphabet is the Geez, with seven additional characters to represent the compound Amhara consonants.

The origin of this alphabet is not known, though Mr. Murray asserts it is to be derived from the Greek. (See article Ethiop.) In Bruce, there, vol. ii. p. 1445, account of the MSS. which that traveller brought from Abyssinia. We have purposely refrained from attempting any sketch of Abyssinian history, as it would lead us far beyond all reasonable limits.

For further information, Salt's Abyssinia, 4 vols., 1814—Valentine's Travels—Bruce's Travels, 7 vols., etc.—Ludolf's History of Ethiopia, translated, London, 1602—Telchz, Historia Geral de Ethiopia, 6to, Comana, 1660; a copy in the British Museum—Rotter's Abyssinian Kings, combined with the evidence of the ecclesiastical writers, we learn that Christianity was introduced into Abyssinia in the time of Constantine, by Frumentius, the Bishop of Alexandria, as the heathen, after residing some years in the country, was raised by Athanasius, the Patriarch of Alexandria, to the dignity of Bishop. He arrived in Abyssinia, perhaps about the year A.D. 330, and in the reign of the King Aizanas, which was the year of the Council of Nicaea, in 314, and, however, not certain to which king of the Abyssinian chronicles we ought to apply the names of Aizanas and his brother Sztunzes, both of which occur on the inscription, and also in a letter of the Emperor Constantine, addressed to them A.D. 357. For when the Greek merchant had visited Abyssinia, A.D. 525, it was completely a Christian country, and well provided with both monasteries and churches. Of the Abyssinian churches, which probably belong to the earlier periods of their conversion, or at least eight or nine hundred years old, there are still some remains. The most noted markable is Abba Shnha, hewn out of the solid rock, which at this place is soft and easily worked. The Portuguese, Alvaze, describes ten such churches as these, of which he has given a plan, and one of them is probably the same as that which Mr. Prowse visited at Jummaa Marum (Salt, p. 302). The great church at Axum is comparatively modern, though parts of it, such as the steps, clearly belong to a prior edifice. Mr. Salt describes the well-built remains of a church, or monastery, in which he assigns to the sixth century of the Christian era.

The monastic, and also the solitary life, spread into Abyssinia from the deserts of the Thebaic, and when the Portuguese entered the country they found it full of such devotees; many of them seemed, however, to be monks so far as celibacy was concerned, for they cultivated the ground and lived in villages.

Though a king of Abyssinia, Zachar Jacob, in 1415, sent an ambassador to the council of Florence, very little was known of the country until the Portuguese entered it. We cannot undertake to explain exactly how the notion of an Asiatic Christian prince residing in India, under the name of Prester John, got abroad; those who are curious may consult the works of Mr. Bruce, which is the full narrative of the work of the Portuguese, which was the second book of Telchz. However this may be, John II. of Portugal, anxious to follow up the Portuguese schemes of discovery, and to discover the true Prester John, sent Peter Cvlama and Alfonso Paya to find him out wherever he was, with such success, that at last, in 1445, he discovered a king of Abyssinia by the name of Azanas, who was a Christian, but of a very ancient and pure, without success, and Passa returned home. Cvlama, however, happening to be in some part of the Red Sea, heard of a Christian prince of the Abyssinian, whom he forthwith concluded must be Prester John. He met with the king, but, at first, did not succeed in reaching (A.D. 1490) the court of the King of Abyssinia, which was then in Shoa. This was the beginning of that connexion between the Abyssinians and the Portuguese, which continued for about one hundred and fifty years, but it was of little real importance, for above all, they had one leading idea, which was to bring over the Abyssinians to the Catholic faith. Peter Paza, who entered the country in 1633, actually prevailed on the Emperor, his bro-
...ther, and the nobles, publicly to declare their adhesion to the Church of Rome. 

The Jews, having pursued their proselyting practice with such pertinacity, they did not neglect to study the country itself, and, accordingly, it is to them we owe our first accounts of many parts of Abyssinia; and for some, they are the yet only authorities. A list of the principal works of the Portugeuse on Abyssinia given by the Jesuits, and the reader will see, in the compilation of Ludolf, and the abridgment of Tellez, how much we are indebted to these zealous and often very able men.

With the Christian religion, the Abyssinians received the Holy Scriptures, importing the book of Jonah, and this is known in the ancient Ethiopic version, made, according to Ludolf, from the Greek Septuagint, though nothing is known of the date of this version. As to the New Testament, (says Ludolf,) no entire copy has been brought to Europe. Mr. Bruce brought with him from Abyssinia a complete copy of the Scriptures in the Ethiopic language, and also a set of the Abyssinian Chronicles. The Abyssinians divide the Scriptures, which they have entire, differently from what we do, making four principal parts of the Old Testament, and mixing what we call the Canonical with the Apocryphal books. The New Testament is also divided into four parts, to which they add the Book of Revelations as a supplement. For other information respecting the Abyssinian liturgies, and the religious opinions of Ludolf, the reader is referred to his Christian Antiquities, pp. 424. 5. Ludolf denies the existence of the book of Enoch, because he had only seen a spurious copy. A knave who got possession of an Ethiopic book, wrote the name of Enoch upon a leaf of it, and this was the book that Ludolf saw. Bruce brought home three copies of the book of Enoch, one of which he gave to the Bodleian Library at Oxford. This book was originally written in Greek, but the original is lost—all but one large fragment. In the epistle of Jude reference is made to the prophecies of Enoch; and Mr. Bruce says, 'the quotation is word for word the same in the second chapter of the book.' This, however, will not prove the genuineness of the prophecies of Enoch, as Mr. Bruce has very well argued. An English translation of the book of Enoch was published by Dr. Lawrence, Oxford, 1822, 8vo.

The High Priest (or sole bishop) of Abyssinia is called Abuna, which signifies Our Father; and as Frumentius, the first bishop, received his appointment from the Patriarch of Alexandria, this dignity has, probably, always been a foreigner. When Mr. Salt was in Abyssinia (1810), the Patriarch of Alexandria had just sent a Greek as Abuna, or High Priest, who, unfortunately, died of an epidemic disease about six months after his arrival. His successor was sent to Alexandria to see if they could get a new one appointed. The King is the head of the Church. Polygamy, though allowed not by the ecclesiastical canon, is common enough in practice; and Mr. Salt mentions an instance of one gentleman who married twice or three times, and raised up a family almost as many as he pleases: the clergy, also, who are not monks, may marry, but only once. A second marriage renders them unworthy of their sacred office, according to the ancient canons. Circumcision, according to Bruce, is practised in Abyssinia.

It would appear, from what we know of the Abyssinian Church, that its priests, at present, are not well informed, nor are the people in general well acquainted with the principles of the Christian religion, though they may be Christians in name; yet some of their ceremonies are conducted with great decency, and very much resemble those of the Church of England. When Mr. Salt stood godfather to a boy who was baptized into the Christian faith, after naming the child, he was requested to say a prayer: God's blessing to the boy, Lord's Prayer, and to make such a form of prayers as those required by our own Church. The head priest then crossed the boy on the forehead, after dipping his hand into the chalice, and between the upper lip and the gums, bled a few drops in the name of the Father, Son, and Holy Ghost.

When Salt was at Chelicut, Lent was strictly observed for fifty-two days, and no flesh was eaten during this period, though fish and various dishes were always plentiful on the table. The coffee was allowed, but not the wine. Salt found this severe and protracted fast, in which they all seemed anxious to make up for lost time, by over-eating and drinking.

The Sacrament is also administered in Abyssinia, in a very decorous manner; and red-wine made of a grape, which is common in some parts of the country, is used on the occasion. Formerly, (says Mr. Salt,) if a man married more than one wife, he was excluded from participating in this rite, but wealth and power have imposed no such restriction as in Egypt. It is not forbidden unless she is manifestly guilty of adultery. The higher classes are subject to no rule, but what may be considered as imposed by the relatives of the male and female. The Abyssinians bury their dead immediately after washing and anointing him, though in some places, a deep grave is put by, the ground, the priests recite a form of prayer. Other strange ceremonies that follow are described by Salt.


ACACIA-TREE. See ROBINA. 

ACACIA, the name of a plant of the pea-tribe, mentioned by Dioscorides, as a useful astringent thorn, yielding a white transparent gum. The account given by this Greek author, mean greatly, accords so well with the gum-arabic trees of modern Egypt, that we can scarcely doubt their identity. Accordingly it is to these, and to others closely related to them, that the classical name is still applied.

Among the moderns, the Acacia is a very extensive genus of trees or shrub plants, inhabiting the tropical parts of both the Old and New World, and, in a very few instances only, extending into temperate latitudes: although over the entire length of Africa and most of the African islands, the species are spread in much abundance.

Some of the species produce catechu and gum-arabic; the bark of others yields a large quantity of tannin, which, in the form of an extract, is annually imported from Van Diemen's Land in considerable quantity; the species from which this substance is procured are chiefly A. decurrens and molissima. As objects of ornament they are usually of striking beauty; and it may be doubted whether, in the whole vegetable kingdom, equally brilliant colouring, and elegant foliage, combined with a more graceful aspect, are united in the same individuals.

Botanists are acquainted with nearly 300 species. Of these we shall mention only a few of the most interesting.

Flowers polygamous.

Calyx, with either four or five teeth.

Petals, either four or five; sometimes distinct from each other, sometimes adhiring in a monopetalous corolla.

Stamens varying in number from 10 to 50.

Pod not separating into many joints; juiceless, two-valved.

The species are extremely variable in the structure of their leaves and flowers. Some of them have true leaves only once or twice divided, with a multitude of cylindrical spikes, which grow two or three together.—A tree with a tolerably high and stout stem; found in mountainous place, in the East Indies, especially in Bengal and Coromandel. It is most commonly known as the Canar, or Catechu, or two to three inches long, quite flat, and of a narrow, oval figure. Its unripe pods and wood yield, by decoction, one of the sorts of catechu, or terra-japonica, of the shops. A powerful astringent substance, formerly thought to be a kind of earth. The other sorts of catechu is obtained from a kind of palm. [See ARECA.]
Acacia Arborescens, the gum-arabic tree.  (Roxb. Coromand. Pl. 149.) Spines growing in pairs. Branches and leaf-stalks downy. Leaves in from four to six divisions; leaflets in from ten to twenty oblong-linear, with a gland between the lowest, and often between the outermost divisions. Heads of flowers growing in threes upon stalks. Pod necklace-shaped.—An inhabitant of the East Indies, Arabia, and Abyssinia, where it forms a tree thirteen or fourteen feet high, of inoffensive appearance; easily recognised by its long, curved pods, which are divided into a number of round compressed joints, by means of contractions between the seeds. This is one of the plants that yield the useful substance called gum-arabic, which is procured by wounding the bark; after which the sap runs out, and hardens in transparent lumps, of various figures, very similar to the concretions found upon the bark of the cherry-tree in this country. Gum-arabic is also produced abundantly by some of the species nearly related to this, such as A. Nilotica, or ecor, found in Egypt; A. Ehrenbergii, a native of Dongola; A. tortilis, a common plant in the west interior of Africa. From this tree are said, by some, to be procured the pods called babilach, in the continental drug-shops; by others, however, they are referred rather to A. cinerraria, and some other species.

Acacia discolor, the purple-stemmed acacia. (De Cand. Prodr. ii. 468. Mimosa discolor, Bot. Rep.) Spines none. Leaves with about five pairs of pinnae; leaflets glaucous, tinged with purple, from nine to twelve couples, oval, smooth, acute, pale beneath; leaf-stalks glandular at the lower end, and covered with down, like the branches. Heads of flowers in long racemes, proceeding from the axil of the leaves.—A middle-sized tree, found in the southern parts of New Holland and in Van Diemen’s Land, where it, in common with many others of the same genus, is called Wattle. It appears better adapted than most other Australian species to support our winters; near London it succeeds perfectly well, all winter long, in the open air, wrapped round with mats, and it is to be presumed that there is no obstacle to its being almost naturalized in Devonshire and Cornwall and the west of Ireland. It is readily known by its bluish stems and leaves, which are slightly stained with dull purple, and form a strong contrast with its long, erect bunches of yellow blossoms.

Acacia pubeens, downy acacia.  (Hort. Kew. v. 467.) Spines none. Branches not angular, hairy. Leaves from three to ten pairs of pinnae; leaflets in from twelve to eighteen couples, linear, very narrow. Heads of flowers globose, stalked, arranged in long racemes.—A native of the east coast of New Holland. In this country it is one of the most beautiful green-house plants; if allowed to grow in the open air it attains the height of ten or twelve feet; and in January and February produces a vast abundance of yellow blossoms, which weigh down the slender graceful branches, and perfume the air with a weak but pleasant odour.

Acacia acanthophyllum, prickly-fruit ed acacia. (Willd. Sp., pl. iv 1065. Mimosa Julibrissin, Scorpol.) Spines none. Leaves with from eight to twelve pairs of pinnae; leaflets in about thirteen couples, half-oblong, acute, somewhat fringed, with a gland beneath the leaf. Heads of flowers on stalks at the angle of the leaf.—A native of Persia and of the Levant. Its specific name is Latinised from two Persian words—gul, a rose; and ebrashin, silk; by which it is known in the countries where it grows wild. There it becomes a small tree, remarkable for its light airy foliage, and for the great beauty of the clusters of lilac flowers, the long and slender stamens of which stream in the wind, and glitter in the sun, like a number of silken threads artificially fastened to the boughs. This species is now commonly cultivated in the warmer parts of Europe. In England it is seen trained against walls, where it succeeds indifferently well, flowering only occasionally so far north as the latitude of London. Its great enemy is the climate seems to be, not our winters, but the want of an intensely hot summer to prevent exuberant growth, and to ripen the shoots so perfectly, as to enable them to resist frost.

Acacia acanthophyllum, prickly-fruited acacia. (Willd. Enum. 1857.) Spines from the place of the stipules, spreading in pairs, and hooked. Leaf-stalks without either prickles or glands; leaves in from six to eight principal divisions; leaflets in from six to fifteen couples, oblong, downy. Heads of flowers in pairs, stalked. Pods compressed, plane, falcate, with each margin prickly.—A native of New Spain, where it forms a small tree, with flesh-coloured flowers. It was some years since introduced to the gardens of France, in the southern provinces of which it proves hardy. In this country it is not so capable of resisting frost as A. Julibrissin; whereas some of the New Holland species, notwithstanding it is marked as hardy in some of our garden catalogues. As its flowers have little beauty, it is very seldom cultivated.

The Blackwood of Van Diemen’s Land is the timber of acacia macracylon; and the asstringent jurema bark of Brazil is the produce of acacia jurema.

§ 2. Leaves pinnated in the young plant; in the old, consisting of nothing but the vertically detached leaf-stalks, and Per. Ind. 1904. About Per. Ind. 1904. About

Acacia decipiens, paradoxical acacia. (Hort. Kew. v. 465. Mimosa decipiens, Bot. Mag. t. 1745. Adiantrum trichocarpum, Burm, Fl. Ind. t. 66. F. & S.) Stipules spiny, deciduous. Phyllodia either triangular or trapezoidal; their midrib nearest the lowest side, and lengthened into a spine; a small glandular tooth on the upper edge. Flowers in nearly solitary
Phyllodia was a bush about five feet high, and with its roundish leaves, was a favourite plant with the ancients. The name is derived from Phyllon, a name given to a certain kind of flower, because of its large, rounded leaves. Phyllodia was also a popular flower in ancient Greece, and was often used in wreaths and garlands. It was a favourite flower of the goddess Athena, who was often depicted wearing a Phyllodia crown. The flower was also associated with fertility and prosperity, and was used in rituals and ceremonies.

Acacia Sophora, a fragrant acacia, was also a popular tree in ancient Greece. It was known for its beautiful flowers and sweet fragrance, and was often used in perfumes and incense. The tree was also valued for its timber, which was used in carpentry and shipbuilding. The name Sophora is derived from the Greek word for 'wise', and was given to the tree because of its medicinal properties.

Acacia Longifolia, a long-leaved acacia, was another popular tree in ancient Greece. It was known for its long, slender leaves and its ability to grow in arid conditions. The tree was also valued for its timber, which was used in shipbuilding and carpentry. The name Longifolia is derived from the Latin words for 'long' and 'leaf', and was given to the tree because of its long leaves.

Acacia is a genus of trees and shrubs that are commonly found in the Mediterranean region. They are known for their hardy nature and their ability to grow in arid conditions. The genus includes over 1,000 species, and is found throughout the world, from the Americas to Africa and Asia. The Acacia genus is often used in gardening and landscaping, and is valued for its beauty and its hardiness.
terms University, College, Gymnasium, School, according to the names by which they have been severally distinguished, than under our present head. On this point it is only necessary further to remark, that, from the application just mentioned, to professional training, it has been observed, more especially in England and the United States of America, to give the name of academic to those seminaries in which so many various branches of education are taught as to entitle them to rank, it may be thought, as a sort of minor university. In this sense, many of the principal towns in Scotland have their academies, which are merely great schools, such as in Germany would be called gymnasia, embracing in some cases both the languages and the sciences, but in general confined chiefly to the latter. In England, academies of a different rank, and commonly called academies; and the name is also frequently assumed by mere private boarding-schools, on however small a scale. The government institution at Woolwich for the instruction of military cadets is called the Royal Military Academy. It was founded in 1711, and is under the direction of the Board of Ordnance. There is also a Royal Naval Academy at Portsmouth, founded in 1722, under the direction of the Board of Admiralty. The Jewish seminaries for the highest branches of learning, in the different countries of Europe, have usually borne the name of academies. The same name has long been applied to schools of riding, of dancing, and of gymnastic exercises.

C. It is well known, many of those associations of the learned, which, in all material respects, resemble the academies that arose in Italy with the revival of letters, are, nevertheless, not known by that name. They are called not academies, but societies, associations, museums, lyricums, academies, &c. If they be generally connected as parts of a great whole, it might be desirable, notwithstanding this perplexing diversity of appellations, to review them all in the same article; but they are not, in fact, related either as ramifications from a common stem, or by any other principle uniting them into one community; and we shall therefore adopt the plan most convenient for the purposes of reference, of only noticing, under our present head, those of them that are designated academies, and distinguishing the rest under the other titles by which they happen to be distinguished.

I. ITALIAN ACADEMIES.—Italy, as we have said, was the first country in which literary and scientific academies were established on the modern form, and there they have always flourished in the greatest number. A writer of the name of Jarcinsus, who, in 1725, published at Leipzig an account of the Italian academies, enumerates nearly 600 as then existing. Scarcely a town is to be found without such an institution, and the principal of them is said to have been more. We shall notice a few of those that have been most celebrated. The first that deserves to be mentioned is the Platonic Academy, established at Florence about 1674, by Lorenzo de Medici. Its principal object was the study of the works of the ancients, which were afterwards the model of the Italian tongue, and the perusal and explanation of the poetry of Dante. Marsilius Ficinus, Petrus Miranda, Machiavel, Angelo Politian, and other persons remarkable for learning and genius, were among the early members of this association. The civil troubles of Florence occasioned the dispersion of its members in 1521. In 1560 was established at Naples, the first association for the cultivation of physical science, and the origin and model of many others in the different quarters of Europe. It was called the Academy Secretorum Naturae. It was, however, soon after abolished by the ecclesiastical authorities. To it succeeded the Academia dei Lynesi, founded at Rome, in 1669, by Prince Cesidio, of which Galileo was a member. Prince Cesidio died in 1632, and soon after the Academy was dissolved. Another of the same name was established at Rome in 1781, which still exists. But the most celebrated of the Italian academies is that named the Academy della Crusca, that was formed in 1843, in allusion to the origin of its institution, the purifying of the national tongue, and the sifting, as it were, of its flour from the bran. It was established at Florence in 1632, principally by the exertions of the poet Antonio Franceschi Grazzini, who is much celebrated for many curious and useful notes on the operations of the Academy della Crusca, first published under the title of Vocabolario degli Accademici della Crusca, at Venice, in 1 vol. folio, in 1612; but augmented, in the last edition (Florence, 1729–1738), to 6 vols. folio, is considered as the standard authority for the Italian language; and the writers from whose works it has been collected, or whom it recognizes as classics, such as Boccaccio, Machiavel, &c., are hence frequently denominated Autori Cruscani. The Academy della Crusca is now incorporated with the Accademia dei Lincei, the Academy delle Scienze, of Florence, and the Accademia dei Georgi, of Rome, and is called the Accademia dei Lincei. The Academy della Crusca, for the purposes of education, is divided into two sections: —the Academy della Crusca, for the cultivation of physical science, by the Cardinal Leopold de' Medici, brother of the Grand Duke Ferdinand II., in 1632. Another was first mentioned in the collection of experiments on the pressure of the air, the compressibility of water, on heat, sound, projectiles, light, and other subjects belonging to natural philosophy, was published in Italian by the Academy del Cimento in 1667, of which Masenbruck afterwards gave the world a Latin translation, with valuable notes. Many of the Italian academies are remarkable for the fantastic names by which they are designated. Of this, indeed, the Academy della Crusca is itself an example. And it seems to have borrowed the name from the Academy of Crete, mentioned by Pausanias, and also of those to the northward of it, "Ipse est potitus nec cogit," (It collects the finest flour of it,) from a previous society, established, soon after the revival of letters, at Pergamum, called the Academy degli Sposi, that is, the Academy of the Man-shall-shaun, founded by way of imitation of the Cyma, which requires to be thoroughly tossed up, and shaken free of its refuse, before its powers can be properly exerted. The emblem of this society was also a sieve, with the Latin motto, Eurus nitet (Shaken out it shines). There was a similar academy of the Smokey, of the Ramblers (Lungarini, &c.) The Latin name of the Academy della Crusca, we ought to observe, is the Academiæ Furfurariorum, that is, of the transistor-s. Some interesting information on the early Italian academies may be found in the 9th chapter of the Life of Galileo, in the Library of Useful Knowledge, and in Moreo's Polygraphia, and Tiraboschi's Storia della Letteratura Italiana, there referred to.

Among the existing academies of Italy that have not been mentioned above, the most important of the second kind is, the Royal Academy of Sciences and Belles Lettres of Naples, founded in 1779: it has published its Transactions, which contain many valuable papers on mathematical subjects, since 1788. The Hereculaneum Academy of Naples, founded by Charles, was also established in 1775, under the title of Academia del Cimento, and it has been followed by several others. The Academy of Buenese Antiquities at Cortona founded in 1726, and that at Florence founded in 1747, both of which have published valuable Transactions. There are also academies at Padua, Milan, Sienna, Verona, and Genoa, by all of which some volumes of Transactions have been printed. The Academy of Bologna was originally founded in 1698, by the government of that city, and was originally called the Accademia dei Geomiti, but its name was changed to that of the Academy del Cimento, from Clement XI., the then Pope. Its Transactions have been published under the title of Commentarii, since 1731. To this list we may add the Royal Academy del Cimento in allusion to its name, and a private association founded about the middle of the last century, by the young Lagrange, then, although not yet twenty years of age, holding the office of Professor of Mathematics in the Royal Artillery School of that city. The academy was first called the Accademia di Delcim, in 1759, and surprised the scientific world by some papers of great originality, to which the name of Lagrange was appended. The Turin Transactions, which continued for some years to be enriched by the contributions of this eminent
II. French Academies.—We shall not here notice the ancient society established, it is said, about the middle of the twelfth century, at Toulouse, for the cultivation of poetry, or, as it was then called, the Gay Science, although it has been sometimes designated an academy. An account of that, and of other institutions of a similar description, will be more fitly given under the head Troubadours.

The earliest of the French Academies, properly so called, is of much more recent date. It was founded in 1635, by Cardinal Richelieu, for the same object with that proposed by the Academy della Crusca,—the purification, regulation, and general improvement of the national tongue. This society, in imitation of its Italian model, published in 1694 the first edition of a French Dictionary, known by the name of the Dictionary of the Academy, to which it afterwards made many additions in successive reprints. This work, however, has scarcely attained the same authority with that of the Delaware academicians; partly owing, no doubt, to the comparative immaturity of the French language when it was thus attempted to restrain its further growth. The original number of the members of the Académie Française was forty, from whom were elected a director and a chancellor, or Secretary. The seat of the institution was at his house for life. It used to meet three times a week in a hall appropriated to its use in the Louvre. This constitution it continued to retain till the year 1793, when it was abolished, with most of the other establishments which had subsisted at different times in the Academy of Spain. In 1815 it was restored as part of the Institute, of which we shall presently give an account. The next of the French academies, in point of antiquity, is the Académie Royale des Jeux Floraux, or Fencing Society, which was held in the reign of Louis XIV., by Colbert, and consisted originally of a few members selected from the Académie Française, who used to meet weekly in the library of that minister, and to employ themselves in inventing designs for meadows and royal parks. It was intended for examining the paintings and sculptures proposed for the embellishment of Versailles, and discussing the manner in which the gardens of that palace should be laid out and the apartments decorated. They were called, and not improperly, if a reference is intended to their occupation, as well as to their numbers, Le Petite Académie, the little academy. Their place of meeting was afterwards changed to the same room in the Louvre in which the Académie Française assembled, and they then began to hold two sittings in the week, and to examine the works which were being sent in, upon a new and more extended foundation; and from this date it published every year a volume of memoirs, many of great value, till it was suppressed at the Revolution. It consisted, at the period of its suppression, of ten honorary members, ten pensioners, and twenty assistant members, the exclusion of several corresponding members. The Académie Royale des Sciences was originally established by Colbert in 1666, but was entirely remodelled in 1699. By the new constitution its researches were confined to the department of the physical sciences. The Académie des Sciences first began to publish its Transactions in 1666, and from 1699 a volume appeared regularly every year till the academy was suppressed in 1793. These three academies, together with the Lettres et Sciences et de Sculpture, which had been rather a school of painting than an association of cultivators of the art, were restored by the Directory in 1795, and united into what was called the National Institute. A new organization was given to this body in 1802, and it was finally remodelled in the form in which it still exists soon after the second restoration of the Bourbons in 1816. As now constituted, the Institute, or Académie Royale, consists of five divisions: the first, the Académie des Sciences; the second, the Academies des Inscriptions et Belles Lettres, composed of forty ordinary and sixty honorary members; the third, the Académie des Beaux Arts, composed of forty ordinary and thirty-six corresponding members; the fourth, the Académie des Sciences Morales et Politiques, composed of thirty members. Each class meets by itself once a week. Vacancies are filled by the votes of the members, subject to the approval of the king; and each of the regular members receives a salary of 1500 francs per annum. The meetings of all the classes are held in the hall which was formerly the Chapel of the College of the Four Nations, now called the Palais des Académies. The French Academy has, since its establishment, ranked as the very first of the scientific associations of Europe, the most illustrious of whose philosophers have usually been comprehended in the list of its members.

There is also in Paris the Académie Celtique, founded in 1697, and now called the Académie des Sciences de la Nature, which has published several volumes of interesting and important Memoires. There are likewise academies in many of the provincial capitals of France; among which the chief are those of Soissons (1675), of Nîmes (1689), of Angers (1685), of Lyons (1700), of Bordeaux (1703), of Caen (1705), of Montpellier (1706), of Béziers (1723), of Marseilles (1726), of Rochelle (1728), of Dijon (1736), of Toulouse (1740), of Rouen (1744), of Montauban (1744), of Amiens (1750), of Besançon (1732), of Châlons sur Marne (1732). Many of these institutions have attained considerable celebrity, and some of them have published their Transactions.

III. Spanish Academies.—A society for the cultivation of physical science, under the title of Academia Naturalis de Madrid, was established in 1617. The model of the old Academy Secretorum Nature, already mentioned as having been founded at Naples in the middle of the preceding century. Of the existing Spanish academies the most important are the following:—The Royal Academy of Science, Agriculture, Arts, Commerce, and the like was established at Madrid in 1652, and has for its object the improvement and publication of the sciences. It has published a Dictionary, under the title of Diccionario de la Lengua Castellana, six vols. fol., 1726-1739. The Royal Academy of Spanish History: this commenced as a private association at Madrid in 1730, but was taken under the patronage of the crown in 1733. It has monthly meetings, and has nothing but the purpose of preserving the history of Spain, and publishing, through the exertions of the Duke of Escalona, a Geographical Dictionary of Spain. There are also an Academy of History and Geography at Valladolid, and a Literary Academy at Seville, both founded in 1753.

IV. Portuguese Academies.—An Academy of Portuguese History was established at Lisbon in 1720, by King John V., consisting of a director, four censors, a secretary, and fifty members. But the principal Portuguese academy is the Academy of Science, Agriculture, Arts, Commerce, and the like, founded in 1663 by Queen Crusca, and called, in 1767, the Portuguese Academy of Science. This institution consists of twenty-four socios veteranos, or acting members, and thirty-six honorary and foreign associates. It is literally endowed by the government, and possesses a library, a museum, an observatory, and a printing-press. The members are divided into three classes:—1. that of natural science; 2. that of mathematics; and 3. that of Portuguese literature. It has published several volumes of Transactions in different series; that entitled De Agricultura, commencing in 1787; of Sciences, in 1792; and das Ciências e Belas Letras, in 1797. There is also a Geographical Academy at Lisbon, established in 1799, which has published a map of Portugal.

V. Austrian Academies.—Of these the most ancient is the Academia Academica in Cordoue, established in 1567, and during the reign of the Emperor Leopold I. It assumed the name of the Academia Cesario-Leopoldina. Its Transactions were at first published in separate treatises, but since 1684 they have appeared in volumes, known as the Acta et Varia Academiae Historicorum et Curiosorum. A history of this academy was published by Bichler, at Halle, in 1756. The Academy of Arts and Sciences of Vienna was founded in 1755. In 1754 it was established in the same city an Academy for the cultivation of the Oriental Languages, and in 1775 its establishment was increased by the establishment of a new Academy, which distributes every year three prize medals of the value of fifty guilders each.

VI. Prussian Academies.—The Royal Academy of Science and Belles Lettres of Berlin has long been one of the most eminent among the learned societies of Europe. It
was established in 1700, by Frederick I., who appointed the celebrated Leibnitz its first president. The first volume of its Transactions appeared in 1710, under the title of "Acta Mercurii," and other volumes, following at intervals of three or four years, till the accession of Frederick the Great in 1740, who, in 1744, took it under his special protection, and proceeded to give it a new organization, with the view of extending its usefulness, and raising it a little above the rank that it had hitherto enjoyed. Maupertuis was appointed its president, and the academy was divided into four classes:—1. The physical class, for natural science; 2. the mathematical class, including astronomy; 3. the philosophical, consisting of the history of philosophy; and 4. the class of the history of sciences. Each class chooses its own director, who continues in office for life. Vacancies are also filled up by the votes of the members, subject to the approval of the king. Since 1746, a volume of the Transactions has appeared regularly every year. They were to be in French; but are now published in German. The old Memoirs extend to the year 1771; after which date they are called the "Neuvorh Meritoures," down to 1757; with which year a third series commenced. A history of this academy was published in 1752. In 1798, the Royal Library and Cabinet of Arts were united with, and placed under the superintendence of, the academy: they are now separated. In 1754, was established the Elector of Menzio, the Electoral Academy at Erfurt, for the publication of the useful sciences. Its Transactions were originally published in Latin, under the title of Acta Academiae Electoralis Magnutae Scientiarum Utilitain; but they have of late appeared in German.

VII. OTHER GERMAN ACADEMIES.—Of these, the principal is the Academy of Sciences, of which, as we have just before seen, it is impossible to give a complete view, but a condensed abstract of the Transactions of the two foundations, which have been published, under the title of Acta Academiae Theodori-Palatiae—those of the last, under that of Ephemerides Societatis Meteorologicae Palatinate; and the Academy of Saxian History, established at Tübingen, in Wirtemberg.

VIII. SWEDISH AND DANISH ACADEMIES.—The Royal Academy of Sciences, of Stockholm, was originally a private association, founded by Linnaeus, and a few of his friends, in 1739, and was not incorporated by the Crown till two years afterwards. Its Transactions appear in quarterly parts, and the first octavo volume of its memorials, from 1739 to 1779, are called the Old Transactions; those which have appeared since, the New. They are in Swedish, but have also been translated into German. The academy maintains in the person of experimen- tal philosophy, who, with the two secretaries, is paid from the property which the society has acquired by legacies and donations. From the same source, it distributes every year several gold medals and prizes in money. Stockholm also possesses an Academy of the Belles Lettres, founded in 1753; and an institution denominated the Literary Academy of Sweden, founded in 1786. The object of the latter is the cultivation and improvement of the national language. There is an Academy for the investigation of Northern Antiquities, upon which has published a number of Memoirs. The Royal Academy of Sciences of Copenhagen was founded by the Count of Holstein in 1742, and incorporated the following year. Its Transactions appear in Danish; but they have been partly translated into Latin.

IX. ACADEMIES IN RUSSIA AND POLAND.—The Imperial Academy of Petersburgh, like most of the valuable institutions of Russia, originated in the bold and contriving mind of Peter the Great. That monarch, however, did not live to witness the existence of the scheme; and which is said to have been suggested to him by his inspection of the academies of France, when in that country in 1717, and to have been matured by consultations with Christian Wolff and Leibnitz. But immediately after his death, on the 22d of July, 1725, his successor, Peter II., executed the intentions of his deceased husband; and the Academy was forthwith established, and held its first sitting in December of that year. Some of the most distinguished foreign mathematicians and philosophers of the day were wisely selected by the Empress to grace the new foundation, and induced by liberal salaries to accept places in it. In the title of professor, its three first professors were V. W. Leibnitz, Daniel Bernouilli, and others. These professors are fifteen in all, besides a president and a director. There are also four adjuncts, from whom vacancies among the professors are always supplied, and who, till thus provided for, are permitted to attend the meetings of the Academy. In its earlier days this institution underwent various fluctuations in reputation and efficiency, according as it happened to be patronized or neglected by the reigning sovereign; but since the accession, in 1741, of the Empress Elizabeth, it has continued to flourish, and has acquired a liberal spirit, and is now, with the object it had in view, so essentially reformed, that it has generally maintained a high character. Its annual revenue is considerable; and one important service, which it has thus been enabled to render, has been the exploration of various portions of the Russian empire, by means of the travellers Pallas, Stolberg, Reinecke, and others, whom it has sent out for that purpose. Its Transactions, down to the year 1747, inclusive, forming fourteen volumes, are in Latin, and are entitled Commentarii Academiæ Petropolitanae. Since then, they are published as Acta Academiæ Petropolitanae; but, in 1783, one volume more, and, down to 1777, likewise in Latin, are entitled Acta Academiæ Petropolitanae.

The Imperial Academy possesses a library of some extent, which contains a considerable number of oriental manuscripts, as well as valuable collections of medals and of specimens of rare and valuable scientific instruments, and the like. In the Académie Francaise, having for its object the improvement of the Russian language, was founded at Petersburg: and was soon after united with the Imperial Academy. A Royal Academy was established at Moscow, in 1733.

Among the other European academies, may be mentioned the Medical Academy of Geneva, founded in 1718; the Académie des Sciences et des Belles Lettres of Brussels, which has published its Transactions, under the title of Acta Academiae Scientiarum, since the year 1717; and the institution of the same name at Flushing, whose Transactions have also appeared. In the British dominions there are no associations for the cultivation of science or learning, which have this name, except the Royal Irish Academy, founded in 1783; and the Royal Society. The Royal Society has published four volumes, from 1753 to 1757. In North America, as in England, such institutions are, for the most part, called Societies, and will be noticed under that term. The following are the only academies which we find enumerated in the Encyclopaedia Americana, published in 1829:—the American Academy of Arts and Sciences, established at Boston in 1780, which had in 1829 published four volumes of Transactions; the Connecticut Academy of Arts and Sciences, founded at Newhaven in 1779, which had then published one volume; and the Academy of Natural Science, founded at Philadelphia in 1815, of whose Memoirs five volumes had appeared.

Academy is also the name usually given, both in this country and on the Continent, to an institution established for the purpose of conferring upon individuals some valuable distinction, by means of an endowment, for painting, sculpture, architecture, and music. Such institutions commonly partake both of the character of academies, in the sense already explained, and of schools or colleges, consisting, on the one hand, of an association of amateurs who have united for the purpose of diffusing a taste for the arts among the public generally, by publications, exhibitions, or any other means which may be made available for that end; and, on the other, of an establishment, having for its object the instruction of youth in the practice of some one or more of the branches in question. The latter object is effected by lectures, by prescribed tasks, and by the distribution of prizes and honours. Societies of painters, for the promotion and protection of their art, are called academies; and the academies in France, in Italy, and elsewhere, are in the hallowed mémoire of those of Venice are recorded to have formed themselves into an association of this description. A few years afterwards,—namely, in 1350,—those of Florence did the same. In 1391 the artists of Paris followed the example of their Lu...
lians brethren, and founded what they called the Academy of St. Luke. This establishment was formally recognized by Charles VII. in 1459; and the privileges which he conferred upon it were confirmed by Henry VIII. in 1584. In 1613 the Academy of St. Luke formed a union with the Society of Sculptors; and the institution subsisted till the Revolution. Towards the middle of the seventeenth century, however, it had been thrown into the shade by a new association, founded by Lebrun, Cornelle, and several others of the painters licensed by the king. A royal edict, in favour of this association, was issued in the beginning of the year 1648; and in 1655 letters-patent were granted to it by Cardinal Richelieu. Some time after, it was allowed to hold a subscription in the Louvre; and, finally, in 1663, during the administration of Colbert, there was settled upon it a revenue of 4000 livres annually. In 1671, an Academy of Architecture was established by the same minister. These two establishments were abolished with the other academies at the Revolution; but they have since been revived, and now form together the fourth division of the Institute, under the name of the Académie des Beaux Arts. It consists of forty-one members, eight associates, and six corresponding members. A branch of this academy still subsists at Rome, which was established in 1666 by Louis XIV., with a revenue of 35,000 livres. There are also Academies of the Fine Arts in many of the chief provincial towns of France. Of the Italian academies of this description, that of San Luca at Rome was established in 1593, by the eminent painter Frederic Zuccaro, who erected an elegant building for it at his own expense. There are others at Milan, Bologna, Parma, and many of the other principal towns. The oldest German Academy of the Fine Arts is that of Nuremberg, founded by Joachim Sandrart, an artist of great ability, in 1662. That of Dresden was established in 1697, and was united with those of Leipzick and Meissen in 1764, when it received the form which it still retains. There are others at Berlin, at Vienna, at Munchen, at Weimar, and in various other cities. In Spain an Academy of Painting and Sculpture was established at Madrid in 1753. At Amsterdam, Antwerp, and Brussels, there are similar institutions. The Academy of the Fine Arts at Stockholm was established, in 1733, principally by the exertions of the celebrated Charles Gustavus, Count de Tessin; and that of Copenhagen in 1738, though it was not incorporated till 1754. To this institution the famous sculptor Thormadsen was indebted for his early education. The Académie Imperiale des Beaux Arts of Petersburg was founded in 1765 by the Empress Catherine II., who endowed it with a considerable revenue. It consists of six professors of painting, sculpture, and architecture, with an adjunct, or assistant, to each, twenty-five honorary members, six councillors, a president, three rectors, and three adjuncts to the rectors. This institution has greatly contributed to the introduction and dissemination of a taste for the arts in Russia, by the pupils whom it has sent out and supported during their studies in foreign countries. A letter, printed by Steele in the 555th No. of the Spectator (the last of the original series), speaks of an Academy of Painting, then (1712) lately established in London. Sir Godfrey Kneller is mentioned as its president. This institution, however, probably soon fell into decay. The present Royal Academy originated in an association of painters, who obtained a charter, in 1765, under the title of the Incorporated Society of Artists of Great Britain. This society, however, was soon after broken up by disputes among its members; and in 1768 the Royal Academy of Arts was incorporated in its stead. It consists of forty artists bearing the title of academicians, of eighteen associates, of six associate engravers, and of three or four individuals of distinction, under the name of honorary members. From the academicians are selected the professors of painting, of sculpture, of architecture, and of perspective; and there is also a professor of anatomy, who is commonly a member of the medical profession. Nine of the academicians are likewise appointed annually to officiate in setting the models, and otherwise superintending the progress of the students. The king is the patron of this institution; but its funds are, we believe, entirely derived from the money paid by the public for admission to the exhibition, which takes place every year, in the months of May and June. A branch of the English Royal Academy was established some years ago at Rome. The Edinburgh Royal Academy of Painting was founded in 1754. A similar institution has recently been established in Dublin, under the title of the Royal Hibernian Academy. An Academy of Ancient Music was established in London so early as the year 1710; but a disagreement among its members occasioned its dissolution after it had existed above twenty years. Some time after this the Royal Academy of Music was instituted, with Handel at its head, and for ten years, during which the operas of that great composer were performed under its superintendence in the Haymarket Theatre, enjoyed splendid success. But discord here also came at length to divide and disperse the professors of harmony; and in the year 1729 the institution was broken up. A new Royal Academy of Music, which holds its meetings in a hall in Tenerden-street, was established in 1822. The French Opera, it may be added, is styled the Académie de Musique.

ACADEMIA, by the French called ACADEMIE, is the genuine Indian name of the present province of Nova Scotia. The chief river of Nova Scotia is still called Shabad-Acadie, or the river of Acadia. [See NOVA SCOTIA.]

ACADEMIA PHIL.-A Greek word, signifying nettles. These animals form the third class of Baron Cuvier’s zoophytes. Many of them are popularly named sea-nettles, from their causing, when touched, a disagreeable sensation similar to the sting of a nettle. Their form is always circular and radiated. There is only one opening into the body, which serves both for the mouth and the vent, and a single cavity which is at once guttul, stomach, and intestines; so that some writers have represented them as being all stomach.

**Fixca Acet-**Alcyonium mammillorum (Ellis). Actinia sociata (Ellis).

**Fixca Acaelelum—**Rhizostoma cereola (Cuvier).
These animals have been arranged in three orders—1. fixed, 2. free, and 3. hydrostatic.

I. The fixed (Acatephae stabiles) can at pleasure either attach themselves to stones or other objects in the sea, or creep and swim about on the waves. The Actiniae or sea anemones, the Zoarcha, and the Lucernaria, belong to this order.

II. The free (Acatepho liberens) are not found attached to any object, but always floating about in the water. The Medusa belong to this order.

III. The hydrostatic (Acantho hydrostatica) are thus named on account of one or more air-vessels, by means of which the animal can raise or sink themselves in the water. Their mouths have not been discovered. The order comprehends the Physaliae and the Physophorae.

In the last edition of the Régne Animal, Cuvier makes only two orders—1. The simple (Acatephae simplices); and, 2. The hydrostatic.

M. Eschholz, of Berlin, has recently published an excellent work on these animals, of which we shall take advantage in describing the several orders.

ACANTHACEAE, a tribe of plants forming one of the natural orders in the Monopetalous division of Dicotyledons or Exogenous Vegetation. (See Dicotyledones and Exogène.) Its name is derived from the genus Acanthus, which has been considered characteristic of the whole tribe. The plants of which it is composed are either altogether of an herbaceous nature, or shrubby in a slight degree only; they are extremely common in every tropical country, where they may be considered to occupy the place of the mints, dead-nettles, thymes, and sages of Europe; a very few are found beyond the limits of the tropics. Many of the species are mere weeds; others bear handsome flowers with gaudy colours, but seldom with any odour; a very small number has been occasionally employed medicinally as emollients or diuretics.

The roots of Acanthaceae are either annual or perennial. The stems are usually four-cornered when young, but afterwards become nearly round; their inside is occupied by a large proportion of pith, which is enclosed in a thin layer of imperfectly formed wood; and at each joint there is a slight tumour with an articulation, by which they are readily known from both Scrophulariæ and Verbascææ. Their flowers are often enclosed within large, leafy, imbricately jointed calyces; the five petals are united at the base. The corolla (3) is monopetalous and irregular. The stamens (4) are either two, or four, but in the latter case are of unequal lengths. The pistil (6) is superior and surmounted. The seed-vessel (5) contains two cells, which burst when ripe, often with elasticity, and expose a few roundish seeds hanging to the cells by curious-hooked processes.

The stems of all the species emit roots very readily from their tunnied articulations; on which account gardeners universally increase them by cuttings of the full-grown branches. They are always easy to cultivate, provided they are not kept in too cold or too dry a situation. The annual kinds freely produce seeds, by which they are readily multiplied.

The most common genera are Justicia, Acanthus, Ruelia, Thunbergia, Barleria, and Eranthemum, which see.

For further information, see Brown's Prodromus Florae Novae Hollandiae—Burtt's Orbis Naturae—Lindley's The Natural System—and, above all, Nees's 4 Esbenck's Exhibition, in the third volume of Dr. Wallich's Planter Analytica variarum.

ACANTHION, in Zoology, a genus of Rodentia, established by M. P. Cuvier, and embracing two species, which are only known, at present, by their osteology. In the number and form of their teeth, these animals agree in all respects with the common porcupine, from which, indeed, they only differ in the general form or outline of the cranium, and the comparative development of the bones of the face and skull; characters which have no very assignable influence upon the habits and economy of animal life, and which will, probably, be merged in others of greater importance, when we come to be better acquainted with the species in question. Indeed we have introduced the present article principally for the purpose of attracting the attention of travellers and residents in our Indian Colonies; many of whom have daily opportunities of elucidating this and other obscure subjects in zoology, and only require to be informed of its wants to render the most essential service to the science.

To guide observers who may have an opportunity of pursuing this inquiry, we have engraved (fig. 1) the skull of a species of porcupine found from Java by the French traveller, Duvannez, and figured by M. F. Cuvier, in the ninth volume of the Mémories du Museum, as the type of his genus Acanthion.

Fig. 2. represents the skull of the common Italian porcupine, for the purpose of comparison. The principal differences which these skulls present, when compared with one another, consist in the surface of the forehead being nearly flat in the acanthion, instead of forming a spherical elevation as in the porcupine; and in the nasal bones being of much smaller dimensions in the former than in the latter animal. The sense of smell in the latter appears to be less acute in the Javanese porcupine than in that of Europe and Africa; but it has the region of the brain comparatively larger. M. Cuvier reckons two species:—

1. The Acanthion Javanicum, found upon the skull already mentioned, as having been sent from Java by M. Duvannez. This is, probably, the Babi-lando, mentioned in Marsden's History of Sumatra, and which that author identifies with the Hypotrix Macroura of Linnæus, a species equally obscure. This animal is represented as having five toes on each foot, the body covered with small spines, and a long tail, terminating in a thick tuft, of which the spines are knotted, and spring out of one another like grains of rice.

2. The Acanthion Daubentoni, founded upon a skeleton formerly described by Daubenton, but which he mistook for that of the common porcupine. The locality from which this skeleton was obtained is not exactly known; but there is reason to believe that it was brought from some part of Africa. It may, perhaps, belong to the bacuriated porcupine, which has been lately found to inhabit the Island of Fernando Po; and which, to judge from the external appearance of the living specimen formerly possessed by the Zoological Society, appears to have all the characteristic marks which M. F. Cuvier assigns to the genus Acanthion.

It may be observed, in conclusion, that, besides the common porcupine (which inhabits every part of the Indian Continent, as well as Africa and the South of Europe), the large islands of Borneo, Sumatra, and Java, the Malay Peninsula, and probably other parts of Eastern Asia, contain three or four different but closely allied species, of which we have, at present, but a very vague and confused account.
**Acanthophis** in Zoology, a genus of venomous serpents, allied to the vipers, but distinguished by having a single series of plates beneath the tail, excepting towards the extreme extremity, where they are, in some cases, separated into two small rows. The bodies and tails of these animals are elongated and cylindrical; their heads round, obtuse, rather prominent over the eyes, and covered in front with nine or ten polygonal plates. The back and upper surface of the tail are covered with reticulated scales of a rhomboidal form: the breast and belly are covered with single transverse plates; as is likewise the tail, excepting towards the very extremity, which is sometimes furnished with a double row of plates, as in the common viper. The tail is terminated by a little spur, or horny excrescence, which has suggested the name of Acanthophis (that is, thorn or spur snake), for this genus. This, however, is a very secondary characteristic, and of little use in distinguishing these animals; since it exists equally in many other species of very different genera, such as the collared, and the black and white snakes, and even in the common viper. It springs out of the very end of the tail, and does not appear to be of the same utility as the two horns which grow upon each side of the anus in the pythons and boas, and which being retractile, or capable of being erected and depressed at will, execute important functions in the economy of these animals.

![Tail of the Acanthophis.]

The head of the acanthophis is broad and compressed, the mouth capable of great distension, and furnished on each side, besides the retractile poison-fangs common to all the family of truly venomous serpents, with a double row of sharp, curved teeth. The species of this genus are of small size, reside on the surface of the dry land, and feed upon frogs, lizards, and small mammals. They are viviparous, and secrete themselves in rat holes, or beneath the roots of trees; never strange or crush their prey by coiling themselves round its body, but expect a more speedy and certain victory from the deadly effects of their poison. The most anciently known species is,—

**The Acanthophis Ceratinus**, first described by Merrem, and so named from the general similarity which it bears, at first sight, to the cerastes, or horned viper, in its short body, large flat head, and eyes surmounted by prominent scales.

![Acanthophis ceratinus.]

The length of this species is about fifteen inches, of which the tail measures rather more than a fifth part; the body is thick in proportion to its length, having a circumference of two inches and a half in the middle, from whence it gradually tapers towards either extremity. The colour is a pearly-grey above, with obscure transverse dusky or bluish undulations beneath, pale yellow brown, with a small transverse oval black spot on the edge of every abdominal plate; and, in the middle, a similar range of spots from the vent to the end of the tail. The tail itself is cylindrical on the upper surface, and the upper surface of the spur, if any, is extremely sharp-pointed, compressed, and slightly bent upwards. The native country of this species is unknown; at least Merrem, who first described it, was ignorant of the country from which his specimen was obtained, and it does not appear to be indigenous to any country.

**The Acanthophis Brownii** is briefly described by Dr. Leach, and figured in the first volume of the Naturalist's Miscellany. The specific name is given out of compliment to Mr. Robert Brown, the celebrated botanist, from whose Quadrature of the Earth, and Zoology, he was indebted for many of the facts. The body is said to be of a uniform dark brown, the under lip whitish, the upper with a transverse groove in front, the tail small and rather abruptly contracted at its junction with the body, and the apex compressed. Such being the additional fact that it is an inhabitant of New Holland, is the very meagre account of this serpent, supplied by Dr. Leach. Mr. Peter Cunningham, however, in his entertaining publication on the present state of New South Wales, informs us, that it is the most venomous serpent of that colony; and suspects that this and a kindred species, of a light orange colour, are male and female, as they have been found to inhabit the same hole. He relates a remarkable fact proving the tenacity of life of these animals. Two individuals, a male and female, were discovered by the son of a sportsman: the black one was killed, and the head completely severed from the body, but the female escaped into the hole; upwards of ten minutes afterwards one of the dogs, in hunting about where the snake had been killed, was struck in the foot by the head which had been cut off, and shortly after died in the most dreadful convulsions.

**Acanthopterygium**, in Zoology, one of the three primary grand divisions, or natural orders, of fishes, which Cuvier has finally established, or restored in his Histoire Naturelle des Poisons. (Natural History of Fishes.) This great naturalist has divided fishes into three orders,—Chondropterygi (from χόνδρος cartilage, and πτέρυγα a wing or fin), or Cartilaginous fishes, without a bony exoskeleton; and Bonypterygi (from βόσκον soft, &c.) fishes with bony skeletons, indeed, but with soft articular radii in the dorsal fins. These three grand divisions, founded upon natural and intelligible principles, are characterized by modifications of organic structure, which exercise an obvious and important influence upon the habits and economy of these animals, were first of all recognized by Cuvier, and are mentioned in his description of the celebrated Dr. Merrem, who was the first to describe this genus; and these naturalists were the earliest in the attempt to give a systematic form to zoology, and to raise this branch of knowledge to the rank and importance of a Science, by applying to its investigation the principles of the inductive philosophy. The system which these great men had left complete and imperfect, a thing unavoidable in first attempts, was further developed by the celebrated Arndt, in whose hands the three orders above-mentioned became co-ordinate divisions, together with the Brachiostegi, since suppressed by Baron Cuvier. After undergoing various changes in the hands of intermediate zoologists, and being even discarded altogether by the school of Linnaeus, the system of Arndt is again triumphant; having been lately restored by M. Cuvier, who, after many years devoted to the study of this branch of zoology, and after various attempts to form a system of his own, finally acknowledges that it is the only arrangement conformable to the actual phenomena which we observe among these animals. M. Cuvier divides the acanthopterygious fishes into three main natural families, which he calls after the names of their typical or most common genera; but which he has failed to distinguish by exclusive and unequivocal characters. The imperfect state in which he has left his Histoire Naturelle des Poisons is not the least lamented among the weighty losses which the scientific world has sustained by the recent death of this truly great man.

**Acantu'rus** (a Greek compound signifying Thorn tail), in Zoology, a genus of Acanthopterygious Fishes, established by Bloch, and adopted by M. Cuvier, and afterwards by subsequent writers. This genus, separated from the Chetodonts of Linnaeus, contains, at present, a great number of species, many of which are remarkable for the beauty of their external forms, and the variety of their colours. They are distinguished from proximate genera by the form of the body and tail, which are exceedingly compressed;—so much so,
that the depth of the body, measured from the dorsal to
the pectoral fin, is always equal to, and often exceeds, its
length from head to tail,—by their trenchant teeth, denti-
culated like a very fine comb; but above all, by the move-
able spines, edged and sharp like a lancet, with which
they are armed on each side of the tail, and with which
they inflict dangerous wounds upon the hands of those

[Cheilodora Chingiensis. Bloch.]

who touch them injudiciously. It is this circumstance that
has acquired for the Acanthuri the name of 'Doctors', by
which they are well known to the English sailors and colo-
nists. These animals have the mouth small, and the muzzle
rather advanced: they are among the small number of
fishes which live entirely upon vegetable substances, feeding
only upon algae, fuel, and other marine plants; their intes-
tinal canal is, consequently, longer and more complicated
than in other species, and their flesh has a peculiar flavour,
very different from that of the piscivorous genera. The
dangerous weapons with which Nature has provided these
otherwise harmless fishes, are well calculated to defend them
from the attacks of the ravenous enemies which every where
surround them. As they are not obliged to resort to rapine
for procuring food, they are by nature inclined to peace, and
never voluntarily commence an attack; but they defend
themselves with courage and success against the largest of
their assailants. Their lancets, also, are placed in the very
situation in which, above all others, they are most efficient
and dangerous; not only because the greatest strength of
fishes lies in the tail, but likewise because it is in this quarter
that their enemies are at once most likely to make the
attack, and least prepared to expect resistance. The acan-
thures abound in all the tropical seas, both of the East and
West Indies; they are never known to advance beyond the
tropics, and are, consequently, unknown in the more temper-
rated latitudes.

ACANTHUS (in Architecture). The name by which
the broad ruffled leaf used in the enrichment of the Corin-
thian capital is known. It is thus called because of its
general resemblance to the leaves of a species of this
plant, or perhaps because of a pretty traditional story
which the Roman author Vitruvius tells of the fancied or-
gin of the Corinthian capital, in which the leaves are said
to be imitated from those of the acanthus. (See CAPIT.
CORINTH.) The same leaf, however, is commonly used
in architectural and sculptural enrichments generally; in
the enrichment of modillions, of mouldings, and of vases, as
well as of foliated capitals; and we gather from Virgil, that
the acanthus was by the ancients also employed as an orna-
ment in embroidery. In the first book of the Eclogae, verse 45, he describes two beautiful beechn
leaves, on which was carved the scene of Orpheus enchanting
the trees, with 'the soft acanthus folded round the handles.'

The application of the branck-ursine acanthus (see next
article) to sculptural enrichment is further illustrated in the
following passages:—Theocritus, describing a cup of Eto-
lian manufacture, says, 'the plant acanthus is expanded
all round the cup;' and Ovid (Met. 13. v. 701.) represents a

vease of bronze as being adorned on the outside with a my-
thological story, and the border above this figured portion as
covered with acanthus leaves wrought in gold. Now of
these two modes of applying it, as well as of that described
by Virgil in his third eclogue, we have very many instances
in ancient vases still extant.

Athenaeus relates that, in the splendid procession or-
dained to convey the corpse of Alexander the Great to its
final destination in Egypt, the coffin was placed in a car,
which was adorned with a small colonnade of golden pillars,
and a golden acanthus was set at intervals between the
columns.

Pliny the elder, in his Natural History, describes the
acanthus in such a manner that it can only be recognized
in the branck-ursine; and his nephew, in speaking of the
successful cultivation of the same plant as an ornament to
his garden, leaves no doubt that the branck-ursine is identi-
cal with the common architectural and sculptural acanthus.

This ornament, in the ancient Greek and Roman models,
is very characteristic of the styles of architectural enrich-
ment of those nations; in the Roman it is full and somewhat
luxuriant, and in the Greek more restrained, but simple and
graceful.

ACANTHUS. Under this classical name have been
described, by ancient authors, at least three totally different
plants. Firstly, a prickly tree with smooth evergreen leaves,
and small yellow-saffron-coloured berries, frequently alluded
to by Virgil; this is conjectured to have been the Holly.
Secondly, a prickly Egyptian tree, described by Theo-
 crus as having pods like those of a bean; it is prob-
able that this was the Acantharabica (see Acanthus).
Thirdly, a herb mentioned by Dioscorides, with broad, prickly
leaves, which perish at the approach of winter, and again
sprout forth with the return of spring. It is said that the
idea of the Corinthian capital of Greek columns was taken
from some of the leaves of this acanthus. To this latter
plant the name is now applied. The word, in all cases,
alludes to the prickly nature of the leaves or stems.

In modern botany, Acanthus is a genus of herbaceous
plants found in the south of Europe, Asia Minor, and India,
belonging to the natural order Acanthaceae.

G E N E R I C C H A R A C T E R.

Calyx in four divisions, of which the upper and lower
are much larger than the other two.
Corolla one-sided; with three lobes; no trace of an upper
lip is found.
Stamens four, in two lengths; anthers never containing
more than one cell, fringed, the upper ones erect, the
lower horizontal.
Seed-vessel two-celled, compressed, four-seeded, with
sides of the texture of paper.

Flowers growing in a terminal leafless spike, having at
their base three floral leaves, of which the intermediate one
is fringed with bristles.

The commonest species is Acanthus mollis, or Branch-
urus, a native of many parts of the South of Europe, grow-
ing in shady moist places, among bushes. Its stem is
about two feet high, and is covered from the middle to the
top with fine large white flowers, slightly tinged with yel-
low. The leaves are large, soft, deeply cut, hairy, and
shining, and surround the lower part only of the stem.
Both the leaves and the roots, which are perennial, abound
in mucilage, which has caused them to be substituted in
domestic medicine for the marsh-mallow. It is this species
which is usually supposed to have given rise to the notion
of the Grecian capital. But it appears, from the investiga-
tion of Dr. Sibthorp, that it is no where to be found, either
in the Greek islands, or in any part of the Peloponnesus;
and that the plant which Dioscorides must have meant was
Acacá is but poorly built, and is a most disagreeable and unhealthy place. Lying within the torrid zone, and surrounded by mountains, it is intensely hot, and the inhabitants, particularly new comers, are liable to dangerous fevers. Some time back an opening was cut through the rocks on the west to let in the sea-breeze, but a dirty swamp on the east side of the town probably still remains undrained, and is one of the sources of the annual fevers. The city of Acacá, in the interior, communicates with the Pacific by the town of Acapulco, which once had a considerable trade, particularly with Manilla, the capital of Manilla, or Luzon, one of the Philippine islands. Under the Spanish dominion a vessel of the largest size used annually to leave Acapulco for Manilla about February or March, loaded with commodities and specie; and when the English were at war with the Spaniards, the Manilla ships were carefully looked after as a rich booty. The vessel returned to Acapulco in August, carrying back print calicos, coarse cotton shirts, porcelain, Chinese jewellery, &c. Its arrival was the signal for a great concourse of merchants to Acapulco, who swelled the population for the time to about 9000. The monopoly enjoyed by Acapulco while under the dominion of Spain being now abolished, the India and China trade has shifted to the ports of Sam Blas, Mazatlan, and Guaymas; and though its prosperity necessarily suffered by such removal, Mr. Ward, in his Mexico, states that its commerce is again recovering. The present number of inhabitants is stated at about 4000, who are principally people of colour. Its exports are cochineal, indigo, silver, and some skins. [See Dictionnaire Géograph. Universal.]

ACA'RIDES, a division of ARA'CHNIDES, which comprehends the small spider-like animals popularly termed mites (Acari), as well as water-mites and ticks: some of these are wanderers on land or in water; others are fixed upon various animals, whose blood or humours they suck, and even insinuate themselves beneath the skin, and often multiply prodigiously.

These minute animals are not considered by modern naturalists to rank among insects, on account of their structure being very different, and from this cause, in some cases, like spiders, eight feet, while no insect has more than six feet. Their mouths, in some, are furnished with jaws (mandibules), either having pincers or claws, but concealed in a projection of the breast-plate (sternum) in form of a lip; in others it is in the form of a syphon, and in this they present a simple cavity. M. Latreille makes four divisions of the Acrides: 1. Mites (Trombidites); 2. Ticks (Ricinistes); 3. Water Mites (Hydractinellae); and 4. Flesh Worms (Microphthira); the latter distinguished from the others by having only one foot.

ACAR'NA'NIA, an ancient division of Northern Greece, which was bounded on the north by the Ambraciot Gulf, now the gulf of Arta, on the north-east by the small territory of Amphilochia, and on the west and southwest by that part of the Mediterranean to which the Greek and Roman writers gave the name of the Ionian Sea. The eastern boundary is not so easy to determine. It extended in the time of Thucydides east of the river Achelous, and encroached upon the territory which seemed the property of the Aitolians. Under the Romans, or somewhat earlier, the Achelous was made the dividing line. Acarnania afterwards became part of the Roman province of Epirus, and Aetolia was attached to the province of Achaia. Acarnania, it is now supposed, will form part of the new western province of Greece; it has sometimes been called by the name of Caralia, or Carnia, in modern times, which appears to be a corruption of the ancient name.

The longest straight line that can be drawn in Acarnania is about fifty miles, from Actium to the mouth of the Achelous. The length of sea-coast from Actium, near the entrance of the Ambraciot Gulf to the mouth of the Achelous, is reckoned, by Strabo, to be about 570 stadia, or 57 miles, reckoning 10 to a mile. Our modern charts give a length of from 70 to 80 miles, measuring in a rough way, along the very irregular outline of the coast. Several good ports are found on this coast, which, added to the general fertility of the country, might have made the people wealthy; but the primitive inhabitants never attained any reputation either in commerce, or the arts, sufficient to transmit their fame to our days. Their best ports were occupied by Corinthian colonies; and the inhabitants, engaged in continual wars with their neighbours, are characterized by Thucydides as living in a state of piracy and robbery, at a time when Athens (which was not 150 miles from the mouth of the Achelous) had seen the dramas of Aeschylus and Sophocles, and was adorned with the great works of Phidias.

The Swifts, the braves during the Peloponnesian war (which commenced B.C. 431), is the earliest extant writer who gives us any exact information about a people called Acarnanians, inhabiting the country which we have called Acarnania. It is a limited and imperfect, or at least imperfect idea, of the origin of many of the Greek nations. The Acarnanians are never mentioned by Homer, though their neighbours and brethren, the Aitolians, are; and this would tend to prove that the name of Acarnanians as the name of a people, is not so old as the time of Homer. They belonged, probably, at least in part, to an old and
widely diffused race called Legece; and, by gradual intermixture with Helene (Greek) stock, became, to a certain extent, a Greek people. In the course of time they formed a kind of union and civil polity, which Aristotle thought worth describing; but his work is lost.—[See Aetolians.]

We have hardly attempted any description of the interior of this country, because it is next to impossible to state anything about it that is either very precise or important. In its present wretched condition, it is very thinly inhabited, and very little cultivated. There can be no doubt that it contains a considerable portion of good soil; and we have lately been informed, on trustworthy evidence, that among its mineral treasures are sulphur and coal. There are several lakes in Acrania.

Bordering on Acrania, on the north-east, was the small territory of Amphibolia, which, with its capital Argos, was sometimes reckoned a part of Acrania, owing to the political connexion between the two people. It lay on the south-east and eastern coast of the Ambracian Gulf; and its eastern boundary may have been the Acheles, or rather the mountain chain, which here forms the western margin of the basin of that river. Tradition named Amphibolia, the son of Amphiaras, as the founder of the state of Amphibolia, and of its capital Argos, after his return from the war of Troy. [See Argos.]

Acrania, together with Argos, formed part of the Roman province of Epirus.—[See Actium.]

ACARUS. The mite, a genus of insects belonging to the Acarides, under which Linnaeus comprehended a great number of rather heterogeneous species. M. Latreille, in his Animal, edit. 1820, confines the generic name to the species which have the feeders (palpi) forked, very short or concealed, the body very soft, or without a scaly crust. The feet have, at their extremity, a vascular cushion. Among these species are enumerated the following:

The domestic mite (Acarus domestici, Dr. Geeri), is very commonly found in collections of insects and stuffed birds, and is exceedingly destructive to cabinets. The effluvia of an infestation have some effect in destroying this pest, but it is not powerful enough to prevent it altogether. Moth-proofing the specimens with a weak solution of corrosive sublimate, is said to prove an effectual preventive.

The itch mite (Acros Scabies, Fabrícùus) is a microscopic animal, found under the human skin in the pustules of a well-known cutaneous disease. By some persons the insect is believed to be the cause of the disease, though many authors think otherwise. Benelli, however, (Observations, p. 67) and Dr. Galt (Dissertation, on These Insects), have found the animal in the pustules under the skin—have observed it multiply—and infer, that if it does exist, it accompanies the disorder. The descriptions and figures which they have given prove these facts beyond question.

The sparrow mite (Acros pascivius, Fabrícùus) is distinguished by the remarkable size of its third pair of legs.

Geoffroy called it the bat tick, and Latreille formerly placed it in his genus Saropodes, now abandoned. Baron de Geer has given a good description of it with figures. (Tom. vii. Tab. 6.)

ACCELERATED MOTION, ACCELERATING FORCE, ACCELERATION. When the velocity of a moving body is continually increasing, the lengths described in successive equal portions of time are greater and greater, the motion is said to be accelerated, which is the same thing as saying that the velocity continually increases. [See Velocity.] We see instances of this in the fall of a body from the earth, in the motion of a stone thrown upwards, as it approaches the sun, and also in the ebb of the tide. As it is certain that matter, if left to itself, would neither accelerate nor retard any motion impressed upon it, we must look for the cause of acceleration in something external to matter. This cause is called the acélerating force, or, see that the force, cause, to the remarks in the last of which articles we particularly refer the reader, both now and whenever the word cause is mentioned. At present the only accelerating forces which our science consider, are the action of the earth, and the various weights produced by it.

It is observed, that when a body falls to the ground from a height above it, the motion is uniformly accelerated; that is, whatever velocity it moves with at the end of the first second, it will have at the end of the second twice as much as at the end of the two seconds; and so on. At least this is so nearly true, that any small departure from it may be attributed entirely to the resistance of the air, which we know from experience must produce some such effect. At this rate, the body will move with every successive second, a distance in which the substance of which it is composed, as is proved by the well-known experiment of the guinea and the feather, which fall to the bottom of an exhausted receiver in the same time.

The velocity thus acquired in one second is called the measure of the accelerating force. At this rate, it is 32.1 feet 2 inches per second. If we could take the same body to the surface of another planet, and if we found that there acquired 10 feet of velocity in the first second, we should say that the accelerating force of the earth was to that of the planet in which there is a proportion of 32.1 to 10 or 3.213. If the velocity is 32 feet at the end of the first second, we do not mean that the body falls through 32 feet in that second, but only that if the cause of acceleration were suddenly to cease at the end of one second, it would continue moving at that rate. In truth, it falls through only half that length, or 16.1 feet in the first second. It may be proved mathematically, that if a body, setting out from a state of rest, has its velocity uniformly accelerated, it will, at the end of any given time, have gone only half the length which it is capable of falling in. Then, if we have gone through, had it moved, from the beginning of the time, with the velocity which it has acquired at the end of it. Thus, if a body has been falling from a state of rest during ten seconds, (the resistance of the air having been removed,) it will then have a velocity of 32 X 10 or 320 feet per second. Had it moved through the whole ten seconds with this velocity, it would have passed over 3214 X 10 or 32140 feet. It really has described only the half, or 1608 feet. We may give an idea of the way in which this proposition is established, as follows:—The area of a rectangle [See Rectangle], that is, the number of square feet it contains, is found by multiplying together the numbers of linear feet in the sides. Thus, if an be 4 feet, and ac 5, the number of square feet in the area is 1 x 5, or 20. Again, the number of feet described by a body moving with a uniform velocity, for a certain number of seconds, is found by multiplying the number of seconds by the number of feet per second, or the velocity. If, then, a body contains many feet at the end of one second, and many feet as the body moves through per second; as many feet as the body describes in its motion, so many square feet will there be in and. That is, if we let ab represent the time of motion, and ac the velocity, the area and is represented by the length described in the time ab of the velocity ac. Not that ab is the length described, or ac the time of describing it; but ab contains a foot for every second of the time, and ac contains a square foot for every foot of the time described. Similarly, if at the end of the time just considered, the body suddenly receives an accession of velocity ar, making its whole velocity ap per second; and if with this increased velocity it move for a time which contains as many seconds as ar contains feet, the length described in this second portion of time will
contain as many feet as BCGF contains square feet; and
the whole length described in both portions of time will be
represented by the sum of the areas ADBC and BCGF.
And similarly for another acceleration of velocity at, and
an additional time represented by EH. Now, let a body move
for the time represented by AM; at the beginning of this
time let it be at rest; and by the end, let it have acquired
the velocity MN, so that it had moved from the beginning
with this velocity, it would have described the length repre-
sented by MN, that is, one-fourth of the velocity be communi-
cated at the beginning of each of these times, so that the body sets off from
A, with the velocity AC, which continues through the time
represented by AB, and causes it to describe the length represented by ADBC.
We know from geometry (see Two triangles, ABG and ABC, are such that
divided one-fourth, one-half, and three-quarters of MN, which
are also evident to the eye, and may be further proved by
drawing the figure correctly, which we recommend to such of
our readers as do not understand geometry. Hence
\( \text{GP} \) or DF is the velocity with which the body starts
at the end of the time AH; and at the end of AM;
and EH at the end of AM. Consequently, the whole length
described is a foot for every square foot contained in
ABCD, BFGE, and KHM, put together. But this
is not a uniformly accelerated velocity, for the body first
moves through the time AB, with the velocity AC, and
then suddenly receives the accession of velocity DF. But
if, instead of dividing AM into four parts, we had divided it
into four thousand parts, and supposed the body to
receive one four-thousandth part of the velocity MN at
the end of each of the parts of time, we should be so
much nearer the idea of a uniformly accelerated velocity
as this, that instead of moving through one-fourth of its
time without acquiring that velocity, the body would only
have moved one four-thousandth part of the time unac-
elerated. And the figure is the same with the exception
of there being more rectangles on AM, and of less width.
Still nearer would be to the idea of a perfectly uniform
acceleration if we divided AM into four million of parts, and
so on. Here we observe, 1. that the triangle ANM is the
half of APNM; 2. that the sum of the little rectangles
ACDB, BFGE, and so on, always greater than the triangle ANM,
by the sum of the little triangles ACD, BFG, &c.; 3. that the
sum of the last-named little triangles only the half of the
last rectangle HGNM, as is evident from the inspection of the
dotted part of the figure. But by dividing AM into a suffi-
cient number of parts, we can make the last rectangle HGNM
as small as we please, consequently we can make the sum of the
little triangles as small as we please, that is, we can make the
sum of the rectangles ABCD, BFGH, &c., as near as we please
to the triangle AMN. But the more parts we divide AM into,
the more nearly is the motion of the body uniformly accelerated;
that is, the more nearly the motion is uniformly accelerated,
the more nearly the sum of the triangles of the motion, the
more nearly the sum of the rectangles of the motion, &c.,
as near as we please to the triangle AMN. Hence we must infer (and there are in math-
ematical accurate methods of demonstrating it), that if the ac-
celeration were really uniform, ANM would really have a
square foot for every foot of length described by the body.

That is, since ANM is half of APNM, and the latter contains
a square foot for every foot of length which would have been
described if MN had been the velocity from the beginning,
we must infer that the length described by a uniformly
accelerated motion from a state of rest, is half that which
would have been described, if the body had had its last velo-
city from the beginning.

If the body begins with some velocity, instead of being at
rest, the space which it would have described from that
velocity must be added to that which, by the last rule, it
describes by the acceleration. Suppose that it sets out with a
velocity of 10 feet per second, and moves for 3 seconds
uniformly accelerated in such a manner as to gain 6 feet
of velocity per second. Hence it will gain 18 feet of velocity,
which, had it had at the beginning, would have moved it
through 18 x 3 or 54 feet of length, and the half of this is
27 feet. This is what it would have described had it had no
velocity at the beginning; but it has 10 feet of velocity per
second, which, in 3 seconds, would move it through 30 feet.
Hence 30 feet and 27 feet, or 57 feet, is the length really
moved through in the 3 seconds.

Similarly we can calculate the effects of a uniform retar-
dation of velocity. This we can imagine to take place in the
following way. While the body moves uniformly from
left to right of the paper, let the paper itself move with a
uniformly accelerated velocity from right to left of the table.
Let the body at the beginning of the motion be at the left
edge of the paper, and let that edge of the paper be placed
on the middle line of the table. Let the body begin to move
on the paper uniformly 10 inches per second, and let the
paper, which at the beginning is at rest, be uniformly ac-
celerated towards the left, so as to acquire 2 inches of velocity
in every second. At the end of 3 seconds, the body will be
at B, 30 inches from A, but the paper itself will then have acquired the velocity of 6 inches per second, and will have
moved through the half of 18 inches or 9 inches; that is,
given 25 inches and 24 inches, so that the body, with respect
to the table, stops in the sixth second, and then begins
to move back again. We can easily find when this takes
place, for, since the velocity on the paper is 10 inches per
second, and that of the paper gains 2 inches in every second,
at the end of the fifth second the body will cease to move
forward on the table. At the end of 10 seconds it will have
returned to the middle line again, and afterwards will begin to
move away from the middle line towards the left. At
the end of the twelfth second, it will have advanced 120 inches
on the paper, and the paper will have receded 144 inches, so
that the body will be 24 inches on the left of the middle line.

The general algebraical formula which represents these
results are as follow. Let a be the velocity with which the body
begins to move, i the number of seconds elapsed from the
beginning of the motion, g the velocity acquired or lost by
each second. Then the space described in a uniformly acce-
cerated motion from rest is \( \frac{1}{2} a + \frac{1}{2} g i^2 \); when the initial velocity is a,
the space described in an accelerated motion is \( a + \frac{1}{2} g i^2 \),
and in a retarded motion the body will have moved through

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In the direction of its initial velocity if \( at \) be greater than \( \frac{1}{2} gt \), or will have come back and passed its first position on the other side by \( \frac{1}{2} gt^2 - at \), if \( at \) be less than \( \frac{1}{2} gt \). In the last case it continues to move in the direction of its initial velocity for \( \frac{1}{2} \) seconds and proceeds in that direction through the space \( \frac{1}{4} gt^2 \).

For further explanation as to velocities which are accelerated or retarded, but not uniformly, see Velocity.

**Acceleration of the Moon's Mean Motion.** See Plane-

**A C C**

**ACCENT.** [in Mathematics]. To avoid the confusion arising from the use of many letters in an algebraic problem, and on other accounts, it is customary to signify different magnitudes of the same kind, or magnitudes similarly connected with the question, by the same letter, distinguishing these magnitudes from one another by accents. It is, therefore, to be understood, that the same letter with two different accents, may stand for different magnitudes, as those represented by different letters.

The convenience of the accent may be illustrated as follows. If \( a \) men do \( b \) things in \( e \) days, and \( e \) men can do \( f \) things in \( g \) days, we have the following equation:

\[
a'f = ab'.
\]

Now, instead of using \( c, f, \) and \( g \), in the second part of the question, let us use the letters which stood for the corresponding quantities in the first part, with accents; that is, let \( a' \) men do \( b' \) things in \( e' \) days. The equation then becomes

\[
a'b'c' = ab'c'.
\]

This new form of the equation some things are evident to the eye, to ascertain which, had the first equation been used, and resolve the question itself. For instance, that if \( a', b', c' \) express men, things, and days, as above, \( ab'c' = ab'c' \), only place two accents now where there was one before. In many investigations the judicious use of accents gives a symmetry to the processes and expression that can scarcely be otherwise obtained.

For the unmathematical reader, we may illustrate the use of accents in the following way. Let us suppose a bookcase to consist of four rows of shelves, each divided into six compartments. If we call the six compartments in the lowest range, \( A, B, C, D, E, \) and \( F \), and so on, and suppose it desirable to indicate a certain vertical line of compartments, while the accent would point out what horizontal line the one designated is to be found. This is precisely the mathematical use of the accent. All quantities of the same kind, or which the problem places in similar positions, are designated, with regard to this question, by the same letter.

The accented letter \( a' \) is read a accented, or a diphthong; \( a'' \) is read a twice accented, or a twice diphthong, or more conveniently, though without much attention to idiom, a tiev daph, &c., where accents become too many to be used with convenience, the Roman figures are substituted for them. Thus \( a'' \) would be used for \( a'' \). The Roman figures prevent this being taken for \( a' \), or a multiplied times by itself. The young algebraist would be careless, had he uses accents, until experience has taught him to use it so with propriety. The accented letter is the **metaphor of algebra; and expressions of the greatest symmetry may be deprived of all their beauty, and even much of their meaning, by a wrong use, or want of regard to this notation.**

**ACCENT.** When a child begins to read, he is apt to pronounce all the syllables of a word in the same key, with the same business and clearness, dawling the same time upon each, and passing the same time between each pair. He soon discovers that, in the pronunciation of a word, there is one syllable at least which must be distinguished from the rest by a more impressive utterance, as in the examples respect, respectful, respectfully. If the word is a long one, it is divided into a second accent, as respectability, ministrability, immortality. On the other hand, when short words come together, one or two are often devoid of accent, as in the phrase on the top of a hill. When it is stated that the accented syllable is pronounced more impressively than the rest, it is not meant that all accented syllables are to be equally impressive. In the examples given above, the first accent in

![](image)
affirm which it was lawful for him to endure. There is no doubt as to the great antiquity of this last-mentioned custom. Gregory of Tours, writing in the sixth century, describes the blow on the shoulder as part of the ceremony with which the kings of France, of the first race, were wont to confer the honour of knighthood. It has been derived, by some antiquaries, from the blow which the Roman slave received from his master when manumitted, or made a freeman. The blow of liberation, indeed, whatever may have been its original name, may be traced in various directions among the nations of the middle ages. In Germany, up to comparatively recent times, noblemen were wont to confer upon a slave the right of bearing arms by striking him. The act was called treulich wachen, that is, to make him capable of bearing arms. And in the same country it is still, in many places, the practice for the apprentice to receive a blow from the oldest journeyman when, by the termination of his apprenticeship, he becomes a freeman, and a member of the guild. The blow by which knighthood was conferred seems to have been originally given with the hand, for which the flat part of the sword was afterwards substituted.

ACCOMPANIMENT. In Music, is the subordinate part, or parts, accompanying a voice, or several voices, or a principal instrument, &c. The piano-forte or guitar part of a symphony or overture, the air itself being the principal, the other only the useful ally, the support. In a concerto the whole band accompanies the instrument for which the chief and prominent part is composed, except in the solo parts, (i.e., those portions of the concerto in which the principal, or principal parts, rest) then the orchestral parts take the form of a full piece.

Accompaniment is also the harmony of a figured base, or another word for what is, by a foolish, unmeaning term, but too generally adopted to be at once discarded, called throughout base.

The Accompaniment of the Scale is the harmony assigned, partly by what may be called nature and partly by custom, to that series of notes denominated the diatonic scale ascending and descending, such scale being taken as a base. Ex.

\[ \begin{array}{cccc}
4 & 5 & 6 & 7 \\
7 & 6 & 5 & 4
\end{array} \]

The diatonic scale adopted as a melody has one simple accompaniment, consisting almost exclusively of common chords; but it is also susceptible of many different harmonies, the study of which is of the utmost importance to the singer, as well as the accompanist and composer. (See Diatonic Scale.)

Dr. Burney (in Rees' Cyclopaedia) seems very much inclined to favour the opinions of Miss Burney, according to which Rousseau endeavoured to propagate in his Letter sur la Musique Françoise. This neat French writer, the zealous defender of the Italian school when, as relates to dramatic music, it certainly was the best, thinks that an accompaniment of the smallest possible number of notes is to be preferred; and he appears to have been enfrapted by a little boy who, at the performance of an Italian barberla in Paris, accompanied, on the harpsichord, with the airs with harmony of the most magick kind, sometimes playing with only two fingers. Rousseau had not acquired a taste for rich harmony, for with the music of the German school he was very little, if at all, acquainted; but that our celebrated and generally very judicious English writer, to whom the finest compositions of Germany were well known, should have sanctioned opinions formed upon the imperfect knowledge of the subject existing in the middle of the last century, is somewhat a matter of surprise; and as Dr. Burney is an authority, it is more necessary, for the sake of the art, to demur to his judgment here. Est modus in rebus—and sensible accompanists well know this medium. The old Italian accompaniment can nor hardly be endured; while, certainly, many ultra-Germanists of the present day overload melody by the multitude of notes which, for want of sound judgment, and in a true pelican spirit, they are so prone to employ.

ACCOMPTS. [See Book-keeping.]

ACCOUNT (see Low Latin Comptus), is a form of account which in the earlier times was much resorted to, and of which frequent mention is made in the old law books. Strictly, it lay only against a bailiff or receiver, requiring him to render an account of the sums received by him. For bureaus, as the French term, a form of account being found to be one of the most convenient at that time, it was extended to cases where the person called upon to account was neither a bailiff nor an authorized receiver, if he had in any way received and retained money which was his duty to return to the claimant. At present the action of account is rarely used, a bill in equity being found to be in practice a much more effectual mode of settling disputed accounts; whilst in the other cases formerly endured by the action of account, varying modern laws have simplified and made less inconvenient in preference to this, which is difficult, dilatory, and expensive.

ACCUMULATION, in Political Economy, is the art of adding one Saving to another for the purpose of forming Capital. Every saving indicates an excess of production over consumption, and the accumulated excess constitutes individual and national riches.

In 1832, 14,311,647 was the amount of deposits in Savings-Banks in England, Wales, and Ireland, made by 500 depositors. This large annual amount was a penny by penny, shilling by shilling, and pound by pound, of the savings of that class of persons who, in every country, have the greatest difficulty in accumulating. Habitual efforts of self-denial, and a rigid determination to postpone temporary gratification, and to lay by a permanent fund, have enabled these accumulators to retain so much of what they had produced beyond the amount of what they consumed. This sum of 14,311,647, represents as many products of industry as could be bought by that sum. It is a capital which remains for the consumption of posterity. In the present country—has it not been by the same slow but certain process of individual savings, and the accumulations of savings, that the consumption of any production is the destruction of its value. The production was created by industry to administer the individual wants of the present generation, it is consumed. When a thing capable of being consumed is produced, a value is created; when it is consumed, that value is destroyed. The general mass of riches then remains in the same mass as before that production took place. If the power to produce, and the desire to consume were equal and constant, there could be no saving, no accumulation, no capital. If mankind, by their intelligence, their skill, their division of employments, their union of forces, had not put themselves in a condition to produce more than was consumed, while the great body of industrous undertakings is increased, society would have been stationary—civilization could never have advanced.

Whatever is consumed by those who are engaged in the business of production, is called productive consumption; and that portion of the consumption of those who are not engaged in re-producing, is called unproductive consumption. —1. A shoemaker, we will suppose, makes a pair of shoes; he has invested his capital, that is, his productive consumption; for the pair of shoes represents the value of the materials employed in them, the commodities consumed by the shoemaker during their production, and the material and time which has been applied in making them. If the pair of shoes represent a higher value than that which has been consumed in consequence of the productiveness of the labour of the shoemaker, the difference is net produce, which may be saved, and with other savings, become capital. 2. The shoemaker, in consequence of the productiveness of the labour of the shoemaker, the difference is net produce, which may be saved, and with other savings, become capital.
other branch of industry. He now uses no materials, he employs no tools, but he consumes for the support and enjoyment of existence, without adding anything to the gross produce of society—that is, unproductive consumption. It would be well to note, however, that there may be direct production and results, though the product was not shown in the example of the one case—the man of science, who enlarges the bounds of human knowledge, and thus enables others to produce more successfully, is an example of the other. [See Consumption.]

Whatever is saved and accumulated is a saving and accumulation of commodities which have been produced. The value of the accumulation is most conveniently expressed in money, and even in labour, but only a very small part of the accumulation is actually represented by the money or bullion that is sufficient to carry on the transactions of this country; its accumulations, or capital, could not be purchased by several times the amount of all the bullion that exists in the country. A man may put in a thousand, for instance, into a factory, as much as they receive, or they accumulate more capital.

Whatever they save is—like every saving of every class—a clear addition to the general riches, and a means through which productive takes the place of unproductive consumption.

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Whatever they save is—like every saving of every class—a clear addition to the general riches, and a means through which productive takes the place of unproductive consumption.

1. The prodigal, who utterly destroys the accumulated property which the labours of others have created, is, fortunately, an exception to the general mass of consumers. As mankind have become more instructed, they have been less disposed to look with complacency upon the career of such an individual. Even amongst ill-informed people, it is not uncommon to hear it said of such an unhappy person, that he has eaten his estate. It is, of course, meant by this expression that his house or his lands are actually consumed; but, though the house and lands remain, something equal in value has been destroyed by his extravagance. He mortgage or sells his house or lands; and the proceeds of the mortgage or sale may be devoted to the maintenance of his domestics, by ministers to his sensual passions, by the persons who have been engaged in preparing for him foolish gratifications. The capital which has bought his house and lands has been withdrawn from productive consumption. It will become water, will be lost in a part of a factory; and the workmen whom it called into action were accustomed to consume in the most advantageous way for production, whilst they were themselves reproducing. The capital which has been thus consumed, although not absolutely consumed, is partially consumed, as the consumption of a number of persons whose command of the means of consumption will soon be at an end; and whose consumption, while it lasts, is so capricious, that no regular branch of industry can address itself to its supply. The productive consumers, who were maintained while the capital was engaged in manufactures, lose their employment; they become competitors in the market of labour; their competition diminishes wages; and the whole body of productive consumers in their department of industry are compelled to consume less. The unproductive consumption of the prodigal goes on till he can consume no longer. The value of his estate is utterly destroyed; it is so much completely wasted of the general capital. If all capitalists were to consume the same in the same manner as the prodigal, the most civilized country would return to a state of the most helpless barbarism. There would be no fund for the maintenance of labour. Adam Smith says of the man of capital. By the consumption of the capital destined for the employment of productive labour, he necessarily diminishes, so far as it depends upon him, the quantity of that labour which adds a value to the subject upon which it is bestowed, and, consequently, the value of the annual produce of all the land and labour of the whole country, the real wealth and revenue of its inhabitants.

2. The proprietor who systematically consumes his revenue, without taking from or adding to his capital, is not a public enemy, as the prodigal is, but he is certainly not a public benefactor. As far as the mere act of consumption goes, he destroys without reproducing. But he may consume to the full extent of his income, furnishing no funds for reproductive consumption, without any fault of his own; for he may accumulate the very income he consumes, so as to enable others to consume profitably. If he has children whom he trains to manhood, bestowing upon them a liberal education, and causing them to be diligently instructed in some calling which requires skill and experience, he is an accumulator. By the consumption of the property enabling his children to be producers, he has accumulated a fund out of his consumption which may be productive at a future day. He has postponed his contribution to the general stock; but his has not withstood the test of time. He has, however, of the class who consume all their income, we may be warranted in saying that the encouragement which they afford to industry never advances, because there is no accumulation to give employment to new labour to the amount of that which is consumed; it, may give employment to twenty men; but, after he has spent this sum for twenty years, he will, in the twentieth year, give employment only to the same number of men that he did in the first year. The fund which sets the labourers in action cannot increase, and therefore the labourers cannot increase, because the amount of labour to be performed cannot increase. If the labourers increase beyond the labour, they each labour less, and are each worse paid.

3. Let us take a case, with an example, of a landlord, who consumes three-fifths of that income unproductively, and employs two-fifths in productive consumption. By his unproductive consumption of six hundred a year, twelve men are maintained, taking the proportion of the general case. By his productive consumption of four hundred a year, either in agricultural or commercial undertakings, or by lending the money to others, he employs eight men. The effect of the expenditure upon labour is so far equal in this case and the former. But when a profit is made, there is an essential difference; for if twelve and a half per cent, or fifty pounds profit, is annually made upon the four hundred pounds, there is a fund created for the constant employment of another labourer. The twelve and a half per cent profit upon the profit, for six years, enables a second additional labourer to be employed, and so on. It is in this way that profits, gradually accumulated, enable the number of labourers to increase; and thus in all countries where capital is saved for productive consumption, the population, the size of the labourers, will be better fed, and lodged, and clothed, than the smaller.

The accumulations of a nation, in its collective capacity, must be determined by the extent of individual accumulations. National accumulations are the same consequence, individual, by personal accumulations. They are exhibited in the form of roads, canals, harbours, docks, bridges, water-works, public buildings, endowments for education. These facilities for accumulation follow the accumulations of individuals, although they themselves are less effective than to be yet better fed, and lodged, clothed, and thicker.

Whatever tends to enlighten the great body of the people facilitates individual accumulation. A large portion of the
productions of industry, especially amongst the humbler classes of the community, is wasted, in addition to that portion which is exported. Every consumption that is saved by habits of order, by knowing the best way of setting about a thing, by economy in the use of materials, is so much saved of the national capital; and what is saved is not merely a saving of labour, but a giving new encouragement to the labour of the producer, and to bestow an increase of comforts upon the consumer. Again, the more that professional skill of every sort is based upon real knowledge, the more, in the end, the industry of every class of labourers. Above all, sound morals, and pure and simple tastes, are the best preservatives from wasteful expenditure, both in the rich, and in the poor: and he that limits his individual gratification to objects worthy of a rational being, laborious and costly by nature, will need no law for latency for lasts, and of laying by something to provide for that productive consumption by which the wants of others are supplied. [See Smith's Wealth of Nations, Book ii. chap. iv. Note; there are no man-made plantations.]

3. Acer Taiwanum, the Tartarian maple (Linn. Sp. Pl. 1. 3. 1431). Leaves roundish, taper-pointed, slightly serrated, shining green beneath. Flowers in short, erect, branched racemes. Keys diverging a little, rounded at the point. An ornamental tree, a smaller larch, from fifteen to twenty feet high, often met with in gardens and plantations. Its native country are the southern provinces of Russia in Asia, where it extends as far as Hungary, there finding its most western limit. The Cinnamons call it su-canp, or benshaw; from its keys, deprived of their wings, they form, by the aid of boiling water, an astrigent beverage, which, mixed with an abundance of milk and butter, forms a favourite article of their diet. The wood is light and soft, used for brown and teas.

4. Acer strangulatum, the striped-bark maple (Linn. Doct. 1. 2. 381. A. Pennsylvanicum, Linn. A. Canadense, Du Ham.). Leaves roundish, finely serrated, divided at the upper end into three nearly equal tapering lobes; when young covered with a mucilaginous, which is gradually thrown off as they increase in size. Flowers in drooping racemes, Keys short, blunt, diverging. Bark striped with black and gray. — A native of North America, from Canada to the southern provinces. The wood is used for the making of sugar, maple-syrups, etc.

5. Acer soccinum, the hard maple (Linn. Sp. Pl. 1. 3. 7). Leaves roundish, serrated, the teeth pointed. Flowers in drooping racemes. Keys sharp, thick, yellowish, diverging. Bark striped with black and gray. — A native of North America, from Canada to the southern provinces. The wood is used for the making of sugar, maple-syrups, etc.

6. Acer flabelliforme (Linn. Sp. Pl. 1. 3. 7). Leaves oblong, entire, the teeth pointed. Flowers in drooping racemes. Keys sharp, thick, yellowish, diverging. Bark striped with black and gray. — A native of North America, from Canada to the southern provinces. The wood is used for the making of sugar, maple-syrups, etc.

7. Acer tataricum, the Tartarian maple (Linn. Sp. Pl. 1. 3. 7). Leaves roundish, finely serrated, the teeth pointed. Flowers in drooping racemes. Keys sharp, thick, yellowish, diverging. Bark striped with black and gray. — A native of North America, from Canada to the southern provinces. The wood is used for the making of sugar, maple-syrups, etc.

8. Acer olitorum, the common maple (Linn. Sp. Pl. 1. 3. 7). Leaves oblong, entire, the teeth pointed. Flowers in drooping racemes. Keys sharp, thick, yellowish, diverging. Bark striped with black and gray. — A native of North America, from Canada to the southern provinces. The wood is used for the making of sugar, maple-syrups, etc.

9. Acer pseudoplatanus, the American sycamore (Linn. Sp. Pl. 1. 3. 7). Leaves oblong, entire, the teeth pointed. Flowers in drooping racemes. Keys sharp, thick, yellowish, diverging. Bark striped with black and gray. — A native of North America, from Canada to the southern provinces. The wood is used for the making of sugar, maple-syrups, etc.

10. Acer rubrum, the scarlet maple (Linn. Sp. Pl. 1. 3. 7). Leaves oblong, entire, the teeth pointed. Flowers in drooping racemes. Keys sharp, thick, yellowish, diverging. Bark striped with black and gray. — A native of North America, from Canada to the southern provinces. The wood is used for the making of sugar, maple-syrups, etc.

11. Acer saccharum, the sugar maple (Linn. Sp. Pl. 1. 3. 7). Leaves oblong, entire, the teeth pointed. Flowers in drooping racemes. Keys sharp, thick, yellowish, diverging. Bark striped with black and gray. — A native of North America, from Canada to the southern provinces. The wood is used for the making of sugar, maple-syrups, etc.

12. Acer pensylvanicum, the Pennsylvania maple (Linn. Sp. Pl. 1. 3. 7). Leaves oblong, entire, the teeth pointed. Flowers in drooping racemes. Keys sharp, thick, yellowish, diverging. Bark striped with black and gray. — A native of North America, from Canada to the southern provinces. The wood is used for the making of sugar, maple-syrups, etc.

13. Acer rubrum, the scarlet maple (Linn. Sp. Pl. 1. 3. 7). Leaves oblong, entire, the teeth pointed. Flowers in drooping racemes. Keys sharp, thick, yellowish, diverging. Bark striped with black and gray. — A native of North America, from Canada to the southern provinces. The wood is used for the making of sugar, maple-syrups, etc.

14. Acer saccharum, the sugar maple (Linn. Sp. Pl. 1. 3. 7). Leaves oblong, entire, the teeth pointed. Flowers in drooping racemes. Keys sharp, thick, yellowish, diverging. Bark striped with black and gray. — A native of North America, from Canada to the southern provinces. The wood is used for the making of sugar, maple-syrups, etc.

15. Acer rubrum, the scarlet maple (Linn. Sp. Pl. 1. 3. 7). Leaves oblong, entire, the teeth pointed. Flowers in drooping racemes. Keys sharp, thick, yellowish, diverging. Bark striped with black and gray. — A native of North America, from Canada to the southern provinces. The wood is used for the making of sugar, maple-syrups, etc.
5. *Acer barbatum*, the bearded maple (*Mich. Fl. Am. bor. 2.* 222). Leaves heart-shaped, three-lobed, nearly equally serrated; the lobes of nearly equal size, or the lateral ones much the smallest; nearly smooth beneath. Clusters sessile; the stalks of the female flowers simple, of the male flowers branched. Calyx bearded internally. Keys smooth, diverging but bay. — This rare and little-known species is a native, according to Pursh, of deep pine and cedar swamps in Jersey and Carolina, where it forms a small tree. Nothing is known of its useful application, if any. In the nurseries it is generically called *A. trilobum*.

6. *Acer spicatum*, the spikes-flowered maple (*Linn. Dict.* 2. 381. A montanum, *Ait.*). Leaves heart-shaped, smooth above, downy and glaucous beneath, of an oblong figure, with about five unequal, tapering, coarsely and unequally serrated divisions. Flowers small, green, in upright racemes. Keys short, rounded, a little diverging. — A small tree, of rather inelegant appearance, found on mountains in the United States and in Canada. It is frequently seen in plantations in this country among other exotic trees. The red colour of its keys in the autumn forms its principal merit.

7. *Acer opalus*, the Guelders-rose-leaved maple (*Ait. Hort. Kew.* 3. 436. A. rotundifolium, *Linn.* A. opulentifolium, *Villars*). Leaves more or less heart-shaped, roundish, five-lobed, or lobes broadly, but generally heart-shaped, and coarsely serrated. Flowers in drooping corymbs. Keys smooth. — A small tree, ten or twelve feet high, found in France, especially in Dauphiny, where they call it *apart*, and also in Spain. It is, in some respects, like *A. obtusatum*; but it is readily known by its leaves being smooth beneath, and is far inferior to that noble species. It is not uncommon in botanical collections. Its leaves are sometimes very round, and sometimes have the lobes tapering; both are figured.

8. *Acer obtusatum*, the Neapolitan maple (*Wild. Sp. pl.* 4. 1984. A. Neapolitanum, *Tenore*). Leaves heart-shaped, roundish, five-lobed, woolly beneath; the lobes either obtuse or pointed, and coarsely serrated. Flowers in drooping corymbs. Keys smooth. — A native of Hungary, Croatia, and many parts of Italy; produces this beautiful species. On all the hills and lower mountains of the kingdom of Naples; in Camaldoni, Castellamare, and the Abruzzi, it is found abundantly, growing usually to the height of forty feet; it is extremely striking, with its reddish-purple branches. In the wood of Lucania, between Rotonda and Rubia; and in the Basileote and Calabria it is said, by Tenore, to acquire colossal dimensions. It is certainly very singular that so fine a tree as this, occupying so large a tract of country, is not more cultivated. The flowers are so beautiful that they produce a large fruit. It is nearly unknown in this country; and yet, although it is perfectly hardy, and very easily multiplied, it is scarcely ever met with in any but botanical collections. Two forms of the leaf are figured, one with blunt, and the other with pointed lobes.

9. *Acer campestre*, the common maple. (Linn. *Sp. pl.* 1497.) Leaves heart-shaped, with three or five deep segments which are not serrated, but generally two or three-lobed, and narrow at their base; downy beneath, at least when young. Branches covered when old with a corky bark. Flowers in erect, branched, downy corymbs. Keys short, smooth, with nearly parallel edges, diverging at right angles. — Such appears to be the most general character of this very common species, found in every hedge-row in England, and spread over the greater part of Europe. It is said not to be indigenous in Scotland, and on the Continent it does not approach the north nearer than the southern provinces of Sweden. It advances as far to the eastward as the range of the Caucasus, where it disappears. In England this is either a bush or a small tree of inoffensive appearance, and its wood is of little value, except for the use of the turner, who makes it into cups, bowls, &c.; in the southern region of Caucasus, we are told by Pallas that it becomes a tree of handsome aspect, with a trunk as thick as a man's body, so that its wood is so hard as to be in request for the manufacture of musket-stocks: it must, however, be remarked, that this writer states the keys of his plant to be covered with down; it is, therefore, to be suspected that the Caucasus plant is distinct from our maple, in which the keys are always smooth. It is much to be wished that this point, which is of some importance, were cleared up. The common maple is sometimes planted by farmers upon bad land, for the purpose of fencing, for which, however, it is ill suited.

There is a supposed variety of this, called *Acer quadratum*, found in the woods of Hungary and Austria, which has the segments of the leaves always broadest at the base, and scarcely lobed.
Many varieties are known to gardeners, of which the following are worth noting:

i. The Red or Gold-striped.—Leaves stained with yellow and red.

ii. The Silver-striped.—Leaves marked with streaks of white.

iii. The Golden.—Leaves having altogether a yellow tint.

iv. The Corchorus Plane.—Distinguished by its broad leaves, and more vigorous mode of growth.

There is also found in the woods of Hungary, near Szatmárt, what botanists consider a variety, with the lower lobes of the leaves as large as the upper. By some this is called A. palmifolium.

14. Acer macrophyllum, the broad-leaved maple (Pursh, Fl. Am. Bor. 267).—Leaves deeply heart-shaped, not serrated, divided into five deep, spreading, slightly-lobed segments, the middle one of which is often narrow at its base, and the lower ones generally smaller than the others; when young slightly downy, when old shining and perfectly smooth. Flowers in drooping very compact racemes, large, pale, yellowish green. Keys long, straight, diverging, covered at the base with long stiff hairs. This species, which is probably the finest of the genus, has recently been procured in a living state, by the Horticultural Society, from the north-west coast of North America, where it forms a very large tree, having a dense unbranched head, and yielding a timber apparently of considerable value; specimens of it, brought from North America, are scarcely inferior in beauty of the grain to the finest satin-wood. It proves to be a hardy tree, of very rapid growth, sometimes making shoots six or seven feet long in a season; and is remarkable for the unusual size of its leaves, some of which, on young vigorous shoots, have measured as much as ten inches in diameter.

15. Acer sterculiaceum, the shady maple (Wallich, P. a. var. 2. 2. t. 165).—Leaves heart-shaped, downy on the under side, with five ovate, taper-pointed, serrated lobes, to which the lower are very small. Flowers in very showy drooping racemes.—A large tree, with a trunk often three feet in diameter. It is not yet in England.

16. Acer villorum, the shaggy maple (Wallich, P. a. var. 2. 4).—Leaves heart-shaped, three-lobed, occasionally with two very obscure lateral lobes near the base, shaggy and hairy; the lobes ovate, taper-pointed, remotely toothed, serrated. Flowers in copious, nodding, shaggy, branched clusters. Keys downy.—A very large tree, found on the high Alps of India, approaching the limits of perpetual snow in Sirmione and Kumonza. This very distinct species is a native of the Himalayas, and would, no doubt, prove hardy in this country, and it must be wished that it could be procured.

17. Acer cultivatum, the curve-keyed maple (Wallich, P. a. var. 2. 4).—A large tree, native of the regions towards the Himalaya, in Kumaon and Srinogar.

18. Acer caudatum, the long-pointed maple (Wallich, P. a. var. 2. 4).—Native of the highest regions of Nepal, towards Gossain Than, of Sirmione, Kumonza, and Srinagor.
19. *Acer Platanoides*, the Norway maple (Linn. Sp. pl. 1496). Leaves heart-shaped, very smooth, except at the axil of the veins; five-lobed, the lobes taper-pointed and diverging, with a few taper-pointed diverging teeth. Flowers in loose, erect, stalked corymba. Keys smooth, diverging. A fine tree, with very handsome glossy deep-green leaves, for the sake of which it is a great deal cultivated. The northern and midland parts of Europe, and the north of Asia, as far as the Ural chain, produce this species. In the Rocky Mountains it passes from the state of a shrub, in the northern provinces, to that of a tree, a trunk two feet thick, in the more southern districts. Its wood is valued for turners' work; from its ascending sap a kind of coarse sugar has been procured, in the same way as from the maple. It is occasionally found in the gardens of Europe and North America, and has been cultivated for the sake of its variety.

20. *Acer saccharinum*, the sugar maple (Linn. Sp. pl. 1496). Leaves heart-shaped, glaucous beneath, very smooth, except at the axil of the veins; five-lobed, the lobes taper-pointed, and very coarsely toothed. Flowers in nodding corymba, which are not produced, are found in the north of Saint Jean, in Canada, to the woods of Upper Virginia, and probably still farther South. This species prevails; and it forms a large portion of the vegetation of New Brunswick, Nova Scotia, Vermont, and New Hampshire. The honey produced is of a very high quality, and is sometimes called the *North American Orviflorum*, a name which it has received from its honey being a kind of flower honey. In the autumn the woods of those countries are dyed of a crimson hue, by the changing leaves of the sugar maple. The wood is hard, and has a satiny lustre, but it is readily split, and is of much value, except when its grain is accidentally waved, and then it may be good for request for the cabinet-makers. The younger Michaux states, that it may be at all times known from that of the red maple by a very simple test. If you pour a drop or two of water on the bark, the following day the wood is white, in a minute it becomes of a greenish cast, while that of the red maple becomes deep blue. The saccharine matter contained in its ascending sap is the principal cause of this species being so much desired. From this, skilfully felling, tapping the trunk in the spring, during the space of six weeks, a very considerable quantity of a fine brown sugar is procured; as much, it is said, as 33 lb. to tree. The sugar maple does not generally succeed very well in England, where it is rarely seen; and even when in blossom it is not esteemed as the European. The European maple, which is stamens, one, the silver-striped, in which the leaves are slightly stained with white; and the other, the cut-leaved, in which the leaves are deeply and irregularly jagged. When the foot-stalks of the leaves are broken they exude a milky fluid.

21. *Acer negundo*, the black sugar maple (Michaux, Arb. ii. 238. t. 16)._—This plant is a native of similar situations with the last, of which perhaps it is only a variety. It differs, however, in having leaves of a deeper green, whence the wood is of a richer hue, of a finer texture, and much more downy beneath. It appears to possess the properties of the sugar maple, but it appears to possess the inferior degree.

22. *Acer Lobelii*, Lobel's maple (Tenore Corso Botanico, ii. 174). Leaves very slightly heart-shaped, imperfectly and irregularly toothed, divided into five shallow, abruptly-pointed lobes; quite smooth beneath, except at the point, whence the principal veins radiate. Keys smooth, very much diverging. This is a large tree, in some respects not unlike *A. Platanoides*, with a perpendicular trunk, and a handsome pyramidal head. It is found among the mountains in the north of the kingdom of Naples; at Avvocato near Monte Vergine, Cerealtio, Monte S. Angelo di Castel-langa, and other places.

23. *Acer ericarum*, Sir Charles Wager's maple (Michaux, Fl. Am. sept. ii. 253. A. dasyacarpum, Widal). Leaves truncate at the base, glaucous and smooth beneath, deeply divided into five jagged, taper-pointed lobes. Flowers in thin clusters. A tree, found growing among the rocks of most parts of North America on the eastern side, where it is commonly called white maple. It grows with great rapidity, especially on the banks of clear rivulets with a gravelly bottom, and is perhaps the most ornamental of the genus. It is extremely common in the plantations of all Europe, where it is remarkable for the deep crimson hue of its leaves in autumn. Its wood is light, and of little or no value except to the turner. It is said to make excellent charcoal for gunpowder. The height of this species often bears so little proportion to its other dimensions, that, according to the testimony of the younger Michaux, trees are found, especially at the mouth of the rivers Monongahela and Alleghany, as much as fifteen feet in circumference of their trunk, without corresponding height. The nurserymen usually call this species the cut-leaved scarlet maple.

24. *Acer rubrum*, the scarlet maple (Linn. Sp. pl. 1496. A. cocineum, Hort.). Leaves slightly heart-shaped, glaucous beneath, divided into about three coarsely-toothed and lobed segments. Flowers clustered, with petals. Keys small, red. The deep-red colour of the flowers in the spring, and the crimson wood, have given rise to the name of this species, which is found, from Canada to Florida, growing in swamps along with alders. With us it is one of the first trees that put forth their blossoms in the spring; and it is said, perhaps with some degree of truth, to be seen with rosy life in the beginning of March, when almost all Nature is elsewhere still. Its wood is far more valuable than that of the *Acer ericarum*; it is not only commonly used by the Americans for articles of furniture, but is also in request for the stocks of rifles,—for which, when it is what they call curried, its toughness renders it well adapted. Two varieties of this species are cultivated in this country, under the names of *A. cocineum* and *A. intermedium*.

25. *Acer circinatum*, the curled maple (Pursh, Fl. Am. sept. i. 267). Leaves deeply cordate, roundish, divided into seven shallow, sharp-pointed, serrated lobes. Flowers in few-flowered corymba.—On the north-west coast of North America this grows in company with *A. macrophyllum*. It is a small, scrubby plant, found growing in the garden of the Horticultural Society of London.


30. *A. japonicum* (Ib. l. 161.)

31. *A. palmatum* (Ib. l. 162.)

32. *A. septemlobum* (Ib. l. 162.)

33. *A. plicatum* (Ib. l. 163.)

34. *A. trifidum* (Ib. l. 163.).

For A. Negundo, see NEGUNDO.

Cultivation.—The hardy maples, which are the only kinds of any importance in this country, are all increased by seeds or by cuttings. The European maples, after they have yielded their keys, which should be gathered when fully ripe, and immediately buried in heaps of river sand, where they may remain till the following February; they may then be sown in beds, rather thinly, and, when one year old, should be transplanted to other fower beds. They ought never to be headed back, as oaks and Spanish chestnuts are. From layers they all make excellent plants very rapidly. They are occasionally budded upon the common sycamore, but this mode is little practised in England.

ACERINAE, a tribe of plants comprehending only the maples (see Acer) and the ash-leaved maples (see Negundo). They belong to the Polypectalous division of the Dicotyledonous class, and are related to Filiation, or the Linden tribe; they are also akin to a tribe of tropical plants called Malpighiaceae, which see. They are known—1. by their flowers being what is called unsymmetrical, that is, not having the various parts agreeing in number to any extent; 2. the calyx and corolla are divided each into five parts, there are seven, eight, or nine stamens, and three divisions of the pistillum—2. by their stamens being hypogynous, and inserted upon a disk—3. by their winged fruit, or keys with—4. by their growing no sooner than the following spring. These species are all trees or shrubs, with opposite stalked exstipulate leaves, and are found exclusively in the north of Europe, Asia, America, and India. A sweet, mucilaginous sap is common in these plants, from which sugar can be manufactured.

CHARACTR.

Flowers either unisexual (1) or bisexual (5). Calyx and corolla (1) equal in the number of their parts, with an imbricated ejection; the corolla sometimes absent. Petals (4) without appendages; stamens (3) hypogynous, inserted upon a disk (2,6), which arises below the pistillum, not
agreeing in number with the divisions of the calyx and corolla. Pistillum (6) two-lobed, each lobe having a wing at its back. Style one. Stig mata two. Fruit (7) formed of two samaras, or keys, with long wings at their back, each containing one seed and one erect seed (6). Embryo (9) curved, with leafy, shrivelled cotyledons, and no albumen. Trees or shrubs, with opposite leaves, without stipule.

ACETATE, a salt resulting from the combination of the acetic acid with an alkali, carbonate, or other alkaline base. The acetates are prepared in different modes, according to circumstances; and indeed the same acetate may frequently be made by various processes. The acetate of soda, which is an alkaline acetate, may be formed, though not necessarily (as is the case with the caustic soda), on satura ting the acetate of lime, with the caustic soda: the acetate of lime, an earthy acetate, is easily procured by single elective affinity and decomposition, as when carbonate of lime (chalk) is added to the acid as long as it will dissolve, in the acetate of zinc, which is a metallic acetate, may be obtained by red pyrites: a solution of acetate of lead with one of sulphate of zinc: in this case acetate of zinc is produced by double elective affinity and decomposition. All acetates, and indeed all salts whatever, are either of single, single elective, or double elective affinity.

It follows, from what has been stated, that the acetates may be divided into four classes,—namely, the alkaline, earthy, metallic, and vegeto-alkaline acetates: as an example of each, and in the order mentioned, the following are to be enumerated:—acetate of soda, lime, lead, and morphia. Although the classes of acetates possess some properties in common, yet, from the very different nature of their bases, it can hardly be expected that the points of agreement should be numerous. Thus, the acetate of ammonia is evaporable by heat, whilst the other alkaline acetates are not merely decomposed at a high temperature, but the acid itself undergoes this change, and its carbon and oxygen, or a portion of them, recombine so as to form carbonate and oxygen, while some acetates, that of soda for example, are converted by heat into carbonates. Many of the earthy acetates suffer similar changes; thus, the acetate of lime is reduced by heat to a carbonate, but if the heat be long continued, and stronger than required for the formation of the carbonate, the car bonic acid is subsequently expelled, and pure lime remains instead of the carbonate.

Some of the metallic acetates, when subjected to distillation at a high temperature, yield a large portion of acetic acid of considerable purity. This is the ease with the acetates of silver, and also with that of copper, after it has been redistilled. But there are other metallic acetates,—as the acetate of lead and of zinc,—which, besides acetic acid, furnish a pure volatile fluid called pyro-acetic spirit: this is derived from the decomposition of a part of the acetic acid, and the recombination of its elements in different proportions. In general those acetates which are easily decomposed give most acetic acid and least pyro-acetic spirit, and rice acid.

In the retort in which the metallic acetates are decomposed by heat during distillation, their bases, in some instances, remain in the metallic state. This happens with the acetates of copper, lead, and silver; while the acetates of iron, manganese, and zinc leave the bases in the form of oxide: in both these cases the residue is mixed with carbon, which results from the decomposition of a portion of the acetic acid: and, derived from the same source, there are evolved carbonic acid gas, and carburetted hydrogen gas.

The vegeto-alkaline acetates, such as those of morphia, quina, &c., are decomposed and totally dissipated when exposed to heat in open vessels. As the affinity existing between the acetic acid and the bases with which it combines is but weak, all acetates are decomposed by the more powerful acids. On this circumstance depends the preparation of acetic acid from some acetates, especially those of soda and lime, by the action of sulphuric acid (oil of vitriol). This unites with the bases, and expels the acetic acid, which is condensed in proper receivers.

Although most acetates are artificial products, yet the acetate of potash exists in the sap of some plants. The acetates are of several kinds; a few exceptions to the rule, and many of them are easily crystallized: they are a very important class of compounds; some of them, as already noticed, are used in the preparation of acetic acid. The acetate of alumina and the acetate of iron are largely employed by chemists; and many of the metal acetates are used also by them, and by dyers and colour-makers.

ACETIC ACID. This acid, sometimes called also aceticus acid, is the sour part of vinegar, and to that which its peculiar and valuable properties are due. Vinegar, in whatever mode made, is, in fact, dilute acetic acid, mixed with colouring matter, and some slight impurities. Acetic acid, as will presently be more particularly mentioned, is a compound of the elements oxygen, hydrogen, and carbon: these are combined in it, and formed by a more or less chemical action, but must be separated from previous combination, either by the agency of fermentation or the action of heat, and then recombine to form the acid in question.

The acetic acid exists in the juice of some plants, as will be shown. The first method employed in the preparation of this acid is by a copper, or other metallic acetate, which has been treated of; at present it is to be considered as procured, first, by the fermentation of saccharine or sugary matter, secondly, by the action of heat upon wood; the product of the latter is called vinegar, that of the former constituting vinegar, as well as the genuine acetic acid, but which is now largely employed, when purified, for most of the purposes to which vinegar is applied.

It is well known that, when certain vegetable juices which contain much sugar, such as the grape, are fermented, if the heat be not too great, it is that of causing the decomposition of the sugar, and the recombination of its elements, so as to form formic acid, or fixed air, most of which escapes in the state of gas; and alcohol, or spirit of wine, the remainder; but when acted upon with the fermented juice: this is called the vivous fermentation, the product being wine. Now sugar is a compound of three elements, which also form spirit of wine or alcohol, viz. oxygen, carbon, and hydrogen, and while a portion of these is consumed in the formation of the spirit, the remaining part of the three combine to form alcohol or spirit of wine.

When the fermentation proceeds farther, as it is apt to do with very weak wines, if exposed to air, and a higher temperature than that of the distillation, the former compound of the oxygen, hydrogen, and carbon, which form the alcohol or spirit, again takes place, and it is converted by this into vinegar, or, in other words, the acetic fermentation is produced. There can be scarcely a doubt that this as, by its name implies, was first procured, and most probably by accident, from the passage of the vivous into the acetic fermentation; and, in fact, it is now usually prepared in wine countries, by exposing the wine in casks to the action of the air, at a temperature of about 75° Fahrenheit's thermometer.

In this country vinegar is procured from an infusion of malt, termed root, which is fermented in the usual way. It is then put into barrels, which are arranged in stoves, with their bungs out, and kept in a state of progress of fermentation. At this heat, which is considerably higher than that required for the vivous fermentation, carbo nate acid is produced, which escapes as in the vivous fermentation: while a part of the oxygen, hydrogen, and carbon of the spirit of the malt unite to form vinegar, or acetic acid part of the three combine to form alcohol or spirit of wine.

Vinegar thus procured is a well-known reddish brown-coloured liquid; its smell is rather pleasant and refreshing, and its taste is distinctly, but not intensely sour. The strongest malt vinegar is termed by the maker No. 24, and is allowed to contain 24 parts of acetic acid; a moderate manuf acturer is all-need to mix it with one-thousandth part of its weight of sulphuric acid (oil of vitriol): vinegar, therefore, is not pure acetic acid, but is a mixture of a small portion of the acid, much water, a little sulphuric acid, spirit of wine, colouring matter, and muscatel.

Vinegar possesses the usual power of acids to redden vegetable blue colours; it combines with the alkalas, earths
Acetic acid cannot exist except in combination with water, or as a base, as the alkali soda, and when in the latter state of combination, and quite dry, it consists of three equivalents or atoms of oxygen $8 \times 3 = 24$
three do. do. hydrogen $1 \times 3 = 3$
four do. do. carbon $6 \times 4 = 24$
Equivalent or atomic weight 51

The crystals or glacial acetic acid above described consist of one equivalent or atom of acetic acid 51
one do. do. water 9

Equivalent or atomic weight 60

Acetic acid may also be obtained by the mere action of heat upon the binacete of copper, or, as it is sometimes called, though improperly, distilled verdigris. The aceto of copper is first to be dried, so as to expel the greater part of the water of crystallization, and then subjected to a strong heat, in an earthen or glass retort, to which a receiver is to be properly adapted. The heat decomposes the salt, and the copper remains in the retort in the state of black or peroxide. The acid when first procured has a greenish tint, and is unfit for some purposes; some part of the copper, it is to be rendered free from this by redistillation. This acid, though not quite so strong as that procured by the former process, is, however, still more concentrated than that required for general use. The following is a good process for obtaining acetic acid, of sufficient strength for most purposes:

Put into a glass retort 12 ounces of dry crystals of acetate of soda, and pour upon it 44 ounces of sulphuric acid, previously rendered as pure as possible by distillation; the receiver is then adapted, distil, either by the heat of an Argand's lamp, or of a sand heat; about 14 ounces of acetic acid of specific gravity, 1.046 will be obtained, containing nearly 90 percent of real acetic acid.

The uses to which acetic acid, in the state of vinegar, is applied are too well known to require notice; in the form of pyroligneous acid it is employed to preserve meat, and to impart to it the smoky flavour usually obtained by drying. Pure acetic acid is used in chemical researches, and especially for preparing various acetates. In a less pure state it is employed in the arts for preparing acetate or sugar of lead, acetate of copper or verdigris, and acetate of alumina, largely used by calico printers as a mordant.

A Ch'ese, one of the ancient great divisions of the Peloponnesus, now the Morea, extending from the river Larissus, near Cape Araxus, along the coast of the Corinthian Bay (Gulf of Lepanto), as far east as the small territory of Sicyon, which separated it from that of Corinth. The Achaean or Achaean, a petty stream, separated Achaea from Sicyonia. The greatest length, in a straight line between the western and eastern boundaries, is about sixty-five English miles. The breadth of the province varies irregularly from about twelve to twenty miles. Being for the most part, only a narrow slip between the Arcadian mountains and the sea, the courses of the numerous streams that flow into the Corinthian Gulf are short; and many of them are quite dry in summer.

This province contains many desolate and mountain passes formed by branches of the great Arcadian ridge, which, in some parts, run down to the Corinthian Gulf. The coast is generally low, and has few good ports.

It was in the course of this country, by its pollution, that the sea-fowl, which was called Argialos, afterwards Ionia, and sometimes Agialian Ionia, which probably means no more than 'Ionia on the sea-coast' it then contained twelve cities or states. The same number of political divisions subsisted under the Achaei in the time of Herodotus, and retained their names under Roman dominion; at present Patras, now Patras, situated on the coast, about six miles from the entrance of the gulf of Corinth, is the only Achaean town that maintains any importance. The very few of them are, at least, doubtful or unknown. Vostiza is probably the ancient Argium, where the states of Achaia used to meet. Helice, on the coast, was destroyed by an earthquake, accompanied by an irruption of the sea, n.c. 372. [Pausanias, vii. 11. 2.] The same time, also, the temple of Hera at Samos, then the last remaining monuments of the old heroes, were destroyed, and only those persons escaped who happened to be absent from there.
The town. Their deacons were the people who formed one of the members of the sub-sequent Achaean cedentation.

After the Roman conquest of Greece, the term Achaea received an extension in its signification, principally due to the importance which the Achaean league had obtained. The word "Achaea" became a general term for all Peloponnesus with northern Greece south of Thessaly, perhaps not including Arcadia. But it is exceedingly difficult to fix the precise limits of the Roman provinces of Macedonia and Achaia. Nicopolis, a town which Augustus built near the entrance of the Gulf of Arta to commemorate his victory at Actium, is included in the province of Achaia, in a passage of Tacitus. (Annalu. I. 53.)

The towns generally preserved their own internal administration and the municipal power was put into the hands of the richer citizens.

Achaea was also an early name of the southern-eastern portion of Thessaly. [See Achel.

ACHEL. The Achei are first mentioned by Homer, as the ruling people of the eastern and southern-eastern part of the Peloponnesus. Among the chief cities in their dominions were Argos, Sparta, Mycenae (the capital of Argolis.) Corinth, Sicyon, and the island of Egina. Among the followers of Achilles to the war of Troy, Achaei are mentioned as well as Helenens; the latter name, in course of time, prevailed so far as to become the characteristic name of all that people whom we call Greeks. From comparing Homer with Strabo and Pausanias, we infer that the Achei inhabited the country of the ancient Thessaly, and that the war of Troy, according to Homer's notion, they were the ruling nation in a large part of the Peloponnesus, and the chief people in the war against Troy. The dominions of Agamemnon extended the whole extent of the Achaei, afterwards called Achaeans, which then was probably peopled by Ionians.

The old tradition, as mentioned by Pausanias (vii. 1), is, that Archelochus (leader of men) and Architeles (leader of bands) came to Argos from Tholus (otherwise called Plisthos) and married two daughters of Danaus King of Argos. From this time the name of Achaei prevailed in the Peloponnesus as a general name, though Homer also speaks of Argaei and Damai; the last name clearly having a reference to the ancient dynasty or royal family of Argos. The meaning of this story is, that a tradition prevailed that Argos and Mycenae were, at a period before the war of Troy, occupied by military bands from Phthiotis, and the prevalence of the name Achaei is to be attributed to the warlike character of this people. According to the Odyssey we find the Achaei at Thebes.

Eighty years after the war of Troy (B.C. 1104), a fresh band of invaders from the north, the Dorians, drove the Achaei from Laconia and Argolis. Those who did not become the domestic lords of the Peloponnesus became an inferior caste, and entered into the condition of a conquered people; but a large part retreated to the "Aegialian Ionia," and expelled the Ionians. From this date the name of Achaea was given to that province.

The history of the Acheans forms an inconsiderable part of the general history of Greece till about B.C. 231. During the invasion of Greece by the Persians, they took no share in the battles of Marathon, Salamis, and Plataea; nor, during the long war of twenty-seven years, did they take anything more than a kind of forced part in this protracted struggle between Athens and Sparta. At the commencement of this war (B.C. 339), they were, with the exception of Pellene, neutral; but afterwards fostered the Corinthian cause, in conjunction with the generally prevailing that prevailed in the peninsula. The cause of their taking no part in the general affairs of Greece may probably have been the want of union among the twelve little states; for the Roman power acknowledged a common origin, and had no kind of connexion, they seem not to have had any complete federal system. Yet they probably attained, at an early period, a considerable degree of prosperity and internal good polity, for we find that the Acheans founded several flourishing cities on the southern coast of Italy; and in several instances were considered preferable to those of most states, and were often imitated as a model.

During the struggles of the Southern Greeks against the北方 powers of Alexander, the Achaeans still wished to remain neutral; but, like all weak states in which they refuse to engage, they became the prey of the victorious party, and suffered under the Macedonians all the evils of anarchy and civil war. Some cities were compelled to receive first the garrisons of Demetrius and Cassander; and afterwards those of Antigonus Gonatas, but to submit to tyrants. There would be little in the whole history of the Achaean states to attract attention, were it not for the federal union which arose out of these discord-
ACH

examples of federal unions of various kinds, but none is more familiar to the ear than the Achaean, about which, however, our information is not complete, nor yet always preserved, so that the manor of what is known in brief a way as possible.

Each state had an equal political rank, retained its internal regulations, and its coins, weights, and measures, as we know from extant specimens, though the general government was established to prevent the results of this liberty, the Achaean League was, in the results of this liberty, the Achaean League, in the words of the Greek historian Herodotus (Book 1753, p. 349.4. Achaean, which has been conducted with great care, may be seen in the Encyclopedia Methodica Chimica, tom. 1. p. 459.

Achard, however, is chiefly known for his proposal to extract sugar from beet-root. Another Prussian chemist, von Griesbach, had discovered the saccharine properties of the beet-root, and Achard, in 1807, published a work entitled *Chemische Aufzeichnungen,* and proceeded to establish sugar factories in the Prussian provinces. His experiments were, however, not successful, and he gave up the project.

In 1821, he was the author of various works, written in the German language, on experimental physics, chemistry, and agriculture; and he was long an active contributor to different scientific journals, particularly the Memoirs of the Academy of Berlin. In 1810 he published at Berlin, a work entitled *Chymische Physiologische Schriften,* which contains a great number of experiments on the subject of the solubility of bones and teeth.

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geological facts whose writings have come down to us, who compares the increase of the Egyptian Delta, from the quantity of alluvium brought down by the Nile, with the effects produced by the deposits of the Achelous. In the time of Thucydides these islands were increasing so fast, that he predicts (ii. 102) all of them will be shortly joined to the main land; some, he says, were already attached to it. There is still, however, a great number of islands in the Acro Potamo, but whether some of them have been formed since the time when Thucydides wrote (which is above 2000 years ago), or are the same islands, which the Athenian historian tells us were unhabited in his time, we do not know. Nevertheless, a minute survey of these islands, and the lower course of the Achelous, together with the present workings of the river, will enable us to come to any probable conclusion as to the changes that have taken place about its mouth.

Achelous, a river of Thessaly, was at one time extant in the time of Thucydides that there were no islands at the mouth of the river a century before the war of Troy; yet, in Homer, we find the Echinades mentioned as sending troops to Troy, while the Echinades of Thucydidian time were unvisited. All this will tend to prove that the term Echinades was not always used exactly in the same sense as to the number of islands which it included, and also that very great changes had taken place near the mouth of this river. Were the localities examined by some competent person, we might in time be able to import into the history of the Achelous, as we have done before, a minute knowledge of the progress of deltas within given periods and under certain conditions.

Acheron, a small stream of Epirus, that runs into the Alpheus; better known for the importance assigned to it by mythology, than for anything else, is the neighbourhood of this river, says Strabo, they honour Ceres, Proserpine, and Hades. The Acheron was one of the rivers of the realm of the Hesperides, which was to be crossed. There was also a river called the Acheron, in Thessaly, a part of Epirus: this stream rises in the mountain range of Pindus, forms, in its course, a considerable lake, called Acherusia, and finally enters the sea, forming a large estuary, by Strabo, Sweet-port (Glyka-Linear, in modern phrase). There was a third river called Acheron, in Southern Italy. The name Acherusia was given to the Lucrine, or else to the lake of Avernus, in Italy; and the hot springs in the neighbourhood were supposed to be Pythogeneion, or the river of fire, in the infernal regions.

It is curious to observe how widely the name of Acherusia was diffused by the people of Greek stock, and was always connected with the supposed character of the world below. To Homer it appears to have been some local peculiarities, which fear, proceeding from ignorance in remote ages, turned into objects of superstitions veneration. Even on the coasts of the Euxine, near Heraclea (Ereklei), we find the city of Acherusia. The assumed Acherusia, as it appears, have descended to bring up the dog Cerberus. The Greek historian, Xenophon, who gravely reports this story, adds, what is more important, that there is there a deep charn, or ravine, running several hundred yards in length.

Achillea, a genus of plants, consisting of sixty or seventy species, found exclusively in the colder climates of the northern hemisphere. They are all herbaceous, perennial weeds, of little importance, except to botanists, and are only seen in cultivation in the flower gardens.

Achilles. One of the most celebrated characters of the mythic age of Greece; a distinction due rather to his having been selected by Homer as the hero of the Iliad, than to the producing by the dividends of the Iliad of the noblest and most beautiful name of the age. He belongs to that intermediate period between truth and fiction, during which it is generally hard to say how much is real—how much imaginary. In the circumstances of his life, however, as they are told by Homer, there is scarcely anything impossible, or even improbable, allowing for a reasonable quantity of poetical embellishment. Beyond Homer's account, however, everything is fabulous; and as poets seem to have regarded these mythic stories as fair ground on which to exercise their own taste, casting some thing consistent with what others had said before, it is not wonderful that the accounts of this prince, as of many others, abound in contradictions which it would be fruitless to try to reconcile.

The Achilles, as we find it in Homer, is soon told. He was the son of Peleus, king of Thessaaly, (see Achelus), and the adjoining parts of Thessaly, and of Thetis, a sea goddess, daughter of Nereus. He was educated by Phoebus, a refuge, at his father's court. Fate had decreed that, if he fell before Troy, he should gain immortality; but now he should enjoy a long but inglorious life. He chose the former alternative, and joined the Grecian army, in which he was pre-eminent in valour, strength, swiftness, and beauty. During the first nine years of the war we have no minute history of his part before the age of upon being and the general in-chief, Agamemnon, which led him to withdraw entirely from the contest. In consequence the Trojans, who before secretly ventured without their walls, now waged battle in the plain with various issue, till they reduced the Greeks to a hostile array. But Achilles, displaying his most influential members to oppose the anger of Palamedes, and to induce him to return to arms, but without effect. He allowed his friend and companion, Patroclus, to repair to his tent, to which Patroclus (Vulcan) gave his father, Peleus, to lead the Myrmidons, his followers, out to battle. Patroclus was slain, and stripped of these arms by Hector. Rage and grief induced Achilles now to return to battle. Thetis procured from Hephæstus a fresh suit of armour for her son, and before the close of a day of slaughter, killed Hector, and dragooned him at his chariot wheels to the camp (not thrice round the city, as in later authors).

Achilles Tatius, a Greek astronomer, who lived, probably, in the first half of the fourth century of our era, and wrote a treatise on the sphere. There is still extant a fragment of Achilles Tatius, entitled An Introduction to the Phenomena of Aratus, and to the Construction of Ptolemy. Sidus, the lexicographer, confines this Achilles Tatius with another of the same name, called by
AND THE CHEMMIS, who lived later, and wrote a Greek romance, The History of Leucippe and Clitophon. This Achilles was a native of Alexandria in Egypt, and though it is difficult to fix his era with any precision, we may assume him to be later than Heliodorus, whose romance served as a model to all the subsequent Greek writers of that class, as well as to Achilles. Probably, Achilles Tatius wrote near the close of the fifth century. His romance is in eight books, and is preferred by some of the earlier critics to that of Heliodorus, which latter, however, appears to us one of the most insufferably tedious stories that ever was written.

Later critics give the preference to Heliodorus. Those who have not the opportunity of reading the Greek romance writers, may form some idea of their subjects, and the mode of treating them, by the following description of the older romances of modern times, such as Apollonius, King of Tyre, on which the tragedy of Pericles, which, bad as it is, has been supposed to have had some touches from Shakespear, is founded. The Greek romance writers give us no vivid picture of the times in which they lived, but a distorted image of forms of society far anterior to their own age, without being able to infuse into them the spirit of historic truth. [Schoell, Hist. Greek Litt.—See an article on the Greek Romances in the Beaux Quarterly Review, No. 3.]

ACHIRI, in Ichthyology, a genus of flat-fish, belonging to the order Malacopterygii, and family Subbranchi, of Cetir. In external form these animals resemble the common sole; like the pleuronectes, in general, they have the body and tail very much compressed, and the eyes both on the same side of the head; but they are easily distinguished from all other genera of flat-fish by the total want of pectoral fins. These organs, it is true, are very much reduced as a rule, but there is a differentiation in the fins of ordinary fishes, they no longer perform the same functions in relation to the medium in which they move, but the stability of the animal's equilibrium is preserved, and its movements of locomotion performed, by the dorsal and caudal fins, instead of by the pectoral and ventral. Hence it is that the former fins always acquire an enormous development in flat-fish; being generally continued in an uninterrupted line from the head to the tail, and not unfrequently surrounding the whole body, of a pale bluish-white colour, sprinkled with innumerable small black spots, the body is covered with very diminutive scales, and the flesh is of a delicate flavour, and highly esteemed: it inhabits the coasts of the Isle of France. But the remarkable fact relating to this species is reported by Commerson, who informs us that the base of each of the rays of the fins, from which issues, upon pressure, a milky fluid of the consistency of olive oil. We are entirely ignorant of the purposes which this fluid serves in the economy of its animal, under its own laws, its uses, and probably is under the control of the creature's volition, and may assist it, in some manner, either in capturing its prey, or in eluding the attacks of its enemies. The Achirus Paronius is distinguished by the beauty of the fins, which, like those of the preceding species, form a close body; and the Fasciculatus and Bilineatus are easily recognized by the characters from which they respectively derive their names. The former is found on all the coasts of America and the West Indian isles; the latter inhabits the shores of China, and feeds upon small crustaceans and molluscs. It has a long intestinal canal, with numerous redundations; its jaws are armed with short obtuse teeth; and each of its nostrils has two distinct orifices. Various other species are found in the Atlantic and Indian oceans: they are enumerated in a note, vol. ii. p. 343, of the second edition of the Régne Animal, and described at length by Lacepede, and other writers upon ichthyology. To these species we must refer some of our remarks upon the importance of further information regarding the external forms, and specific differences of the achiros. All that is known of their habits and economy has been brought together in the present article.

ACHMIN, or ACKMIN, a town in Middle Egypt, N. lat. 26° 38', on the right bank of the Nile, with which it is connected by an ancient canal. Achmin contains above 3000 inhabitants, who manufacture some coarse cotton cloth; 3000 are Catholic Copts, who have a large church. This town is the Chemnis of Herodotus and other Greek writers, the Arabic name, Achmin, being formed by prefixing the letter A, which we find to be the case in many other names. Herodotus mentions a large temple here with colossal statues of the present age. At a short distance from this temple are the supposed remains of two temples to be seen at Achmin, and on an architrave, at this place, a Greek inscription has been discovered, which contains a dedication to the god Pan; thus confirming the opinion that the Panopolis of the later writers is the old Chemnis of Herodotus, a name which endures to the present day. The mills in the neighbourhood of this town are full of excavations, which perhaps originally served to receive the mummies of Chemnis, and afterwards to shelter the Christians during the tumults of Diocletian. [See Egypt, Society—Ritter, Afric.]

ACHRAS, a genus of tropical plants belonging to the natural order Sapotace. The name strictly belongs to the wild pear, and seems to have the same derivation as the odpowied of the ancients, thus, and other words indicating something prickly. Linnaeus, with a capriciousness too usual with him, gave it to this West Indian genus, which has nothing whatever in common with the pear.

GENERIC CHARACTER.

Calyx divided into six parts.

Corolla monopetalous, divided into six lobes.

Stamens twelve; of which six are sterile, and six fertile.

Ovary with from six to twelve cells.

Fruit resembling an apple, with from one to twelve seeds, contained in hard bony nuts, which have a shining coat, and a long hard scar over the whole of their inner angle.

The genius contains only one species, which yields a copious milky fluid when wounded. Its leaves are entire, leathery, undivided, shining, of a lanceolate form, without stipules. The flowers are large, white, bell-shaped, and grow singly from the axils of the leaves. This is called the Wild Pear, the West Indies, which is one of the most abundant inhabitants of New Spain. The fruit in size and shape resembles a bergamot pear: like the medlar, it is only eaten in a state of decay; before that period it is soest and unpalatable, but in the present state it is so delicious, as to be considered only inferior to the orange. For other presumed species of Achras, see Lucuma.

ACHROMATIC. An optical term, derived from the Greek, and signifying 'without colour.' It is used in speaking of telescopes and other combinations of glasses, to designate those which are so contrived that the light which
is broken into various rays of different colours by one glass, is recollected, or nearly so, by another: so that the image does not present those coloured fringes round its edge, which are always observable in bad tele-scopes.

It is well known that light may be dispersed into various colours by passing it through glass, or any other transparent substance, the sides of which are not parallel to one another. [See Society’s Optics, ch. viii. ix.; also the articles Prism, Spectrum]. This is, whenever an object (1), (2), and (3), in common lens, there are, in fact, several images which arise from rays of different colours being collected at different points, as follows—

**Fig. 1.**

_\[ A \]_ is the section of a double convex lens, which may be made by the revolution of the figure _\[ A \]_ about the axis or. We suppose rays to fall upon it coming from a point in the axis or so distant from the lens, that they may be considered as parallel. The light in passing through the lens is refracted; these, the rays of each separate colour or ray directed nearly to the same point, the violet rays being brought nearest to the glass at _\[ v \]_, and the red rays being farthest from it at _\[ r \]_. Between _\[ v \]_ and _\[ r \]_ will be scattered a number of images of those colours which lie between the violet at _\[ v \]_ and the red at _\[ r \]_. This we observe two distinct effects. First, the general _refraction_ of the rays, by which they are bent so as nearly to meet in one point. This is usually measured by the _mean_ ray, or the colour which falls in one point. To find the index of each of these, we will consider the effect of the _mean_ ray first, and then of the different substances, has the _mean_ ray the same, it does not follow that the dispersive powers of the two are the same. If _\[ C \]_ should happen to be in the first substance double of what it is in the second, _\[ v \]_ being the same in both, the dispersive power of the first would be only half that of the second. The dispersive power is found thus:—Divide the difference between the refractive indices (see _Refraction_) for red and violet rays, by the index of the _mean_ ray directed to the _mean_ of the two, and we have the dispersive power of the two, and that of the _mean_ ray directed to the _mean_ of the two, and we have the dispersive power of the two, and that of the _mean_ ray directed to the _mean_ of the two, and we have the dispersive power of the two. To make _\[ A \]_ achromatic, we must find another substance, differing from the substance of _\[ A \]_, so that some lens of it, placed before _\[ A \]_, will collect the light scattered by _\[ A \]_, and make it bring the rays together, and thus become parallel to one another. To do this we first lay down the following rules for computing the distance of any one image from the centre of the lens, or what is called the _focal distance_ of that image. These may be seen more at length in the art. **Lenses.**

_\[ I \]_. There are six species of lenses, made by the revolutions of the following figures about the axis—

**Fig. 2.**

(1) is called double convex; (2) plano-convex; (3) plano-concave; and (4) is called concavo-convex; but the name is usually applied to (4) only, in which the concave side belongs to the smaller circle; while (3), in which the concave side belongs to the larger circle, is called the _meniscus_. In (5), (6), (7), and (8), the convex and concave rays are made to converge as in _\[ I \]_, that is, they are actually collected on the other side of the lens: in (4), (5), and (6), on the contrary, they are made to _diverge_,—that is, they are not collected at all, but proceed as if they came from some point on the same side of the lens as that on which they fell; the general rule is, that those with sharp edges make parallel rays converge, while those with flat edges make them diverge. It is usual to give the name of _concave_ to the sharp-edged, and of _converge_ to the flat-edged lenses.

**Fig. 3.**

III. To find the focus, that is, either the point at which the rays really do converge, or that from which they appear to diverge, divide the product of the radii of the surfaces by their sum, when both sides are of the same name (that is, for the meniscus or _conca--convex_), and divide the quotient by the refractive index of the substance, diminished by unity. The result is the distance of the focus from the centre of the lens. When one side is plane (as in the plano-convex and plano-concave), divide the radius of the other side by the refractive index diminished by unity. For common glass the refractive index is nearly 1.5, or, according to Dr. Brewster, varies from 1.53 to 1.56 for flint glass, from 1.525 to 1.563 for crown glass, and from 1.576 to 1.612 for flint glass. This, diminished by unity, is nearly 1 in all cases, and dividing by 1.5 is the same as multiplying by 2.

IV. When two lenses are placed close together, one of which has sharp edges and the other flat, and parallel rays fall on the two, as in the two figures, the focus of the two together falls on the side of the stronger, or of that which has the least focal distance. When both edges are sharp or both flat, the focus of the two falls on the same side as that of either lens. In this case we make the lenses achromatic by the addition of another, involves a process of reasoning which we shall omit, and merely give the result:

1. No such single additional lens can give entire achromatism or absence of colour; it can do is to bring some images of different colours into the same place. If we choose to bring the two extreme images together, the remaining ones, though not actually brought into the same place, are placed as described above, and while one of the remaining images, that for practical purposes, the object of whose surfaces are 6 and 8 inches, the product of 6 and 8 divided by the sum of 6 and 8 is 3 inches, and _\[ j \]_ of an inch nearly, and twice this quantity gives 6 inches and _\[ j \]_, or 4 inches nearly, for the focal distance of the lens. When both edges are sharp or both flat, the focus of the two falls on the same side as that of either lens.

V. The focal distance of such a compound lens is found by dividing the product of the single focal distances by the sum, when both are sharp or both flat; or by the difference when one is sharp, and the other flat. To make the lens achromatic by the addition of another, involves a process of reasoning which we shall omit, and merely give the result:

2. A lens of the convex species, a double convex for instance, may be made very nearly achromatic, by applying to it one of the concave species, which fits one side of it exactly, so that the section of the double lens shall be one of the following—

**Fig. 3.**

provided the materials of the two lenses have different dispersive powers.

The rule is:—Let the focal lengths of the two lenses be in the same proportion as the dispersive powers of their material. The substances usually employed are _crown_ glass and _flint_ glass; the former for the convex, the latter for the concave lens.

The dispersive power of flint glass is nearly double that of crown glass; while the refractive powers of the two are nearly the same. The mean power of the mean of the _crown_ glass and _flint_ glass, is nearly the same as that of the _conca--convex_ lens, which is the mean of two opposite kinds of glass, of 10 feet focal distance for the mean image, which we wish to achromatize by a lens of flint glass, the refractive indices being as follows—

<table>
<thead>
<tr>
<th>Crown</th>
<th>1·526</th>
<th>1·343</th>
<th>1·547</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flint</td>
<td>1·623</td>
<td>1·637</td>
<td>1·666</td>
</tr>
</tbody>
</table>

The dispersive power of the crown glass, or, as before explained, the quotient of _"_2_, the difference between the red and violet refractive indices, divided by _"_2_, is _"_2_. That of the flint glass, or _"_3 divided by _"_3, is _"_3_. Hence, _"_ is to the focal distance of the lens required as _"_ to _"_ or as _"_ to _"_, which gives 17 feet 2 inches nearly, so that the focal length of the whole lens, found by adding _"_ to _"_, is about 19 feet 2 inches. If the focal length of the concave lens be too short for the purpose, the defect may be remedied by separating the lenses a little, instead of putting them close together.

By the preceding account, some idea may be formed of
ACIDS. The acids are a numerous and important class of chemical bodies. As the word acid is, in common language, almost synonymous with sour, it might be supposed that the taste of a substance would determine whether it was included among the acids. The term has, however, been so much extended by chemists beyond its original meaning, that some bodies, which are nearly or quite devoid of sourness, are considered acids, because they agree with them in some other qualities. The word is, however, really sour; usually, but not universally, they have great affinity for water, and are readily soluble in it; they redden most vegetable blue colours, and combine readily with alkalis, but not with the earthy metals, or their oxides, with great facility. These are the properties of the greater number of acids; but the last only—namely, great powers of combination—belongs to them all. Many acids are entirely natural products, some both vegetable and animal, and are formed by a variety of circumstances. The means adopted for preparing the acids, whether from the natural compounds which contain them, or by the direct combination of their component parts, are almost as various as the acids themselves. Some are employed in obtaining them, and of the numerous and important purposes to which the acids are applied in medicine, science, and the arts, or for domestic uses, we refer the reader to each particular acid.

It may be here noticed the method adopted by the framers of the French nomenclature, in giving names to different acids. It has been already mentioned, that oxygen was supposed to be the acidifying principle, and it was found that, by combining in different proportions with the same element, a number of very different properties; but it was not then known that oxygen combined with any one body to form more than two acids. It was, however, proved to unite with sulphur in two different proportions; and in this, and similar cases, the name of the acid which contained least oxygen was made to end in oux; and that which contained more in ic; thus sulphuric acid contains less oxygen than sulphuric acid.

Cases have, however, occurred during the progress of chemical science, requiring an extension of this principle: an acid has been formed which contains less oxygen combined with sulphur than in the sulphuric, and this is called hyposulphuric acid; and another containing more oxygen than the sulphuric, but less than the sulphuric, and this is termed sulphuric acid. An acid has also been formed which contains more oxygen than the chlorine—this has been called perchloric acid: the term is objectionable for reasons hereafter to be stated; azochloric is a better, and azochromic the better term. Although the names of the present work some acids of minor importance will occasionally be mentioned, the following are those which, as being used either in scientific researches, in medicine, or the arts, will be more particularly treated of in their respective places:

Acetic
Fulminic
Nitrus

Antimonious
Fulminic
Nitrus

Antimony
Gallic
Oleic

Arsenic
Hydric
Oxalic

Arsenious
Cromic
Oxalic

Benzoe
Hydroselenic
Phosphoric

Boric
Hyponitritus
Phosphorous

Bromic
Hypophosphorous
Pyrophosphoric

Carbamic
Hyposulphurous
Sulphurous

Carbonic
Hyposulphurate
Sulphurous

Chloric
Iodic
Selenic

Chlorotic
Kinie
Selenious

Chloruric
Laetic
Sulphurous

Chloruric
Laetic
Sulphurous

Chloruric
Laetic
Sulphurous

Chromic
Malic
Sulphurous

Citric
Manganesic
Sulphurous

Columbic
Manganesous
Sulphonic

Cromic
Manganesic
Sulphurous

Dichromic
Molybdeic
Sulpho-ortic

Flouric
Mucic
Tartaric

Fluosilicic
Muratic
Titanic

Formic
Nitro-muriatic
Tungstic

Soon after Dr. Priestley's celebrated and important discovery of what he called "deplogisticallyticated air," in 1774, it was found that several substances, such as sulphur and phosphorus, were converted into acids by combining with this element. On this account it was assumed, hastily and incorrectly, that all acids contained deplogisticallyticated air, and derived their acridity from it; on this account the name oxygen was given to it, signifying acid-making, and it was regarded as the universal acidifying principle: not, indeed, that it always formed acid when it came into contact with a body, but that no acid existed without it. It has, however, since been found that there are acids, the muriatic acid for example, which contain no oxygen: and, further, it has also been proved, by the brilliant discoveries of Sir H. Davy, that oxygen, by combining with certain elements, converts them into alkalis; a class of substances possessing properties diametrically opposite to those of the acids.

Although, as already mentioned, oxygen or hydrogen is present in almost every acid, yet on account of the very different classes of bodies of which they frequently form a part, they are not regarded as acidifying principles: acidity, like form, colour, and other less obvious properties, is to be considered as the result of chemical action and combination, and not as derived from the properties of these elements.
ACONITE, WINTER. [See Erantis.]

ACONITUM, a genus of poisonous plants belonging to the natural order Ranunculaceae. From very early times, it has borne the same name, and has been known for the dangerous properties of many of its species. They are all hardy, herbaceous plants, many of them of great beauty, and cultivated as ornamentals, and one of them, A. napellus, is found in every cottage garden. The English call them Wolf's-bane, which name corresponds with the French tue-tout (kill-wolf). From all other ranunculaceous plants, Aconitum is at once known by its having the very large uppermost segment of its calyx, changing the petals and other parts in the form of a helmet.

The common species, *A. napellus*, is one of those in which the greatest degree of virulence has been found to reside.

It is a native of Alpine pastures in Switzerland and other mountainous parts of Europe. Its leaves are very dark green, deeply cut into from five to seven long segments. The stem is about three feet high. The flowers are in long stiff spikes, and of a deep blue colour; they appear from May to July. All the parts of this plant are extremely acrid, especially the roots, which are scraped and mixed with food to form a bait for wolves and other savage animals. According to the observations of Orfila, the juice of the leaves introduced into the stomach occasions death in a short time; the root is far more energetic. The poison acts upon the nervous system, especially the brain, producing a sort of phrenzy.

These properties are probably found in all the species of the genus, *A. cammarum*, *hyoscyamus*, and *antaba* are certainly equally dangerous. None of them, however, is *A. napellus* itself, can be compared for fatal energy with the dreadful *Bick* or *Bath* of Nepal, the Aconitum of the Ancients, which seems to possess the concentrated power of all the European species.

ACONITAS, in Zoology, the name of a genus of serpents established by Baron Cuvier, for the purpose of distinguishing certain species hitherto confounded with the *Agrus*, or common snakes, but which recent observations have proved to differ from these animals in their habits and internal anatomy. The family of serpents, which Cuvier designates *Agrus*, differs from all other apodal (footless) reptiles in certain peculiarities of osteology and internal structure, whereby they approximate more nearly to the lizards than to the true serpents. Some writers have even gone so far as to include them among the genera of the lizard family, whilst others are more inclined to consider them as forming a distinct and separate family of themselves, intermediate between the two. In fact, the generality of these animals, though externally deprived of feet, have yet an imperfect pelvis and a complete sterno, omolopate (shoulder-blade) and clavicle, concealed beneath the skin, and their bodies are uniformly covered, both above and below, with small scales, as in the common lizard; and the osteology of the head is in all respects similar. But these characters, so uniform in the genera of the family *Agrus*, are for the most part wanting in the Aconitas, which are thereby distinctly distinguished, and form, as it were, the passage from the common snakes to the true serpents. It was upon these considerations that M. Cuvier was induced to establish this new genus. It is characterised by the absence of all the bones which represent the extremities in the other angues, while it retains the structure of the head common to these animals and to the lizards, and has the body similarly covered with small scales only, without the bony plates which guard its under surface in the common serpents, and protect them from injury in the various rapid motions which they perform.

As might naturally be expected from this conformation, the parts in most danger of the Aconitas are very different from those of common serpents. They do not glide along the surface like these animals, but boldly carry their heads and breasts erect, and if closely pursued defend themselves courageously, and dart with the velocity of an arrow against their assailants. They are confounded with their venomous congeners, these animals are perfectly harmless, and neither possess the means nor have the desire of being injurious. They have no poison fangs, and their teeth are so small as, in some species, to be barely perceptible. Their habits are gentle; and they are so timid that they generally fly at the least noise, or, upon the slightest appearance of danger, conceal themselves under some shrub or tuft of grass, or even bury themselves underground when no other refuge is at hand.

The species belonging to this genus are, generally speaking, of a small size; and, as their mouths are not susceptible of the enormous dilatation possessed by the true serpents, they are incapable of swallowing any animal approaching to their own dimensions, and feed upon worms and insects. Different species of *Aconita* are found in almost every part of the old world. The and plains of *Straits* of *Palestine* produce a species which has been mentioned by the prophet *Isaiah* (c. xcviii. v. 14), under the Hebrew denomination *Kippoth*, improperly translated *the great or evil* in our common version of the Sacred Scriptures, but which the learned *Barth* (Herbarium, part post. lib. iii. cap. x.) has shown to refer more properly to the *Aconita* or *Agrus* javanicus, the arrow or dart-snake of the Greeks and Romans. Other species inhabit Asia Minor, Egypt, and Persia; their singular mode of progression could not fail to attract the attention of the ancients, who often mention them by the appellation which M. Cuvier has lately revived. India and China have also their *Aconitas*; and the Cape of Good Hope produces a species without eyes.

Of the Common *Aconitas* many fables are recorded by ancient authors, principally arising from confounding this really harmless species with the more deadly and venomous serpents of the same localities. *Agrapharides*, *Doborases*, and *Strabo*, call the *Aconitas* the most poisonous of all serpents, and consider its bite to be absolutely incurable. *Kilian* relates that it will occasionally spring to the distance of twenty cubits; *Galen*, *Isodorus*, and others, say that it burks among the branches of trees, from whence it dart suddenly upon whatever animal happens to be near; and *Avranza* even adds, that it propels itself with so much force in these formidable springs, as to bury itself, like an arrow, in the body of its victim. All these fables, and many others recorded of this serpent, plainly arise, partly from the habits and mode of progression peculiar to the *Aconitas*, and partly from confounding it with the *Cerastes*, or horned viper, the *Dipas*, *Asp*, and other Egyptian species. Nor have the poets failed...
to contribute their share to the genera, stock of wonders raised of this animal. Lunean, for instance, often mentions it with many of the attributes above recorded; and indeed its natural habits, without the aid of imaginary qualities, are too remarkable to be overlooked, even by the most inattentive observer.

It is no part of our plan to give a complete enumeration of the species which have been described as belonging to this or any other common genus of reptiles. Such a dry and formal catalogue would possess few charms for the general reader, and be of little use to the scientific zoologist. We must, therefore, refer those who are desirous of further information concerning the names and descriptions of these serpents, to the works of Merrem, Schneider, Lacepede, and Daudin, where their curiosity will be amply gratified.

ACORINÆ, in Botany, a section of Aroidem, which see.

ACORN, the English name of the fruit of the oak. [See Quercus.]

ACORUS, the botanical name of the plant that produces the drug called in the shops Calamus aromaticus. It belongs to the natural order Aroidem, in the acrid properties of which it partakes in a slight degree, and is found abundantly in the fresh-water marshes of many parts of England. It has a perennial, creeping, horizontal stem, as thick as the finger, the whole of the under side of which emits roots into the mud or soft earth, in which the plant uniformly grows. From this spring many deep-green, sword-shaped leaves, about three feet long. In the midst of all is a leaf-like stem, from below the point of which protrudes a cylindrical, or rather conical, spadix of greenish flowers, which are so closely packed together, that the stalk is not to be seen. The leaves when bruised are fragrant; for which reason they were formerly employed to strew the floors of monasteries, or of churches, under the name of rushes. This practice is still maintained in some places, where the plant is common, as at Norwich, the cathedral of which city is strewn with sweet rushes upon certain high festivals. The flowers are so seldom produced, that it is a common belief that they never are borne. Calamus aromaticus is slightly aromatic, and is occasionally used as a stimulant; but is of very little importance. The part employed is the dried creeping stem, or, as it is improperly called, root.

of fourteen, entered the Society of the Jesuits, to which his four elder brothers already belonged. He was remarkable, while pursuing his academic studies, for his diligence and his rapid progress both in literature and science; and on finishing his course, he became Professor of Theology at Orauia. This situation he retained till 1571, when he was dispatched as a missionary to South America. He was eventually made provincial of his order at Peru; and did actually return to Spain in 1588. During his residence in South America, he had employed part of his time in writing an account of that continent, which was published at Seville, in 4to., in 1590, under the title of Historia Natural y Moral de las Indias. This book was four times reprinted (the edition of 1591, in 8vo., having received considerable corrections and additions from the hand of the author), and is highly esteemed as an authority on the early condition of South America. It has been translated into French, Italian, German, Dutch, and English. The English translation, which appeared at London, in 4to., in 1604, and again in 1684, bears to be performed by E.G., supposed to be the initials of Edward Grimes. There is also a Latin translation of the work in Part IX. of De Bry's Collections Posthumous of Dr. John D'Amia in Indiam. Acosta, after his return to his native country, became a great favourite of Philip II., and had successively the dignities of Visitor of his order for Arragon and Andalusia, Superior of Valladolid, and Rector of the University of Salamanca. While he was Rector, a visitation was made under his direction, which began on the 15th of February, 1600. Besides the work he has mentioned, he is the author of another on the same subject, published in 1589 in Latin, under the title of Historia de Indias, et del Natural y Moral de las Indias, translated by himself into Spanish, and inserted in his history. He is also the author of several theological treatises; and, among the rest, of a volume of sermons, in Latin—[Memoriae—Bibl. Univ. — Robertus Acosta. Bibl. Scriptor. Soc. Junci, a Ribadeneyra, Allogambe, et Sobesello.]

ACOTYLEDONES, or ACOTYLEDONÆ, the name of the first class in Jussieu's Natural System of Botany. It is derived from the circumstance of all the plants which it comprehends being without the aid of the seed lobes called cotyledons. Such plants are also in all cases destitute of flowers, and are in fact the same as what Linnaeus called Cryptogamum. It having been found, by more recent and exact observations—1. That many plants, that really do bear flowers, have no cotyledons; and 2. That all flowerless plants are altogether destitute of seeds, so that they might as well be named aspermous as acotyledonous, because cotyledons can only be present in seeds strictly so called, the term Acotyledones has fallen into disuse, and Cellularæ has been substituted for it, which see.

ACOUCHY, a small species of Cavy, sometimes called the Surinam Rabbit (See Acousta.)

ACOUSTICS, a word derived from the Greek, and signifying, the science of hearing. In treating this, and all other general scientific terms, we shall confine ourselves to the elucidation of those first principles, without which the applications cannot be understood; noticing the applications only so far as their mention can be made serviceable in explaining and referring to particular articles for more specific information. Thus the reader must consult the articles Pipes—Chord—Vibration—Harmonic—Waves—Trumpet—Ear—Larynx—Echo, &c., for many explanations, which it would be necessary to insert here, if we were writing a treatise on acoustics.

We need not say what sound is, or dwell on the fact that some sounds differ only in intensity or loudness, as the reports of a cannon and a musquet; others in musical pitch, as two notes of the same instrument; others again in character or tone, or, as the French call it, timbre, such as the drone or the whistle of the flute, or trumpet. This being understood by all, we proceed to inquire what is the agent in conveying these different sounds to the ear; in what ways it is acted upon in sounds of different loudness, tone, or character; and how far we can explain a most remarkable phenomenon, though not generally believed to be such, on account of the frequency of its occurrence, viz., that we can hear and distinguish, at the same time, almost any number of different sounds. Fortunately, our knowledge is limited by the nature of the question, which requires the improvement of one of the most difficult branches of mathematical analysis; and by our very imperfect knowledge of the constitution of matter, and the
effect which putting in motion some particles of a body has upon the rest. Strictly speaking, we ought to say that sound has no existence except in the ideas of the hearer; but for the moment we will, containing, and not as the elation of a body as sounding when it is in that state in which it would produce the impression of sound, if the proper medium were placed between it and the ear.

No body can produce a sound, as we know from observation, unless it be put into some kind of motion. We have evidence of this in a tuning fork, the string of a musical instrument, the parchment of a drum, etc. Neither will any sound be perceived unless there is a continual supply of new matter, possessing the properties of elasticity, between it and the ear. Thus a bell, when rung in an exhausted receiver, hardly yields any sound; and the small portion which it does give may be altogether destroyed or materially diminished by lining the receiver with cotton or wool. The air is generally the medium through which sound is conveyed; but only because this is most commonly the one with which the tympanum or drum of the ear is in direct communication. A bell rung under water has been very well heard at a distance of 1200 feet by an observer with his head under the same body of water; those who work in one shaft of a mine can often distinctly hear the sound of the pickaxe in another shaft through the solid rock: and persons wholly deaf, who therefore are not at all affected by the ear, have received much pleasure from the sound of the air in the pipes, by placing their hands upon a shutter or other solid body near the instruments. We confine ourselves particularly to what takes place in air.

The body which surrounds us produces no sound if it be all moved together, that is, if the velocity of all its particles be the same. The highest wind makes no noise except when it is forced against some obstacle, and the sound of a cannon is heard in whatever direction the wind may blow. Neither does the strongest blast of musketry produce any sensible sound in any direction. It is therefore unto some other sort of motion that we must look for the agent of sound, and the manner in which sonorous bodies move immediately points it out. If a tuning fork or a string be struck, a rapid succession of vibrations occurs; the consequence, which, as we shall see, causes the particles of air to vibrate in a similar manner. And we find, that in order to produce a note, not only must there be a succession, but a rapid succession, of vibrations; experiments show that the ear is not capable of receiving the impression which we call sound, unless the particles of air in contact with it vibrate at least thirty times in a second. The vibration produced in the particles of air by a sonorous body may be distinctly proved by the following experiment. Let a tuning fork be sounded, and while yet in vibration, let it be stopped by the finger. A sensation will be felt for an instant, for which we have no name in our language, arising from the pong of the fork rapidly, but gently, striking the finger, and very different from that produced by merely touching the fork when at rest. Now, blow into a common flute, stopping two or three of the higher holes, gently. The same sort of sensation, though in a much smaller degree, will be felt on that part of the fingers' ends which is in communication with the interior air. The fingers should be warm, and if the observer be not used to the instrument, the effect is made more certain by tuning the string of a violoncello to the note which is to be fingered on the flute, and then sounding the former strongly, while the latter is held over it, with the fingers placed as before. That any very violent and sudden noise produces a concussion in the air even farther than the sound can be heard, is proved by the fact, that the explosion of a large powder will shake the windows in their frames for nearly twenty miles round.

We now proceed to describe, as far as the same can be simply done, the motion which takes place in the air when the impression of sound is communicated; and here we stop to explain a method of making the eye help the reason in many cases. Suppose we wish to register what takes place in the vibration of a spring, of which the position of rest is ab, but which, having been set in motion, (Fig. 1) passes through all positions between ac and ad. The spring being at ac, and the finger or other disturbing cause being removed, the elasticity of the metal makes continued efforts to restore it to its first position ab, and its tension commences to press upon the spring c; the tension will gradually destroy the very nature of the air as it was before gradually created; so that when the spring comes to a d, it will be again at rest, but will not continue so, since the elasticity of the spring resists the process of decay, and the spring will move back again towards ac. But if friction and the resistance of the air it would again reach ac; it does not, however, get so far, owing to these causes, which always diminish, and never increase, velocity. The alternating motion will no longer be a state of rest. Similar phenomena occur in the motion of a pendulum, of the string of a harpsichord, and generally, wherever small vibrations are excited in a body, which if it, but not must from its position of rest. We might, perhaps, conclude, that each successful oscillation is performed in a shorter time than the preceding, seeing that a less space is described by the spring. But this is not the fact; it can be observed, as well as demonstrated, that the effects of small disturbances of the spring are never felt in the friction of a small disturbance and resumes the state of rest, are severally performed, if not in the same time, yet nearly in the same time, that the difference may be entirely neglected in most practical applications of the case. Irrespective of this, it being the case, we may omit the effects of friction and resistance, so far as the time of vibration is concerned, and consider the spring as describing exactly the same path in each successive vibration.

Let to be the line described by the top of the spring, which we may call a straight line, since it is very nearly so, and while the spring moves from b to c, imagine a curve d c drawn, in such a way that, the spring being at x, the perpendicular y is the rate per second at which the top of the spring rises or falls, being the curve which we have drawn represents the various changes of motion just alluded to: thus the greatest perpendicular in the point b is the spring moves fastest; and at b and c there is no perpendicular, the spring coming to rest when it reaches these points. During the return from c to a, in which the motion is the same, but in a contrary direction, let a similar branch c t be drawn, on the other side of c d. We will call the whole curve d c t the type or plan by which the spring proceeds from the position of one of its two halves. Now, suppose a column of air inclosed in a thin tube ab, which is indefinitely extended towards b, but closed at a by a piston which moves backwards and forwards from a to b, and from b to a, the spring in the same manner, the type of motion being represented by the curves on ac. And first let the piston be pushed forward from a to c. If the air were solid, we should say that a column of air ac in length would be pushed out of the end b of the tube (Fig. 2), in the time in which the piston is driven in. As to how far we should be justified in saying so, we refer the reader to the article Elasticity; it may perhaps have no notion that such an effect would be produced upon a column of elastic fluid like the air. Experiment, as well as mathematical demonstration, show us that though every particle of the fluid will finally be put in motion, yet that those particles which are nearer the disturbing cause, and have their first impressions sooner, in those which are more distant; and we find that this successive propagation, as it is called, of the disturbance, goes on uniformly at the rate of about 1125 feet in a second, the length being that of Fahrenheith's tower, which is 125 feet distant from a, and will have its first news, so to speak, of what is going on at a, and in the same proportion for other distances. It is also shown that the velocity of propagation is affected by the greater or less degree of violence with which the air is struck, but remains the same for
every sort of disturbance. With such a velocity, we may
see that the column of air made up of all the particles which
feel, or have felt, the effects of the disturbance, must be very
long when compared with a, the extent of an almost in-
sensible vibration; so that it will lead to no sensible error
if we suppose that the effect of the piston on the whole of
its course is propagated simultaneously to a, and from plen-
ously, with the velocity of 1125 feet per second. We will
now consider what this effect is. Divide the whole length
AC, fig. 3, into a large number of very small parts, described
as equal parts, and let the division of the piston coincide
fully, and with imperceptible changes of velocity, along a, cy
let it move by starts from each point to the next, with the
proper increase or decrease of velocity. In the figure we have
divided the piston into several parts, and have supposed
plies to any greater number, and the reader may refer to
Acceleration for an instance in which the truth, as re-
gards motion gradually increased, is come at by a similar sup-
position. We have much enlarged AC (Fig. 3), to give room

for the figure: the reader may help his ideas by supposing that
AC is viewed through a powerful microscope, and the rest of
the tube by the naked eye. Whatever may be the common
time of the propagation of the parts of the waves, a, b, c, &c.,
the portions of the column affected by the starts of the
piston will be of the same length, and each will be as much of
1125 feet as the time of each start is of one second. Set off
the lengths aP, bQ, cR, &c., each equal to this length, and
for the present let us suppose all the common times at which
the piston starts through a1, 12, &c. an instant. The
reader must bear in mind throughout that we intend to carry
the supposition of dividing AC into parts to its utmost limit,
by which we shall have to suppose also aP, bQ, &c., very
small though still great when compared with a1, 12, &c. We
also think it right to repeat, that all the figure on the left of
C is immensely magnified, and that the propagation is sup-
posed to be instantaneous from 1, 12, &c. to c. In the first
instance, the piston moves through a1, with the velocity of
per second, and forces the column of air a1 into cP, which,
therefore, has its density increased, or is compressed, the air
which was held in CP and 11 toger being now confined in
CP. As this propagation has not travelled farther than P,
the effect is just the same as if there had been a solid obstacle
at P during the first instant. The portion CP is then com-
pressed, strictly speaking, unequally, that is, the parts near
to c are more compressed than those near to P; but on ac-
sco~ the smallness of aP, and the timeliness of the transmi-
sion, we may suppose all the parts equally com-
pressed. Again, the particles near C begin to move towards
P, and for a similar reason we may suppose the velocities of
particles at the same; this velocity being that of a
during the first instant. The reader must consider that the
absolute velocity of the several particles, which is always
small, with the rate at which they transmit their velocities
and compressions, which is very great. We will use the
plurale that the portion CP has received its first compression.
If the piston was stopped at the end of the first instant, the
whole effect upon CP would be transferred to PC in the
second instant, both as to compression and velocity, and the
particles CP would return to their first state, and receive no
further modification. But in the second instant, the por-
tion CP receives its second compression, which is greater
than the first, since a column 12 longer than a1 is forced into
CP. Similarly the velocity is increased, being 2 per second
instead of 1. If the spring were then stopped, the third
instant would see the portion PC transmit its velocity and
compression to Q, CP to PC, and CP would resume its
natural state. But in this instant, CP receives its third com-
pression, which is greater than the former two, and the
same process goes on, so that the portion transmitting its velo-
cy and compression to the succeeding one, receiving in its turn
more than is parted with, from the preceding. This continues
until the piston has reached the middle point of AC, after
which the compression of CP still continues, but becomes
less and less in successive instants, because 56, 6, 7, &c.
down to 9, decrease in length, in the same way as A1, 12, &c.
increased. When the piston begins to return to 9, in the thir-
denth instant, the portion CP receives its first recom-
pression; for the air in CP now occupies CP and CP;
as in the figure below, which we proceed to explain.

(Fig. 4.)

In fig. 4 (1), the piston has travelled from A to the small perpendicular, through something more than a quarter of a vibration: the first disturbance has reached D, and the curve PB is the type of the state of each particle as to velocity; that is, the perpendicular PG is the rate per second at which the particle P is moving from C, and the same for every other perpendicular.

If the piston be performing its third complete vibration, or its second vibration forwards, there will have been a preceding series of compressions and rarefactions propagated forwards, as in the figure 4 (1). In fig. 4 (2), a vibration forwards has been completed; the curve on CD now represents a complete undulation, as far as the compressions are concerned. In fig. 4 (3), the return of the piston has commenced, and the particles between c and d are rarefied, and moving towards c; this we explain by placing the type beneath the tube, and drawing the curve; FG expressing the velocity per second of the particle F towards C. The length of the whole wave CD is easily calculated. If, for instance, the single vibrations of the piston are made in $\frac{1}{4}$ of a second, the first impulse will have travelled through one hundredth part of 1125 feet, or $\frac{11}{12}$ of a foot. This is the length of CN, in fig. 4 (2). The complete series of compressions is called a wave of compression; and that of rarefactions a wave of rarefaction. And the same type which represents the eye the velocities of the various particles, will also serve to represent the degrees of compression or rarefaction. For those particles which are moving quickest from C, are most compressed, and those which move quickest towards C are most rarefied. In returning to figure 3, we see that A, 1, 2, 3, &c., are spaces described in equal times, and are therefore in the same proportions as the velocities, that is as 1, 2, 3, &c. But these spaces, in the preceding explanation, are proportional to the degrees of condensation; these latter then are proportional to the velocities. If, then, we suppose the series of compressions and rarefactions to have gone on for ever, and an unfinish'd wave of compression to have been formed at the instant we are considering, we may represent the whole state of the particles in the tube at that instant by the following figure—(Fig. 5.)—A N is a line parallel to the tube, and therefore O F is of the same length for all positions of $\psi$. It is to be made 1125 feet in length. Its use depends upon the following proposition:—That in the simple undulation which we are now considering, so long as the disturbance is small, the velocity of any particle bears to the velocity of propagation (two very distinct things, as we have before observed) the same proportion as the change in the density bears to the density of undisturbed air. This follows from the investigation attached to fig. 3: for, in the fourth instant for example, the column 34 of air is forced into c P, and 34 and c P being spaces described in equal times with velocities

4 a and 1125 feet per second, are spaces proportional to these velocities. And the compression will be the same if we increase c P in any proportion, provided we increase the quantity of air forced into it in the same proportion. A similar proposition holds for rarefactions. Or, in other words, if being the velocity with which the particle at R is moving towards C, the rarefaction of the particles at T is that which would be obtained by allowing the air naturally contained in a tube of 1125 feet long, to expand into the length of the tube; similarly, the compression at L is that which would be obtained by compressing the air in a tube N M into the shorter tube N M. If we wish to see the state of these particles at any succeeding instant, let the curve joining part of the figure travel uniformly forward at the rate of 1125 feet per second; new curves being continually formed and joining at C; we shall thus have the state of the whole tube at any succeeding moment. Before proceeding to apply this explanation to the phenomena of sound, we must see what will take place if the tube be agitated by several different undulations.—I. Undulations of the same kind or of the same perpendicularly. The first and a very easy one is that when the compressions are equal to one another, and the rarefactions are equal to one another; this is a direct method by which the properties of sound may be accounted for. The velocity at any point is determined by the forces acting on the particles in that place, and by the laws of motion and the nature of the air which the particles are, or seem to be, in. If, then, we examine the compressions and rarefactions which are produced by the wind, we shall find that there is a particular pressure which will bring about the velocity produced by the wind, and that this pressure is constant in the same place, and will be the same if we change the pressure in any way, provided we also change the velocity of the air in the same way.

All readers, however little acquainted with Mechanics, are aware, that if a body be impressed by two forces in the same direction, it will proceed with the sum of the velocities produced by the two forces, and with the difference of the velocities, if the forces strike in contrary directions, the motion in the latter case being in the direction of the greater of the forces. Hence, if there be different undulations excited in the same column of air, the velocities of each particle will be made up of the sum or difference of those which it would have received from each undulation, had each acted alone; the sum when it would have been compressed by both, or rarefied by both, and the difference when it would have been compressed in one direction and rarefied in the other. And the compressions or rarefactions being proportional to the velocities, a similar proposition will hold of them. Underneath we have represented the state in which a column of air would be at a given instant from two different waves, the types of which are drawn, and the broad line is the type of their united effects. We know [see Incommensurable] that any two lengths are either in the proportion of two whole numbers, or if not, two whole numbers can be found, one proportionate to the other and one proportionate to them as we please. We have, to take a simple case, drawn the lengths of the waves in the proportion of 5 to 4. (Fig. 6.)

The types of the waves are different portions of straight lines, one whole condensation and rarefaction taking place, as indicated by a C B C in the first, and by a P Y Q Q in the second. We suppose the waves to commence together. This supposition, of the condensation and rarefaction proceeding in such a way that their types shall be parts of straight lines, is not to be obtained in practice, since, as we have seen, such motion as that of a spring, and we may add of a string or drum, would produce regular curves. But it is as allowable in illustrating the effects of combined undulations as any other; and if, moreover, we round the corners of the types of the straight lines, thus making them present an appearance similar to that in the preceding figures, a slight rounding of the corners of the broad line will show sufficiently well what the combined wave would
greater state of compression than the first wave would give them, which arises from the second; similarly at the second, there is an increase of rarefaction. At \( n \), the air is compressed by one wave, and rarefied by the other, but more compressed than rarefied. At \( p, n, q, c, \&c. \), where one of the waves causes neither compression nor rarefaction, the same coincides with one of the others.

On looking at the figure thus produced, we see—

1. That it is composed of a cycle of successive compressions and rarefactions, in which, however, the rarefactions differ in kind from the preceding compression, so that we must not give the term same to each set of compressions or rarefactions, as we reserve this word to denote cycles of changes, which are following by similar cycles of contrary changes.

2. That when the lengths of two waves are as five and four, four of the first will be as long as five of the second; so that the waves recommence together at \( w \), but not exactly as before, the wave of condensation from the first being accompanied by the wave of rarefaction from the second. This difference, however, is not found at the end of the second simple cycle of four and five; so that after eight of the first waves, corresponding to ten of the second, the combined wave begins again to have the same form as at first.

3. The complete cycle denoted by the broad line may be divided into two, joining at \( w \); in the second of which a series of rarefactions is found similar to every series of compressions in the first, and vice versa. We may, therefore, give the name of wave to the part of the broad line intercepted between \( w \) and \( w \), consistently with our definition of this word.

4. If the waves had not begun together, a wave would have resulted of the same length as the preceding, if we began at any point where the compression from one was exactly compensated by the rarefaction from the other.

5. If both waves had been of the same length, the resulting wave would have had that length; or if the first wave had been contained an exact number of times in the second, the resulting wave would have been of the length of the second.

We subjoin a cut, representing a wave consumed three times in another wave, and the resulting wave. (Fig. 7.)

We have hitherto considered combined undulations as propagated in the same direction: let us now take two waves of equal lengths propagated in opposite directions, arising, for instance, from two pistons, on opposite sides of a tube. After a certain time, depending on the length of the tube, two waves will meet, by which we mean that the particles will begin to be affected by the motion of both pistons, and the manner in which the joint effect is represented is the same as before, though the phenomena are different.

In the former case, having represented the resulting wave at one instant, we could trace the change of state throughout every particle of the fluid, by supposing the type of that resulting wave, or a succession of such types, to move along the tube at the rate of 1125 feet per second; in the present case, the waves are propagated in contrary direction, so that any given effect from the first wave is no longer continually accompanied by another given effect from the second wave. We must also recollect, that the motion of the particles in each wave of compression is in the direction of the propagation; so that a particle under the action of two waves of compression, has opposite velocities impressed upon it, and therefore moves with the difference of the velocities; and so on.

Now let \( A, B, C, D, \&c. \), be the points where the two series of waves meet in the axis, and let us choose the instant of meeting for the time under consideration. Let the continued line represent the waves propagated from left to right, and the dotted line those propagated from right to left, as marked by the arrows at the parts at which they end; the arrows above them representing the directions of the absolute velocities which the waves over which they are placed give to the particles. (Fig. 8.)

All the particles are now neither compressed nor rarefied; for it is evident that, whatever condensation or rarefaction a particle experiences from the wave moving to the right, there is a contrary rarefaction or condensation from that which moves to the left. But every particle has the velocity derived from either wave doubled by the other. Again, the velocity of the point \( A, B, C, D, \&c. \), is always put in motion; for it is plain that by the time any point \( p \) comes over \( c \), giving it the velocity of \( p \) to the left, the point \( q \), similarly placed on the other wave, will also have come over \( c \), giving it the equal and contrary velocities \( Q, q \); so that, as far as velocity is concerned, all the impression produced on \( A, B, C, D, \&c. \), is equivalent to two equal and contrary velocities, or to no velocity at all. But when \( p \) has come over \( c \), the compression, answering to \( p \), is doubled by that answering to \( q \). So that the particles at \( A, B, C, \&c. \), undergo no change of place, but only condensation or rarefaction. Also the particles at \( A, B, C, \&c. \), halfway between \( A \) and \( B, A \) and \( C, \&c. \), never undergo compression or rarefaction, but only change of velocity. For by the time any point \( n \), from one wave, has come over \( a \), with the condensation answering to \( n \), \( a \) will have come over it from the other, with the equal rarefaction answering to \( a \); so that the combined waves upon \( a \), is always that answering to equal condensation and rarefaction, or no change at all. But the velocities answering to \( n \) and \( a \) are equal, and in the same direction; so that the points \( a, B, C, \&c. \), have the same one wave which would have given them doubled by the other. Hence at \( a, B, C, \&c. \), the particles suffer no change of state, but are only moved backwards and forwards. Now, let the time of half a wave elapse, in which case the types of the undulations will coincide, and those parts to be over the capitals on the axis, which are now over the small letters, and vice versa, as in fig. 9, where the coincidence is denoted by a continued and dotted line together, the latter being, of course, a little displaced. (Fig. 9.)

Half a wave since, all compression and rarefaction had disappeared throughout the tube, the velocity of every particle being double that of either wave would be caused. The case is now altered; no particle has any velocity, since there are the signs of equal and contrary velocities at every point of the tube; but every particle is either doubly compressed, or doubly rarefied, except \( A, B, C, \&c. \), which, as we proceed, are doubled.

In one more half wave, the phenomena of the first supposition will be repeated; that is, all condensation or rarefaction will be destroyed throughout, the particles, however, being all in motion, except \( A, B, C, \&c. \), but in directions contrary to those they had at first; while, at the end of a fourth half wave, the phenomena of the second supposition will be repeated, that is, all velocity will be destroyed, the particles being all condensed or rarefied, according as they were before rarefied or condensed. The reader may easily convince himself of these facts by drawing the corresponding figures to those before the eye, suppose the tube to be of a highly elastic material (thin Indian rubber, for example), so as to bulge outwards a little when compressed from the interior, or to contract in diameter by the pressure of the outward air when the inward is rarefied. Recollect, also, that \( A, B, C, D, \&c. \), remain without motion, their only change being condensation or rarefaction.
denation or rarefaction; while a, b, c, &c., are never compressed or rarefied, their only change being that of place.

We exhibit side by side the successive appearances of the tube, and the relative situations of the types between a and c, the arrows always representing the direction of the motion of the particles. A half-wave elapses between each two configurations. (Fig. 10.)

These phenomena will recur in the same order, and this mode of undulation, though it is necessary to show how it arises from the combination of two waves, is nevertheless more easy to be explained by itself than either of these two.

For if we recollect that when particles of air move away on both sides from a given point, there must be a condensation in the parts towards which they move, and a rarefaction in those which they quit, (2) will evidently follow from (1). At this second period, the elasticity of the air will have opposed and destroyed the velocities of the particles; so that there now only remains a tube of particles at rest for the moment, condensed towards the ends and rarefied in the middle. There will, therefore, immediately commence a rush of air towards the ends, which, on the contrary, will produce the state represented in (3), where equilibrium is restored, as far as compression and rarefaction are concerned; but where, at the moment under consideration, nothing has yet taken place to derive the particles of the velocity which they received from the elasticity of the air before the natural state was recovered. There is a motion of particles, in all directions, towards a, which will go on producing compression at a, and rarefaction at a, until all the velocity is destroyed. This is the state represented in (4), from which (1) follows again; and so on. The states of the column intermediate between the times of (1), (2), &c., are easily imagined. Between (4) and (1), the compression on the extremities will have begun; but not yet to the complete destruction of the velocities. Between (2) and (3) the motion of the particles towards the middle will have begun; but will not yet have placed them in their natural positions; and so on. The particle at a is evidently nearer in motion, being always equally pressed on both sides. The same would be seen of a, b, and c, if the tube were extended on both sides.

It is evident also, that except at the instant when compression and rarefaction are all destroyed, there must be a point at which the transition occurs from condensation to rarefaction; and vice versa. It is not, however, so evident, in this way of viewing the subject, that these points always remain in the same position at a and b, which is the result of our previous investigation. The reader must however recollect, that, when we talk of the points a and b being always free from condensation or rarefaction, we do not say that it is the same air which is always uncondensed or unrarefied, but only that the different portions of air, which pass by a and b, are in their natural state at the instant of the passage.

Now it must be evident, that if, in the motion of a fluid, there be certain particles which remain at rest, it is different whether, we suppose these particles to be fluid or solid; for all that we know of a solid, as distinguished from a fluid, is, that the particles of the latter yield sensibly to any applied force, while those of the former do not. Hence, when such impurities are communicated to a fluid, that some of its particles must remain at rest, the question never arises, as to whether those particles would, or would not, move with the fluid, or resist, if the conditions of motion were so altered, that forces, which did not counterbalance, would be applied to those particles. Let us now propose that a solid diaphragm is stretched across the tube at a; the motion will still continue exactly as before; and we may produce the same species of complex undulation by a piston at one end only of the tube, provided the other end be closed. For, on this supposition, all the successive states into which the air at the end furthest from the piston is brought, cannot be communicated to the outside air; and must, therefore, be either retained, or returned back again through the column of air.

The latter effect results; and the returning wave, which is of the same kind as the advancing wave, produces the phenomena just explained. If a and b were both closed during an undulation, no piston would be necessary, if it were not that there is not a substance of so small a degree, and the vibrations communicated to the tube from the internal air gradually destroy the internal motion, by the communication of motion to the external air.

We have hitherto considered only the motion of air in a small tube, and have found that the velocity of the particles, as well as the condensation and rarefaction, may be propagated undiminished to any extent. The case is somewhat different when we consider undulations propagated in all directions at once. Imagine a small sphere, which is uniformly elastic in every part, and which, by some interior mechanism, is suddenly diminished in its dimensions, and afterwards as suddenly restored. A wave of rarefaction and condensation will be propagated in every direction; which wave, at any instant, will be contained between two spheres, concentric with the sphere already mentioned, the radius of which differ by the length of the double wave: at least, unless there be some reason in the state of the atmosphere, why the propagation should take place more quickly in one direction than another.

We have no reason, at first sight, to suppose that the velocity of propagation would be exactly, or even nearly the same as if a portion of the air through which the waves pass had been contained in tube unconnected with the exterior air. But it is found, both by mathematical analysis and experiment, that the velocity of propagation remains unaltered in both cases; and also that the absolute velocities of the particles diminish.

This last is a natural consequence of a very simple principle—namely, that when one body, or collection of bodies, strikes a larger body, or collection of bodies, in such a way that its whole motion is destroyed, the velocity of the larger body will not be so great as that of the communicating body, but less in the same proportion as its mass is greater. The law of this diminution should be, from theory, inversely as the distance; that is, by the time the wave has moved from 3 miles to 5 miles, the compressions and velocities should be as 3 to 5; but we have no direct means of submitting this to experiment, the absolute velocities being imperceptible.

We now proceed to the application of these principles. We know that when the air is violently or rapidly propelled in any direction, that undulations such as we have in some of the gases are produced, and that the impression called sound is produced also. When a gun is fired, the great elasticity of the gases which are disengaged by igniting the gunpowder, forces the air forward out of the gun, which the instant afterwards is allowed to return. If feathers or dust be floating in the
as, they have been observed to move forwards, and then back again, just as we have found the particles of air around them. The density or loudness of the sound seems to depend upon the greatest absolute velocity of the particles, and not at all upon the velocity of propagation, which is found to be the same for all sounds. Thus in a musical chord, spring or dissipated by the force of the sound, the former or louder is the sound, but without any difference of tone, character, or velocity of propagation. There is no instrument of which the sound may not be made louder or weaker without any change in the frequency or pitch, which is the immediate cause of sound. We will not enter further into this part of the subject than to observe, that, generally speaking, we are not authorized to say that sound travels with equal intensity over a different kind of matter, but that we must, as it were, be communicated by the sudden contraction and expansion of an elastic sphere, as above supposed; but this is a supposition which we cannot put in practice. If a tuning fork be sounded and turned round in the hand while held up before the ear, very perceptible diminutions and augmentations of loudness will be perceived.

The immediate communicator of sound is the tympanum or drum of the ear, an elastic membrane, which is set in vibration with the sound, and vibrates in the same time with it. This impression is conveyed to the brain by certain neighbouring nerves. [See Ear.] We might expect, that when the wave of sound is of considerable length, we should hear its different parts, that is, that its length, is shown by its pitch, and that the velocities and compressions are small, and the middle where they are greatest. This happens to a small extent, in the difference, for example, between the "roar" of a cannon and the "report" of a musket. No explanation can convey a better idea of the difference than these two words. These simple uncontinuous sounds are the result of few waves, there being no cause for their continuance.

We have not room in this article for any discussion of the manner in which sound is propagated, observed beyond the earth's air, for which see Vibration. Noises conveyed through solid bodies travel generally quicker and are heard better; the scratch of a pin may be distinctly perceived through a long spear of wood, though inaudible to the person who makes it. With regard to gases, both theory and experiment agree in enabling us to assert, that any two of the same pressure and temperature, (that is, in which the barometer and thermometer would stand at the same height,) convey sound with velocities which are the same, however great the densities. Thus, air being about thirteen times as heavy as hydrogen, the velocity of propagation in the latter is about thirteen times that in the former. Such a result cannot be directly attributed to experiment; but, as we shall see in the article Fixed, there are methods equally certain for ascertaining the truth.

The velocity of sound had been determined by experiment before the time of Newton, who gave the first mathematical solution of the question, with the following result: that if the atmosphere, instead of decreasing in density as we ascend it, were all to be reduced to the density at the earth's surface, but to be so diminished in height, that the pressure at the earth's surface should not be altered, the velocity of propagation would be that acquired by a heavy body falling unresisted from half the height of this homogeneous atmosphere. This reasoning, however, gave the velocity nearly one-sixth too small; and the cause of the difference was afterwards supplied by the discovery of the very great density of the earth's atmosphere. We know that air and all gases resist compression, and will expand themselves if the pressure of the superincumbent atmosphere be removed. This tendency is what we mean by resistance; and the amount of resistance is much greater at high altitudes. If we take a column of air reaching from the earth's surface to the top of the atmosphere, the elastic force at any one stratum is equal to the weight of the superincumbent column, since it balances that weight. Moreover, it is observed, that, at the same temperature, the velocity of sound in gases is proportional to their densities, that is, for air of the same density of common air, the elastic force is only half as great, and so on. It is also observed that any increase of temperature increases the elastic force, and the reverse. If we take a column of air of the same height, the elastic force increases, which also increases the temperature, and vice versa. If, therefore, a vessel of air were pressed into half its dimensions, it would double its elastic force from the condensation, which would also receive a further addition from the increase of temperature. Again, if the same were rarefied into double its first dimensions, the elastic force would be halved by the diminution of temperature. The density or loudness of the sound seems to depend upon the greatest absolute velocity of the particles, and not at all upon the velocity of propagation, which is found to be the same for all sounds. Thus in a musical chord, spring or dissipated by the force of the sound, the former or louder is the sound, but without any difference of tone, character, or velocity of propagation. There is no instrument of which the sound may not be made louder or weaker without any change in the frequency or pitch, which is the immediate cause of sound. We will not enter further into this part of the subject than to observe, that, generally speaking, we are not authorized to say that sound travels with equal intensity over a different kind of matter, but that we must, as it were, be communicated by the sudden contraction and expansion of an elastic sphere, as above supposed; but this is a supposition which we cannot put in practice. If a tuning fork be sounded and turned round in the hand while held up before the ear, very perceptible diminutions and augmentations of loudness will be perceived.
higher. It is found by experiment that two sounds are more less consonant, when heard together, according as the relation between their vibrations is more or less simple. Thus, when two vibrations of the first are made in one vibration of the second, (which is the simplest ratio possible, when the sounds are really different,) that similarity is observed to which we have just alluded; the first sound is called the octave of the second, and both are denoted in music by the same letter. When the number of vibrations of the two are as 3 to 2, the one which vibrates three times while the other vibrates two, is called a ⅔ above the other; because in the musical scale of notes

\[
\text{C D E F G A B C D E F &c.}
\]

the vibrations of c and a are in this proportion, and a is the ⅔ sound reckoned from c. If the ratio of the vibrations be that of 3 to 4, that is, if the higher note makes four vibrations, while the lower note makes three, which is the case with c and its fourth f; or that of 4 to 5, which happens with c and its third v; the combined effect of the two

is agreeable. The same may be said of c and its fifth g, in which the ratio is that of 3 to 5, or of a and its minor sixth (see Music) c', in which the ratio is that of 5 to 8; or of a and its minor third d, in which the ratio is that of 5 to 6. We write underneath the common musical scale in the treble clef, with the denominations of the notes and the fraction of a vibration which is completed, while the first c completes one vibration, which fraction is greater than unity, as the notes are rising. Thus while c vibrates once, d vibrates once and one-ninth; or 8 vibrations of c take place during 2 of those of d.

This is the musical scale pointed out by nature, since all nations have adopted it, or part of it at least. It fully verifies our assertion that the ear delights in the simplest combinations of vibrations. It would be as hard to place between 1 and 2, six increasing fractions where numerators and denominators should, on the whole, contain smaller numbers. We find, in the six intermediate fractions, only 2, 3, 4, and 5 simply, or multiplied by one another, no product exceeding 15. Neither has the whole of this scale always been adopted. It seems to have been formerly universal to reject f and h, the fourth and seventh of the scale; as is proved by the oldest national airs of the orientals, the northern nations, and even of the Italians. [See Scale.]

The following table will represent the proportions of the lengths of the sonorous waves which yield the preceding notes. These lengths decrease, as we have seen, as the time of vibration decreases, or as the numbers of vibrations, in a given time increase.

Now, let two of these notes be sounded together, for example, c and a, in which two waves of c are equivalent to three of a. The resulting wave is, as we have seen in the preceding part of this article, twice as long as the wave of c, and the curve which represents the condensation and velocity of the particles of air is compounded, as before described, of two equal vibrations, one of which is the double of the other. The ear is able to perceive three distinct sounds, one of which is almost imperceptible, and indeed inaudible, unless carefully looked for. The two perceptible sounds are those of c and a from which the wave was made; nor are we well able to explain how this can be. Unquestionably, if the ear, which is the type of the compound wave, were presented to a mathematician, he would be able, with consideration and measurement, to detect its elements; and to make that resolution which is done by the most unpractised ear. But we may, perhaps, assert that a savage, or a person totally unused to music, would not separate the sounds, but if c and a were sounded separately, and afterwards together, we would imagine he had heard three distinct notes. The third sound, which is very faint indeed, is that belonging to the whole compound wave, which, being twice as long as the wave of c, belongs to the note called c, an octave below the first c of the preceding scale, which may be denoted by c₁. We may perhaps give an idea of this combination in the following way:—Let us suppose a series of equidistant balls to roll past us at the rate of two in a second, and another series at the rate of three in a second,—and let us moreover suppose that these balls roll in tubes placed one over the other, so that we only see each as it passes an open orifice in its tube, as in the figure.

It is evident that we thus obtain three distinct successes: 1, that by which we might count 3 in a second from the lower tube; 2, that by which we might count 2 in a second from the upper tube; 3, that by which we might count single seconds, from observing when two balls pass together, and waiting till the same happens again. And we must recollect that any sound, however unmusical in itself, produces a musical note, if it be repeated regularly and often; so that it is not from the phenomenon itself, but from the frequency of its succession at equal intervals, that the pleasant sensation is derived. Thus in a passage, which has a strong echo, that is, where waves are reflected from wall to wall, as in the tube closed at both ends, already described, if the foot be struck against the ground, a faint musical sound is heard immediately after the echo has ceased. By the action of reflection, shorter waves are excited, as well as the long wave, by the reflection of which the echo is caused. None of these would be repeated were it not for the reflection; but when the main sound is weakened by reflection, the shorter waves begin to produce the effect of a musical note, being, as we must suppose, less weakened than the longer wave. And we may here take occasion to observe, what will be further discussed in the articles Pipes and Orches, that it is difficult to excite a perfectly simple wave, unaccompanied by shorter ones, which latter are always contained in an exact number of times in the longer. Thus, if the note called c, or an octave below c in fig. 11, be struck on a piano-forte, the sounds v and v' (see the figure) will be distinctly heard as c becomes weaker, the waves of these notes being respectively one-third and one-fifth of those of c. When two notes are struck together, the effect is not pleasing, except when the numbers of waves per second in the two bear a very simple proportion.

We have noticed all the cases which the musicians call concords; the remainder, though contributing much to the effect of music, being called discords. Thus, if v and a be sounded together, in which (fig. 11) v makes ⅔ of a vibration while a makes 5, or a makes 8 vibrations while c makes 9, the effect is disagreeable, at least if continued for some time. On the piano-forte, in which the notes when struck subside into comparison with the key, this is not so much perceived; but on the organ, in which the notes are sustained, the effect is intolerable, and accompanied by an apparent
shaking of the note, producing what are called beats, which we shall presently explain. Nevertheless, it becomes endurable, if not too long continued, provided $v$, the discordant note, as it is called, is allowed to pass to the nearest sound, which will make one of the more simple combinations of vibrations with $c$. The nearest such sound is $v$, which makes 5 vibrations, while $c$ makes 6. For further information, we must here refer to the article HARMONY.

We shall come to this sound; with the combinations made by musical notes; all that we have said, hitherto depending only upon the proportions which these numbers of vibrations have to one another; so that any sound might be called $c$, provided the sound produced by twice as many vibrations in a second were called $c$, and so forth. We do not know that any measurements have lately been made in this country, but, from the Memoirs of the Academy of Berlin for 1823, it appears that the middle $a$ of the treble clef, or the $c$ in fig. 11, was produced by the following numbers of waves per second; viz., 235, 470, 544, 628, 712, and 420, in the following notes: $c$, $c'$, $c''$, $c'''$, $c''''$, $c'''''$. From this we may form an idea how many vibrations are necessary to create the sensation of a musical sound, and also at what point of the scale the vibrations per second would become so numerous that this effect should cease. If we take the longest piano-forte, and select that they are generally tuned (for private purposes) a little below the pitch of the orchestra, we shall not be far wrong in assuming that the $c$ above-mentioned on these instruments is the effect of 420 vibrations per second. The lowest note, which is almost imperceivable (that is, though perfectly audible as a sound, yet hardly distinguishable from the notes nearest to it), is the fourth descending $c$ from this $c$, and the highest is the third $a$ above it, though the $c$ above that, or the fourth ascending $c$ from the $a$, can be heard, and may be heard by whistling into a very sharp key. We must however remark, that the point at which a series of undulations ceases to give a sound either from its slowness or rapidity, is different to different ears; sometimes so much so, that while one person complains of a note as too thril, another cannot hear it at all. We write the above scale below, putting the $a$, whose vibrations we know, in its proper place.

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\begin{align*}
\end{align*}
\]

On looking at fig. 11, we see that $c$ makes 5 vibrations while $c$ makes 3; that is, $c$ makes 240 vibrations per second; $c$ makes 235; therefore, $c$, makes the half of this, or 122 vibrations per second, to $c$, and $c$, makes 38. Again, $c''$ makes 544 vibrations per second; and $c''''$, makes 1008, $c'''''$, makes 2016, and $c''''''$, makes 4032 vibrations per second. That is to say, in round numbers, the ear receives a musical impression from any sound which arises from a number of vibrations between 30 and 200 per second, or rather, the ears of the orchestra, the hearers are employed in distinguishing and discriminating between various rates of succession in the undulations of the air around them from 60 to 2000 per second.

We have previously alluded to a phenomenon of sound, or rather of combined sounds, called a beat. If two notes whose vibrations are either nearly in the same ratio, or nearly in one of the simple ratios above-mentioned, be sounded together, the effect produced is being out of phase, and is called a beat. If one sound, the pulsations or beats of which can be counted if the notes be not too high. For example, suppose two simultaneous notes whose vibrations are 100 and 104 per second. Here 25 vibrations of the first are made during 26 of the second; and the reader who has studied the preceding part of this article will see that the resulting wave is as long as twenty-six of the second waves; but that if the waves from the two be much alike in their types, this resulting wave will consist of a cycle of rarefactions and compressions only, and not of separate waves. The whole resulting wave being twenty-six times as long as the second wave, will run through all its changes four times in a second, which is not sufficient to give a musical sound, but will only add to the sound of one of the waves the periodical tremulous sensation which is called a beat, which may be imitated by ringing the syllables who, $ab$, in rapid succession on the same note of the voice. For information as to the use made of these beats, see the article TEMPERAMENT.

It only remains to consider the different character of sounds. The same note, as to pitch or tone, may be sounded by a horn and a flute; nevertheless, each instrument has a character of its own, which enables every one to distinguish between the two. It is not to the different loudness of the two, for either, by skilful players, may be made to give the same tone, whether it does it depend on the number of vibrations, for that, as we have seen, determines only the pitch of the note: the only difference between one wave and another of the same length, is in the form of its type; that is, in the different manner in which the air is condensed and rarified. There is also only this feature left, to account for the difference between the tones which different players will draw out of the same instrument; since both Pagani and an itinerant street musician would make the same string vibrate the same number of times in a second. The late Dr. Young, to arm the other ear, much indeed, we may take the subject, as on almost every other, examined the string of a violin when in motion, and by throwing a beam of light upon it, and marking the motion of the bright spot which it made, he found that the string rarely vibrated in the same plane, but that the middle points would describe various and very complicated curves, corresponding to different manners of drawing the bow. [Lectures on Natural Philosophy, vol. ii. plate 5.]

We give three specimens, merely to show how much the vibration produced by one player may differ from that of another. The waves proceeding from all three will be of the same length, the vibrations being performed in the same time; but the condensations and rarefactions will evidently be such as to give very different effects, and give states to contiguous particles of air. The middle of the stretched wire describes the curve on which it is placed, during what we have hitherto called two vibrations.

It might tend to throw light upon this part of the subject if practical musicians would observe, in the same manner, the curves which they produce, and describe the different keys of tone that much indirect in the article CUCUMBER.

Some confusion arise in books on this subject, from the use which different authors make of the words vibration and wave. Some mean, by a vibration, a motion to and fro, which, in this article, we have called two vibrations; and by a wave, the complete succession of condensations and rarefactions, which we have called two waves, one of condensation, the other of rarefaction. For further information, we refer the reader to Sir J. Herschel's article, already cited, to Robson's Mechanical Philosophy, Dicté d'Elémeixntaire de Physique, and Pouillet's Traité de Physique.

ACQUAPENDENTE, a town in the Roman States, near the confines of Tuscany, on the high road from Florence to Rome. (Lat. 42° 46' E. long. 11° 52'.) The name is derived from the fall of water from the rock on which it stands. It is built on a steep hill which rises above the river Paglia, and is surrounded by walls. Girolamo Fabrizio, a celebrated anatomist and professor at Padua in the sixteenth century, was a native of this town. It was but an insignificant place until 1640, when Pope Innocent X. having razed to the ground the neighbouring town of Castro, where a bishop had been murdered, transferred the see to

Acrupa.  The town looks ill-built and dull: it belongs to the delegation or province of Viterbo, and is seventy miles N.N.W. of Rome. It contains a cathedral, and about 2400 inhabitants.

Acr, or Acre (from the French acquit, to free or discharge) signifies a deliverance and setting free of a person from a charge of guilt; thus a man who, upon his trial for a criminal offence, is discharged by the jury, is said to be acquitted. The acquittal by the jury has, however, no force in this regard, until it is pronounced by the judge upon the verdict by which the proceedings are instituted.

After judgment of acquittal, if the party be indicted a second time for the same offence, he may plead his former acquittal as a bar or a complete answer to the second charge, and upon such former acquittal being admitted or proved, the person indicted will be entitled to be discharged, as the law will not permit a man to be twice put in danger of punishment for the same offence.

ACQUITTANCE is a discharge in writing of a debt, or sum of money due. A general receipt or acquittance in full of all demands will discharge all debts, except such as are secured by what are termed specialities, viz., bonds and instruments under seal; which are considered by the law as of too great force to be discharged by a verbal concord and agreement, or any less formal and solemn acquittance than a deed. Where an acknowledgment of satisfaction is by deed, it may operate as a good answer to an action on the debt, even though nothing has ever been actually received.

The law is not very uniform, and even in cases, order accounts to be gone into anew, notwithstanding the production of a general acquittance or receipt in full of all demands, upon proof that such acquittance was obtained by fraud or mistake, and that the debt or other demand has not been in fact satisfied.

ACRE, a measure of land, of different value in the different parts of the United Kingdom. When mentioned generally, the statute or English acre is to be understood. Its magnitude may be best referred to that of the square yard by recollecting that a square whose side is 22 yards long is the tenth part of an acre; whence the latter contains 22 x 22 x 10, or 4840 square yards. The chain with which land is measured is 22 yards long; so that ten square chains are one acre. This measure is divided into 4 roods, each rood into 40 perches, so that each perch contains 30 1/2 square yards. Thus:

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<th>Acre</th>
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The Irish acre is larger than the English, inasmuch as 108 Irish acres are very nearly equivalent to 162 English acres. More correctly, 121 Irish acres are 196 English acres; but the former ratio points out an easier arithmetical operation, and will not be wrong by so much as one acre out of 5000.

The Scotch acre is also larger than the English, 48 Scottish acres being equivalent to 61 English acres. There are also local acres in various parts of England, such as the Cheshire acre of 8 yards to the pole. The English statute acre is used in the United States of North America.

The French Acre is a square whose side is 10 metres, and 1000 English acres are equivalent to 40,466 acres.

For further information on the comparison of English and other acres, we refer the reader to Kelly's Cambist, a very useful work.

ACRE (ST. JEAN D'), a town of Syria on the sea-coast (N. lat. 32° 54', E. long. 35° 4'), and on a small promontory, which, with Mount Carmel lying to the south, forms a circular bay: it is sometimes called Acr and Acea. Its old name was probably Acoo, which was changed to that of Ptolemais during the sovereignty of the Greeks in Syria: the name of Acoo was revived after it fell into the hands of the Saracens. Acre is well known in the history of the Crusades, having been taken in 1191 by Philip Augustus and Richard of France and England. It was for some time in the possession of the Knights of Malta, during whose occupation it was strongly fortified, and filled with churches. Acre was in a very ruinous condition in the middle of the seventeenth century, when Thenot visited it, but it has since been improved, and is now said to contain 15,000 (some authorities say 20,000) inhabitants. This restoration was due to Sheikh Daher, who, in the middle of the eighteenth century, strengthened the town and revived its commerce. Jezzar Pasha, his successor, fortified the place very strongly, and built a new mosque, according to Turkish fashion adorning it with columns that once belonged to the old Greek edifices of neighbouring cities. The streets of Acre are narrow, and the houses, which are of stone, have flat roofs. The port is small and not deep, yet it is one of the best along this coast. Europeans carry to Acre cloth, lead, tin, &c., and receive in exchange some cotton and rice. The great celebrity of Acre, in more recent times, is owing to Bonaparte's attempt to storm the place in the spring of 1799, when he entered Syria at the head of 12,500 men. The obstinate defence of the garrison commanded by Jezzar, and aided by Sir Sidney Smith with English sailors, saved Acre from the repeated assaults of the French general, who, after spending more than sixty days before it, and losing near 3000 men, retreated to Egypt. Since the siege in 1799 the fortifications have been repaired, but, in the last year (1832), Acre has had to withstand another siege, and is at present in the hands of the Pasha of Egypt, who took it from the Sultan of Constantinople, his master, on the 3d of July.

Acre is also the name of one of the Syrian pashaliks, which in late years has been bounded to the north by that of Tripoli, to the south and east by the pashalik of Damascus, and on the west by the Mediterranean. Its chief ports are Acre and Beirut. We propose to describe the whole country under the more permanent and general name of SYRIA.

ACROCHORDUS (a word formed from the Greek, which signifies a point), in Zoology, a genus of serpents discovered in Java by the traveller Homestad, and described in the Memoirs of the Stockholm Academy of Sciences for 1787. This genus is easily distinguished from others of the same family by the innumerable small scales which cover every part of the head and body both above and below, and which in preserved specimens, or when the live animal distends the lungs and body with air, assume the appearance of so many granulated waris or tubercles. This circumstance has suggested the name of acrochordus, which conveys a pretty accurate idea of the external covering of the animal described by Homestad.

[Acrochordus, from Aeerptor, Hist. des Ovifz.]
borne altogether, and brings forward the testimony of M. Lashest in which the beef is boiled in an acid chorde; and as the latter gentleman travelled for some time in Java, and made various experiments upon the live animals, for the purpose of ascertaining this point, there seems to be no reason to doubt the truth of his report. The tongue of the acrochord is short and thick, the vent simple and without the horny spurs which are common to many other genera of serpents. The only species sufficiently at present is

The Oudel Caron of the Japanese, the Acrochordorius Javanides and several other species, and others. The scales of this species are marked by three small carinated elevations; the body is black above, greyish-white beneath, and the sides are marked with black spots on a ground of the same colour as the belly. The head is covered with small scales, the mouth is contracted, and the under jaw shorter and broader than the upper. This animal averages from six to eight or ten feet in length, and its shape is altogether peculiar; the body does not gradually become thinner from the middle towards either extremity, as in the generality of serpents, but grows gradually thicker from the head to the vent, and there suddenly contracts, so as to form a very short, slender tail. In the thickest part of the body, immediately above its junction with the tail, the individual procured by Homstedt, of which the entire length was sight feet, was found to have been shaped in such manner that the greatest breadth of the tail did not exceed half an inch, and its length was scarcely a ninth part of that of the whole body. This individual was a female, and, when opened, was found to contain five young ones perfectly formed, and about nine feet in length; the head is as small as it is in the specimen of the acrochord; and the mere singularity of the fact does not necessarily destroy its probability. We know, moreover, that tortoises, turtles, some genera of fishes, and even certain species of lizards, of all them cold-blooded animals, and some approaching very nearly, in nature and organization, to the family of serpents to which the acrochord belongs—live entirely upon vegetable food; and the knowledge of this fact ought to prepare us beforehand to expect the discovery of similar habits among certain tribes of serpents, rather than to ridicule the supposition that this serpent is frugivorous, and, contrary to the habit of all other known species, feeds upon vegetable substances. Cuvier is incredible upon this point: it is certainly a singular circumstance, and should be received with caution; but, on the other hand, we have the testimony of the best authority. 

AC'RO'NYCAL (sometimes incorrectly written Acro- nical, and Acronical), a word derived from the Greek, signifying "that which determines the extremities, or the beginning and end of the night." It is, therefore, the name of a star; and a star is acro- nical or arises acronically when it rises at or very near sun-set, and consequently sets at or near sunrise. To determine what stars rise acronically on any given night, elevate the pole of a common globe so that the arc intercepted between it and the horizon may be equal to the latitude of the place. Turn the globe until the sun's place is on the horizon at the western side, then will all stars which are either on or within a short distance of the horizon on the eastern side be acronical.

ACRO'POLIS, a Greek compound word signifying 'the highest point of a city.' It was used to denote some hill, rock, or natural elevation, such as we find forming part of the sites of many ancient cities in Greece. It seems natural to the Greeks that such places were among the first occupied, and that they served as the kernel of a larger city. In course of time, when building spread, such eminences became strong posts analogous to castles or citadels in modern cities; and in many instances the political duties in a city were vested as equivocal to the possession of the cities themselves. Religious edifices also generally formed part of the structures of an Acropolis.

In modern times they have often served as places of refuge to the inhabitants from the incursions of an enemy, or from the depredations of corsairs. The term Acropolis is now most commonly applied to the rocky eminence of Athens, on which the remains of the Parthenon or Temple of Minerva stand; but this is only a limited use of the word. Corinth had an Acropolis called Acro-Corinthus, which is a much loftier and more commanding eminence than that of Athens. The view from the summit is uncommon, and the temple on the Acropolis of Athens, nearly fifty feet in height, is distinctly seen. An eminence close upon the modern Argos was the Acropolis of the ancient Argos, and then it was called Larissa. A ruined castle of comparatively recent construction occupies the summit of this rocky eminence, and shows in some parts traces of much earlier building. The Acropolis of Messene in the Morea, situated on Mount Ithome, is another remarkable specimen of these natural bulwarks which were once fortified according to the principles of military science. [See Leake's Morea, 3 vols. 8vo.—Society's Plan of Athens.]

ACROSTIC, a Greek term, signifying literally the beginning of a line or verse. An acrostic is a number of verses so contrived that the first letters of each being read in the order in which they stand shall form some name or other word. According to some authorities, a writer named Porphyrius Optatus, who flourished in the fourth century, has the credit of being the inventor of the acrostic. It is probably, however, of older date. Enesidem, the bishop of Cassarea, who died in a.D. 340, gives in his Life of Constantine, a copy of Greek verses which he asserts to be the composition of the Erythrean Sibyl, the initial letters of which make up the words ΗΕΟΥΣ ΧΡΙΣΤΟΣ ΘΕΟΥ. The Lord Jesus Christ, the Son of God, the Saviour. These verses, which are a description of the coming of the day of judgment, have also been translated into Latin hexameters so as to preserve the acrostic in that language, in the words JESVS CRISTVS DEI FILIOS SAVIORITY. The translation of the Latin hexameters is not of the same fine qualities of the original; for it will be observed that the first letters of the five Greek words being joined together, form the word ΙΧΘΥΣ, that is, the fish, which St. Augustin, in his writings, who quotes these verses in his Confessions, says, that "the Fish Det, informs us to be understood as a mystical epiphany of our Saviour, who lived in this abyss of mortality without contracting sin, in like manner as a fish exists in the midst of the sea without acquiring any flavour of salt from the salt which surrounds it. This may be translated into English thus: an acrostic. But there are also other ways of complicating these ingenious productions. Addison, who notices this along with other sorts of false wit, in his lively papers on that subject in the first volume of the Spectator, says, there are compound acrostics, where the letters of the lines are translated into acrostics of columns. Such an acrostic has been designated a penta-acrostic. This species of elaborate trifling was extremely fashionable among the early French poets, from the age of Francis I. down to that of Louis XIV. Many of our English poets of considerable eminence used formerly to amuse themselves in the same way. Thus, for instance, among the works of Sir John Davies, are twenty-six short poems entitled Hymns to Astraea, each of which is an acrostic on the words Elizabeth Regina. These, which were first published about the end of the sixteenth century, are perhaps the most elegant compositions of this description in any language. Afterwards such puerile ingenuity fell into disuse; and Dryden, in his Macflecknoe (published 1682), contemptuously makes the dying monarch of the realms of nonsense and dulness address his son and successor Shadwell:—

"Learn well your aces, and choose for thy command Some peaceful provinces in acrostic land."

The acrostic, being addressed merely to the eye, and conveying no pleasure either to the imagination or to the ear, cannot of course add to the poetical effect of the lines which it ornamented—any more than would be the case with the use of mere ornament. But it is sometimes useful, as an aid to the memory, in recollecting such verses as are composed only to be got by heart, for the sake of the facts of which they form a summary. Thus, in some editions of the Latin Psalter, it is customary to play a few verses which contain at least an acrostic on its name and a sketch of the plot. In this case, the knowledge of the initial letter of each line must help the memory to recover it, if it should be forgotten. There are two epigrams in the Greek Anthology, one in honour of Bacchus and the other of Apollo, which are called, •
acrostics, though of a somewhat peculiar fashion. Each contains twenty five verses, of which the first introduces the subject of the poem, and each of the twenty-four consists of four words, which are epigrams of the god: all the epigrams in the first line begin with α, those in the second with ϒ, and so on. These poems, therefore, are merely acrostics on the alphabet, four deep. To J. J. Sommerville, in designing many of their writers. This the commentator on "Maimonides," Rabbi Yonah of Bar Abraham, is commonly called Ritus, from the initial letters of the five words composing his full title. (See this explained in the "Commentaries on the Talmud," (Jewish Library; or in D. H. Daniel, "Commentary on the Almanac," &c.) The initial syllables of the verses of the Psalms were anciently called acrostics.
The following is a curious specimen of a Latin acrostic:

\[
\text{SATOR}
\]

\[
\text{AREPO}
\]

\[
\text{TENET}
\]

\[
\text{OPERA}
\]

\[
\text{ROTAS}
\]

ACROTERION (in architecture), a Greek term, signifying "the extremity of anything." It is used technically to designate the statue or other ornament on the summit or upper angle, and is sometimes applied also to the similar ornaments over the feet or lower angles, of a pediment; in the latter case they are all included under the plural acroteria.

Some writers understand by this term only the bases or pedestals on which the acroterial ornaments are placed; for this restriction, however, there is no good reason, but rather the contrary, as it would leave the ornaments themselves without an appropriate designation of the parts, indeed, with great propriety be used much more extensively than has been the custom. The fundus on the apex of a spire, pinnacle, or gable, in works of pointed architecture, is an acroterion; and in St. Paul's Cathedral in London, although the pediments over the entrance fronts have their acroteria, which are statues of some of the Apostles, yet the acroterion of the edifice is the cross which surrounds the grand central part of the composition. This term is also found in many ancient authors; we derive it from Vitruvius, who uses it in the plural sense above-mentioned. Plutarch, in his life of Caesar, makes use of it in the singular number, and in the purely architectural sense as we have rendered it.

ACT OF PARLIAMENT.—See Statute.

ACT (in the Universities). An exercise to be performed by students before they are admitted to their degrees. In the University of Oxford it has almost fallen into disuse, and in Dublin is a mere form; but at Cambridge it is still preserved, and forms a necessary part of the preliminary examination of the candidates for the degree of Bachelor of Arts, who aspire to University honours. It is also performed by candidates for the degrees in law, physic, or divinity. The student proposes certain questions connected with his subject to the president of the college, and the members of the school (the academic superintendent) who thereupon nominates other students to oppose them. The discussion is carried on syllogistically and in Latin, and terminates by the president offering the candidate or the person who is said to "keep the act," and his opponents, and dismissing them with a short compliment to each, in proportion to his deserts.

The severest exercise of this kind being that undergone by candidates for the degree of Bachelor of Arts, with honours, at Cambridge, we will describe it more particularly. The moderator, or examiner for the year, gives notice to a student that he is to keep an act; who thereupon writes three questions which he proposes to maintain and defend. The first is always from Newton's Principia; the second from a geometrical, and the third from some metaphysical or moral writer. The following is an example of the form in which they are given:

Receit statuit Newtonus in Sectione prima libri primi.

Receit statuit Lagrangius in capita primo libri de functionibus.

Receit statuit Locchius de principiis naturae.

The above signifies that the student intends to maintain the correctness of the first section of Newton's Principia, the first chapter of Lagrange's Theory of Functions, and the chapter of Locke on the Human Understanding, which treats of innate principles.

The moderator, receiving these, nominates three students, whose attainments, he thinks, will enable them to oppose arguments on the other side. On the day appointed, the moderator having taken his chair, the respondent reads a Latin thesis, usually on the third subject; and after which the opposite arguments are urged against the several subjects, which, of course, are usually ingenious fallacies. If the respondent can answer them, he does so; if not, the moderator endeavours, by questioning, to find from what quarter of the knowledge of the subject this arises. As each opponent is dismissed he is also questioned by the moderator, as above stated.

The syllogistic form is not strictly retained at present in keeping an act; and the Latin spoken is very indifferent. In the English universities this modern form is given to the act, instead of the more ancient form of the qualifications of the candidates, as the examination is proportioned in severity to their supposed capacities.

In older times an act was a very important feature in obtaining a degree. The utility of the present form is doubted by many persons.

ACT (in the Drama.) That portion of a play, which is separated from the rest by an interval, during which the stage is left empty, and the action is supposed to proceed could not well be supposed greatly to exceed that of any other acts; although in some modern editions, such as Burton's Pentaglot, we find Greek plays thus divided. The language does not possess a word answering to the Latin and English Act. Among the Greeks the stage was left empty, while the actors were furnishing the audience with their performance; when the other actors retired, those forming the chorus still remained, and continued the business of the play by their songs. For these songs, it is important to observe, were in general essential parts of the drama. They were never merely composed, nor could they be produced, or any other extrinsic representation, thrown in merely to fill up a chasm in the action; they carried forward the action in the same manner as the ordinary dialogue did.

For an exact copy of the form of a Greek drama in this respect, we have theGYNOGETITES of the Roman author, for whose Latin work the name of Aenices of Milton. In that play there is no division into acts; nor is there any such division in Buchanan's two Latin tragedies, entitled Jophthes and Bishops, which are probably previously composed, and the Greek drama. The latter is full of contrasted and vigorous passages, so admirably thrown in by Horace, and is of immense length, with many places of interest. The Greeks, however, frequently divided their plays into different parts; and the modern drama, in that respect, is closely modelled on the ancient.

From this constitution of the Greek drama it naturally followed, that the real duration of the action of any play now performed would be supposed greatly to exceed that of any other play.

The uncertainty of the Greek drama is, however, less great than it appeared at first, from the nature of the representation. In other words, what has been called the Unity of Time became a principle almost invariably observed in every dramatic composition. On the Roman stage there was no chorus, and the play was divided into a series of scenes, or parts, each of which was technically called a scene. The modern play has frequently in its comedies supposed a considerable portion of time to pass between the close of one act and the opening of another, the most famous of the Latin dramaticists, Terence, has not availed himself of this liberty, but has preserved a strict adherence to the classical rule. The last part, we may add, has followed the same plan in his translations of the Medea and the Abestos of Euripides.

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soon, like the acts of a play. Viewed in this light, it will be perceived, that the division into acts, is really that distinction of the modern drama which more than anything else gives to its peculiar character. Dr. Johnson has observed, in modern plays, The time required by the fable elapses, for the time between the acts of each of the act's actions as is represented, the real and poetical duration is the same, 
...

The drama exhibits successive imitations of successive actions; and why not the second imitation represent an action that happened years after the first, if it be so convenient to allow a desire of the extension, a suspense to intervene. Time is, of all modes of existence, most obtrusive to the imagination; a lapse of years is as easily conceived as a lapse of hours. —Pref. to Shakespeare.

We may see, remark, that although the French dramatists, who write to please the public, at the same time that the object is a grown-up young woman at the beginning of the fourth. In this instance, indeed, the dramatist introduces Time to explain and apologize for the licence he had taken to

"Thrice over sixteen years, and leave the growth untried Of that wide space.

Time is said to appear as "Chorus;" and in the beginning of Henry V., Chorus is also brought forward to request the audience to allow their thoughts in the course of the representation to pass from one place to another—

"Jumping over times;"

Turning the accomplishment of many years 
Into an hour-glass."

Neither of these personages, however, performs exactly the office of a chorus, or other flowers in the play. We may add, that the old English Mysteries and Morals, the first produce of our national dramatic genius, were long destitute of any division either into scenes or acts. This is the case, for instance, with Parke's Mystery entitled Candelmas Day, or the Killing of the Children of Israel, written in 1512, and first printed in Hawkins's Origin of the English Drama. In this performance there are not even any stage-directions. The Morality of Every Man, printed early in the reign of Henry VIII., and that of Hycke Scornor of the Sword of Justice, both written in that reign, or the last division or any division into acts or scenes. In the Morality of Lusty Juvenus, again, which was published in the reign of Edward VI., there are stage-directions, but still no mention of acts as separate scenes. The earliest of the Morals which assumed the regular dramatic shape are not more ancient than the beginning of the reign of Elizabeth. Morals continued to be both printed and acted long after this date. We may mention, among others which appeared after Elizabeth came to the 16th century, Skelton's Life and Repentance of Mary Magdalen, 1567; The Marriage of Wit and Science, 1576; The Conflict of Conscience, 1581; The Three Lords of London, 1590; &c. Even Mysteries were performed in the reign of Mary. Nay the Chester Mysteries were performed in the year 1574. Down to this time there is every reason to believe that the scene never was changed from the beginning to the end of any stage-spectacle. As for the Morals, they were acted even in the reign of James I., and they are enumerated under the name of 'Morals' in the licentious and的压力 accepted by many of the nobility and people of the age in 1603. But even several of our early tragedies and comedies, down to an era subsequent to this, were without any division into either scenes or acts. There is no such division in Every Man Out of Office, written in 1577, to which Shakspere is supposed to allude in Henry TV., and which the author entitles A lamentable Tragedy mixed full of pleasant Mirth, printed in 1561; nor in Poesel's David and Bethsheba, which appeared in 1579. In the tragedy of Solomon and Pentecost, no division is registered, whereas he is by no means better than, but not scenes; but there are neither one nor other in Dekker's Satyromastix, or the Trusting of the Humorous Poet, nor in the comedy of the Wily Beguised, both of which appeared after the commencement of the seventeenth century, the last of the

Much discussion has taken place among the critics on the reasons of the rule which restricts a regular dramatic composition to the extent of neither more nor less than five acts; and which Horace, in his Art of Poetry, has laid down in a peremptory and well-known verse. Upon this subject the French writer, Marmontel, has delivered a very sensible judgment:—"The established usage of distributing a tragedy into five acts, neither stands upon such a foundation as to constitute it an essential law, nor is it unreasonable as to deserve to be banished from the theatre. When the subject is such as to furnish that number, five seems a convenient division to the spectators. But the great events find room; great interests and great characters have freedom to develop themselves; the situations lead in each other; one incident announces the next; the sentiments are introduced without bluntness or harsh collision; the movement of the drama is at the same time to gain the requisite acceleration, and the interest to grow to the highest degree of pathos and intensity. It has been found by experience that the attention, the illusion, and the emotion, which a spectacle of this duration excites, are not too great for the audience. * * * But the subject may be naturally such, as not affording room for more than two or three points of repose, not to be susceptible of more than the same number of situations striking enough to form successive steps in the passion of the spectators, as though pathetic, interesting, and teeming with beauties; or must it be overlaid with scenes and incidents that do not properly belong to it? By no means. The action must have its just extent given to it, and no more. The law of the five scenes must be followed, which is superior to that of art." —[Encyclopedie, Art. Acte.]

ACT of FAITH.—[See Auto da Fera.]

ACTA DIURNIA (proceedings of the day) was the title of a gazette, a forerunner of the great modern periodical, the weekly and monthly gazette, published daily at Rome, and containing the proceedings of the Senate, the debates of the Roman Senate, the proceedings of the public assemblies, the debates of the courts of law, the declaration of new laws, the signatures of the death warrants of kings, and the exhibitions in the theatres. Not a gazette appears, says Seneca, without its divorce, so that our matrons, from constantly hearing of them, soon learn to follow the example. The due supply of information on political and judicial affairs was to be obtained, as it were, by reporters at the hour of the announcement of the proceedings of the Roman Senate, upon the punishment of those who had been concerned in the Calilinarian Conspiracy, we find the first mention of short-hand writers, who were specially employed by Cicero, who, taking the senate's debates down by the quill pen, and not the shorthand, and not the shorthand, Cato; and it is interesting to observe that this was the only speech of that extraordinary man which still existed in the age of Plutarch. But it must not be inferred from this fact, that these reporters or any other persons were at liberty to publish an account of any proceedings in the senate. Until the first consulship of Julius Caesar the senate was a close court. This great man, by a ludicrously distorted view of Roman history, has been generally represented as the destroyer of his country's liberties, and he was doubtless possessed of some authority over the Senate, but such authority was not such as to allow of the proceedings of the Senate being published by short-hand writers. Moreover, the public assemblies were never deprived of real authority, the Acta Diurnia henceforward can have had little political interest. Even in its best days this state gazette was, no doubt, an extremely meagre document,—conducted as it was by a permanent authority, without the aid of popular assemblies; and what is still more important, without the possi-
ACT ERUDITORIUM, the title of one of the oldest and most celebrated literary and scientific journals. It began to be published at Leipzig in January 1682, under the conduct of the learned Otto Mencke, one of the professors of the university, assisted by several of his brother professors, and many other persons. The first volume was published on the 20th of May, 1682. The numbers, which were in 4to., appeared once a month. On the death of its original editor in the beginning of the year 1707, the management of the journal was undertaken by his son John Burchard Mencke; on whose death, in 1712, the charge devolved on his son Frederic Otto. The property of the work seems to have remained to the last in the hands of the Mencke family, or their heirs; but the latter editors were not men of distinguished name. The last was Charles Andrew Mencke, who, after managing the publication from 1754, died on the 4th of April, 1782. The volume for 1776, was only published in that same month. It was the last which appeared; although the publisher intimates his hope that the journal will be continued, having the consent of the editor who had allowed it to fall so sadly into arrear, a matter, he remarks, concerning which the less that is said the better. The Acta Eruditorum was the first critical journal published in Latin; and it did not confine itself merely to the review of books, but inserted also abstracts of scientific discoveries, and of the general progress of mathematical and physical science. It was here that Leibnitz, who was a frequent contributor in the early period of the work, first announced his method of the differential calculus. In the hands of the early editors it was considered as not admirably conducted; and Morhof congratulates the countrymen on having, in this publication, produced something which even commanded the approbation of foreigners, 'who rank it as a fine addition to that store which the Germans' contribute to their taste.' He mentions a translation of the Acta into French, which had been undertaken; but this undertaking does not appear to have proceeded beyond the first volume, which was published in 12mo. at the Hague in 1685. Under the title Elargissements des Sciences, published the Leipzig. After the first fifty volumes, coming down to the end of the year 1731, the journal took the name of the Nova Acta, or the New Acts. The first series, besides the fifty regular volumes, consists of ten supplementary volumes, one for each year, after the 5th. Occasionally, other supplements also appeared in the course of the new series; which, together with several volumes of Indices, make the complete work amount to 117 volumes.

Many other journals established a imitation of that of Leiden, and adopted the name of Acts; as, for instance, the Deutsche (or German) Acta Eruditorum, begun to be published in 8vo., at Leipzig, in 1719, and which was continued till 1740, the whole forming 20 volumes; the Frankische Acta Erudita et Curiosa, a journal of French literature, published at Nuremberg, from 1719 till 1732; the Deutsche Acta Literaria, which began at Leipzig in 1715, but did not last above a year or two; &c. Under this head also we may notice the English journal, entitled the Historical Account of Books and Transactions of the Learned World, which began to be published at Edinburgh in 12mo., in 1688. [See Watt's Bibliotheca Brit.] The title Acta has also sometimes been given to the published Memoirs or Transactions of Learned Societies.—[See Academy, and Society.]

ACTAE. Under the name of keriq, the Greeks described a medicinal plant, which the moderns have ascertained to be what is now called Sambucus ebulus. [See Sageret.] Langeus applied the name to a genus of perennial herbaceous plants found in various parts of Europe and the north of Asia, and America, belonging to the natural order Ranunculaceae, and only in a slight degree resembling the species intended by classical authors. The genus thus understood is much from all others of the Ranunculus tribe by its anthers being turned inwards, so that when they burst, the pollen may immediately fall upon the stigma, while its flowers have only four sepals and four petals. All the species have their leaves in many heads, which has given rise to the popular name longed tail, branched panicles; these are followed by little fleshy, berry-like fruits, of a black, or white, or red colour. The properties of all the species are nauseous and deleterious, as might be expected from their affinity to the poison Aconite.

One species, Actae speciosa, a common European plant, is found occasionally in the north of Yorkshire among bushes; it is popularly called Black barberries and also Herb Christopher. It has purplish-black juicy fruits, which would appear to be dangerous. The Actae which Langeus describes is rarely found alone; the factoid colour of the leaves did not prevent their being touched.

Another species, the A. cimicifuga, a North American plant, derives its name from the belief that its leaves have the power of driving away bugs.

The Langeus applied the belonging to the sea nettles (Actophora, Cuvier), and distinguished by the form of their body, which is simple, cylindrical, soft, fleshy, and susceptible of contraction and dilatation. The same aperture, which serves for the mouth and the vent, is terminal, and not divided into a head and tail. The genital parts are situated in the body. They can be folded down into the aperture, and concealed under the outer envelope. When they are extended, they give the animal the appearance of a flower, increased by the lively colours with which they are adorned—a circumstance, they appear to the popular name animal and sea amonies, usually applied to the various species of actina.

The internal structure of the genus has been carefully investigated by Dr. Spix, a Bavarian naturalist, well known by his travels in Brazil. Dr. Spix found in these animals an alimentary cavity, ending in a single aperture, very large at the lower end, and so elastic and contractile, that it could easily be turned inside out. The cavity is surrounded with flat muscles, running lengthwise and parallel. The nerve knots, or ganglia, are situated in the lowest and broadest part of the body. These have intercommunications, and are distributed to the principal organs by filaments more or less obvious.

The egg organ (ovarium) in a female was found to be filled with small eggs, and was composed of three or four tubes, or elongated, cohering to one another. Each of these is a sort of egg tube (oviductus), which opened into the stomach. These tubes communicate with the tentacula in such a manner that the eggs may either make their exit through them, or through the mouth. Dr. Lamosroux, however, remarks that these details require to be further investigated before they can be implicitly adopted.

Baron Cuvier describes the parts in question as a rather complicated and obscure organization between the inner cavity and the outer skin, consisting chiefly of vertical and fibrous plates (feuillets), to which the egg organs adhere, similar to threads very much twisted. The intervals between these plates communicate with the tentacula; and it further appears that water can enter and escape through the minute
than the rise of the barometer; but this cannot be practically taken advantage of except during summer, as the cold of winter drives the ascidians from the shore to the deeper waters, where the temperature is more equable and calm. On changing their place of abode, some abandon themselves to the mercy of the waves, others creep along the bottom, turning themselves inside out, and making use of their tentaculars as feet. When they find a suitable place, they fix themselves often so firmly, that they cannot be detached without tearing their bodies. Dicquemaure, and many others, suppose that this adherence, continuing even after the death of the animal, can only be accounted for from a viscid fluid secreted at pleasure; while others, with MM. Bose and Lamouroux, believe that it is caused by suction, producing a vacuum.

Our distinguished English naturalist, Ellis, has given a very minute and, so far as it goes, an accurate account of these animals in thePhilosophical Transactions, part of which it may be interesting to quote:—

‘The lower part,’ he says, ‘of these bodies have a communication with a firm, fleshy, wrinkled tube, which sticks fast to the rocks, and sends forth other fleshy tubes, which creep along them in various directions. These are full of different sizes of these remarkable animals, which rise up irregularly in groups near to one another.

‘This adhering tube, that secures them fast to the rock or shelly bottom, is worthy of our notice. The knobs that we observe are formed in several parts of the stomach, and might be the cause of the inequalities of the coral rock, or by grasping pieces of shells, part of which still remain in it, with the fleshy substance grown over them. This shows us the in strength of nature, that directs these animals to preserve themselves from the violence of the waves, not unlike the anchoring of mussels, by their fine silken filaments that end in suckers; or rather, like the shelly basis of the serpula, or worm-shell, the tree oyster, and the slipper barnacle, &c., whose bases conform to the shape of whatever substance they fix themselves to, grasping it fast with their testaceous claws, to withstand the fury of a storm.

‘When we view the inside of this animal dissected lengthwise, we find like a little tube leading from the mouth to the stomach, from whence there rise eight wrinkled fleshy guts, in a circular order, with a yellowish soft substance in them; these bend over, in the form of arches, towards the lower parts of the bulb, from whence they may be traced downwards, to the narrow part of the upright tube, till they come to the fleshy adhering tube, where some of these may be perceived entering into a papilla, or the beginning of an animal of the like kind, most probably to convey nourishment till it is provided with claws; the remaining part of these slender guts are continued on these fleshy tube, without doubt, for the same purpose of producing and supporting more young ones from the same common parent.

‘The many longitudinal fibres that we discover lying parallel to each other, on the inside of the semi-transparent skin, and all inserted in the several claus are the stomach, the mouth, and are plainly the tendons or muscles for moving and directing the claws at the will of the animal: these may be likewise traced down to the adhering tube.’—(Phil. Trans., vol. viii.)

A strong light incommodes the actinia, noise startles them, they are affected by odours, and fresh water causes them to die. These various feelings originate in their great irritability, which appears to increase according to their sufferings. They can support a temperature as low as 45°, and up to 140°, Fahr.; but beyond these extremes they die. They are often left exposed to the air during spring-tides: but in such cases they always retain a great quantity of water, which they squirt out with force when molested.

These singular creatures have a power of reproduction equal to that so well known in the fresh-water polypus. (Polypus viridis, Bory.) They may be cut perpendicularly or across, and each cutting will give origin to a new animal. The young actinia are seen issuing, already formed, sometimes from the mouth, and sometimes from the base of the animal. When this is dismembered, a portion remaining attached to the rock, where it continues to live, increasing in size, becoming more and more rounded, while, in a short time, a mouth, stomach, and tentaculumb are formed, presenting, to the surface of the observer, a complete circle of the base of the animal. The species of the sections of this base give out globules, which are detached, fix themselves upon adjacent rocks, where they grow, and produce a new colony like the parent animal.

Vertical section of the above, to show its interior structure.

a. The skin.
b. The tendons by which the animal is fixed to the rocks.
c. The three rows of feathers (tentaculaa).
d. The brain.
e. The stomach.
f. The longitudinal muscles.
g. Point at which they unite.

a. The ovaries, which open by their oviducts into the stomach.

The ovaries greatly magnified.

a. The oviduct.
b. Eggs.
c. Ditto, with the first appearance of the embryo
d. Ditto, further advanced.
e. Ditto.

Distribution of the nerves, at the base of the actinia.
a. Nervous ganglia.
b. Nerves.
c. Nerves of communication between the ganglia.
d. The longitudinal muscles.

Longitudinal muscles, with the tendons (muscified).

These cuts are from the Annales du Muséum, vol. xii. plate 33.

openings of these around the mouth; at least, the animal can thence squirt water.

The Abbé Dicquemaure studied the actinia in a manner worthy of the highest praise, having observed them in all their stages, and multiplied his experiments to a great extent. It is not, therefore, to be wondered at that most authors have contended themselves with copying his details. He tells us that the forms of actinia vary according to their contraction or expansion, presenting innumerable varieties. Their expansion is a more certain indicator of fine weather
The *actina* feed upon *molex*, and other small crustaceous and molluscan animals and fishes, which they seize with their tentacula, and afterwards disgorge what they cannot digest. They are found in every sea, some suspended from the vaults of sub-marine reefs, others covering the more exposed sides of rocks with a sort of flower-like tapestry, and some confining themselves to the smooth sands, on the surface of which they spread out their tentacula, and even withdraw under a close sand when danger threatens. Each species, indeed, generally selects a peculiar haunt. With the exception of the green species (*Actinia viridis*, Forskål), none of them sting when touched in the manner of the *molex*.

Many of the species are used as food in tropical countries, on whose coasts they are more numerous than in colder climates. Of those found in a sub-marine rock-basin at Barbadoes, we have a curious account by Hughes, in his Natural History of the Island.

"In the middle of the basin," he says, "there is a fixed stone or rock, which is always under water. Round its sides, at different depths, seldom exceeding eighteen inches, are seen, at all times of the year, issuing out of little holes, certain substances that have the appearance of fine radiated flowers, of a pale yellow, or a bright straw colour, slightly tinged with green, having a circular border of thick-set petals, about the size of, and much resembling, those of a single garden marguerite, except that the whole of this seeming flower is narrower at the discus, or setting on of the leaves, than any flower of that kind.

"I have attempted to pluck one of these from the rock, to which they are always fixed; but never could effect it; as soon as my fingers came within two or three inches of it, it would instantly contract itself, and shrunk back into the hole of the rock, and if left undisturbed for about four minutes, it would come gradually in sight, expanding, though at first very cautiously, its seeming leaves, till at last it appeared in its former bloom. However, it would again contract, with a surprising quickness, when I came within a little distance of it. Having tried the same experiment, by attempting to touch it with my cane and a small slender rod, the effect was the same.

"Though I could not by any means contrive to take or pluck one of these animals entire, yet I once cut off with a knife which I had held for a long time out of sight near the mouth of a hole out of which one of these animals appeared, in its seeming leaves. These, when out of the water, retained their shape and colour; but being composed of a membrane-like substance, surprisingly thin, it soon shrivelled up and decayed. Many people coming to see these strange creatures, and occasioning some inconvenience to a person through whose grounds they were obliged to pass, he resolved to destroy the objects of their curiosity, and, that he might do so effectually, caused all the holes out of which they appeared to be carefully bored and drilled with an iron instrument, so that we cannot suppose but their bodies must have been entirely crushed to a pulp; nevertheless, they appeared in a few weeks from the very same places.

Twenty-five species of *actinia* have been described, but many of them not with sufficient distinctness, and it is probable many more will be ultimately ascertained. The following are not uncommon:

The leathery animal-flower (*Actinia senilis*, Gmelin), which is three inches broad, with a leathery, unequal envelope of an orange colour; the tentacula in two ranks, usually marked with a rose-coloured ring. Its abode is usually in the sand.

The purple animal-flower (*Actinia equina*, Dequierd) which has a soft skin, finely striated, usually of a beautiful purple, often clouded with green. The tentacula, to the number of a hundred, vary much in colour. When the tide retires, this species may be seen ornamenting the sea-rocks with its beautiful colours—purple, violet, blue, pink, yellow, and green, like so many flowers," says M. Lamouroux, "in a meadow.

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**Fig. 7.**

Purple animal-flower (*A. equina*).

The white animal-flower (*Actinia plumosa*, Cuvier) is four or more inches broad, of a white colour; the margins of the mouth expanded into lobes, all furnished with membranous tentacula. There is an inner row of these, still larger.

**Fig. 8.**

White animal-flower (*A. plumosa*).

The brown animal-flower (*Actinia effeta*) is of a clear brown, radiated lengthwise with white, and of a handsome shape, often contracted at the base. The skin is glossy; the tentacula numerous. When it contracts itself there is frequently issue from the mouth long filaments, which come from the egg organs (ovaria). It attaches itself chiefly to shells, and is very common in the Mediterranean.

The carnation animal-flower (*Actinia Jurandula*, Linnaeus) has very numerous tentacula, which are of a deep crimson, and, when expanded, give the animal the appearance of a fine double carnation. The inhabitants on the shores of the Mediterranean, particularly the Italians, esteem this species as very delicate for the table.

Dr. Rupple has recently divided from the other those whose tentacula are branched (*Thalassemella*, Ruppel), and those whose tentacula are so short as to be scarcely obvious (*Dioscyma*, Ruppel).
ACTION (law) is the mode of proceeding by which a man seeks to recover, through the intervention of the law, that which is legally due to him: it has been defined by some ancient writers to be 'a lawful demand of one's right;' and generally, 'the right done by a judicial proceeding that which is due.' The general object of actions is to put a party into possession of a right which he has been injuriously deprived of. This may be effected, where lands or goods are wrongfully withheld, by the actual delivery of them to the legal proprietor; but in the case of assaults, slander, breaches of contract, or other personal wrongs, the only possible remedy is to award to the sufferer a pecuniary compensation for the injury he has sustained. By the law of England, certain specific forms are appointed in which legal remedies are to be enforced in the infinite variety of disputes and controversies arising between individuals. The various modes and instruments by which those remedies are pursued and obtained, are: actions, suits, tiffs, detractions, and suits of trespass. The principle of the law of England that for every wrong sustained by an individual there should be a remedy, does not, however, apply universally. Where the wrong is of such a nature that the detriment to the public is of more consequence than to the individual, it becomes the subject of a criminal prosecution; and no right of action exists in the injured party for the remedy of his private wrong, until the offender has been tried and undergone punishment as a criminal. For those wrongs in general done by one individual to another, which do not amount to legal crimes, the proper remedy is by action.

Actions in England are usually divided into three kinds, according to the subjects of them; viz., real, personal, and mixed.

Real actions are so called because they exclusively refer to real property, or subjects connected with land. The law regards this as the highest kind of property, and distinguishes it from all other personal property by the name of real. Real actions are divided into the recovery of lands or tenements, rents, advowsons, or other hereditaments. Real actions were, in the earlier periods of the history of English law, of constant and daily occurrence; and our ancient books of reports are principally occupied with the cases of real property; which, before the 10th of Edward I., attained to commercial importance, was the most valuable and ordinary species of property, and, consequently, the most fruitful source of litigation. From the nicey and inconvenient length of the process they are at the present day almost entirely discontinued; and more simple and expeditious modes of trying titles to land by mixed and personal actions are generally introduced.

Personal actions are by far the most numerous class of actions. It is by them that the injustice of the rights respecting debts, promises, and contracts are settled; and that compensation is sought for personal insults and injuries of almost every description, including even some of the minor crimes and misdemeanours, which thus become punishable by such personal actions as suits of trespass.

Mixed actions partake of the nature of both the former actions, being brought for the recovery of lands, and also for personal damages,—either for some injury done to the land, or some other wrong, such as the illegal detention of a tenant. The action here considered is an example of this; the owner of the inheritance brings his action against the tenant for life who has committed waste on the land by cutting down trees or otherwise. In this action, he not only recovers the place upon which the waste was done, but also costs of suit; and he could if he would make it a real action), but by the statute of Gloucester he is entitled to treble damages as a personal compensation for the injury done to the land; and thus both kinds of action being joined together, give to the compound the denomination of a mixed action.

The outline of the general course of proceedings in an action is as follows:—The injured person (called the plaintiff) obtains a writ against his adversary (the defendant), who, upon being taken by value of the writ in order to secure his appearance at the trial. When this is done, the plaintiff makes a written statement or declaration of the ground of his action, and prays to be restored to his right, or compensated for the injury which he alleges himself to have sustained. The defendant then pleads, i.e. he answers the declaration by contradicting the allegations contained in it; asserting his own right, or justifying his conduct: to this the plaintiff may reply; and thus the parties may continue to allege in legal language, or special pleading, until one or more material questions of fact are distinctly asserted by one party and denied by the other. These questions, which are called the issues in the cause, are then to be tried by the jury, who, after hearing the evidence of both parties, give their verdict either for the plaintiff or defendant. In pursuance of this verdict, the judgment is pronounced by the judges of the court to which the proceeding belongs, and the judgment is executed by the sheriff or other proper officer.

For more particular respecting actions, see Bacon's Abridgment.—Viner's Abridgment—Comyn's Digest—Jacobs's Law Dictionary.

ACTIUM, a point of land at the entrance of the Ambracian bay, now the gulf of Arta, which derives its chief importance from the sea-fight which took place near it in the bay of Penase, between Caesar Octavianus and Marcus Antonius, n.c. 31. The latter was completely defeated, and fled with his mistress Cleopatra, who was present at the engagement, into Egypt.

The conqueror, to commemorate his victory, beautified the temple of Apollo which stood at Actium, and erected Nicopolis, or the city of victory, on the southern side of the gulf, a few miles from the present city of Prevesa. In the article 'Actium' we stated that Tacitus includes Nicopolis in the limits of the Roman province of Epirus; and of course Actium also would be comprised within the same political division. We find it still impossible to fix the northern limits of Epirus with accuracy; but we may here remark that what we called the Roman province of Epirus was probably comprised within the limits of the extensive government of Macedonia.

The exact site of Actium has been a subject of dispute, some placing it at La Punta, or Fort La Punta, and others at Azio, as represented in the accompanying plan, which is taken from a very recent survey. The plan shows only part of the gulf of Arta (see ARTA). The name Azio would appear to favour the supposition of this point being the ancient Actium, but it is merely a Venetian term, probably given through some misunderstanding as to the locality of Actium. Strabo says that Actium is that point which forms one side of the entrance of the bay, and it is also clear from what he further says, that he considered the entrance of the bay to be between Prevesa and Fort La Punta. He also gives to this passage a width of a little more than four stadia, or half a mile, which appears from the plan to be true when applied to the first narrow entrance, but not to the second. Anactorium, a place about four miles from the temple of Apollo, at this point, and not far from Cape Madonna, is at or near Anactorium. To make it still clearer to his readers, Strabo, after describing the coast northwards of the entrance to this bay (i.e. the entrance itself, following the line of coast, and this word entrance can only be applied to the strait of La Punta. 'Near the entrance on the right,' says Strabo, 'is the sacred place of Apollo of Actium, an eminence with a temple on it, and below, a plain with a grove of trees and a dock-yard.'
This description is said to be by some to suit C. Madonna better than La Punta, because Madonna is high and Punta low. But Strabo says the temple is on an eminence, and this eminence some distance from the sea; he does not say that the temple was on an eminence, which eminence was on the sea.

*Action* is a name derived from a Greek word *acte*, which, in the sense of *actus*, is a piece of land projecting into the sea, and attached to another, larger piece of land, but not necessarily by a narrow neck. Thus, the projecting land on which La Punta and C. Madonna stand both have the name of acto. Here doth the minor itself compare with the whole of Asia; and Africa itself (which he believed to be much smaller than it is) is *acto*, projecting from the mass of Asia.

*Active Molecules*, in plants, are extremely minute, apparently spherical, moving particles, found in all vegetable matter when rubbed in pieces and examined under very powerful microscopes. In size they vary from the *γ* to *δ* of an inch in diameter, and are only to be detected with lenses capable of magnifying at least 300 diameters. Viewed under favorable circumstances, immersed in water, and with transmitted light, they are seen to have a rapid motion of an oscillating nature, so that a minute drop of the fluid in which they swim seems to be as a whole to melt into the pollen of a plant, and pass from one to another. They are extremely numerous, and perfectly distinct from each other, so that a grain of pollen crushed in water is one of the best subjects for the observer to select; he will there find the active molecules mixed with oblong or cylindrical particles, of a larger size, and in the motion; these are the spermatozoa, or granules, by the agency of which the fertilization of plants probably takes place, as will be hereafter explained under the article *pollen*. To find the active molecules in other parts of plants, it is necessary that they should be crushed and, when the drop of water till it becomes greenish; a drop of the coloured fluid will be found to contain vast numbers of these molecules moving about with great rapidity and exhibiting every appearance of animal life. Curious as these circumstances undoubtedly are, it is still more singular that the movements of the molecules do not cease with the life of a plant; on the contrary, they have been witnessed by Dr. Brown even in the fossilized remains of vegetables, and may be readily seen by colouring water with the dead vegetable matter called Gambose, when the molecules are instantly set at liberty and commence their motions.

It appears from these facts that if plants are reduced to their organic elements, they are all composed of the same simple molecular matter, in different states of combination; that the beautiful trees that are our ornament, and the humble lichen that encrusts our ancient buildings, alike composed of similar particles, which are capable of motion when at liberty; that they lose that power, and apparently their separate life, when they are combined by the irruption of one into other beings of a more complicated structure, but still forming life; that their inherent vitality does not cease with that of the object into which they have been combined, but endures through many ages even when buried in the bowels of the earth: and, finally, that their original powers are restored to them the instant they are liberated from their prison.

It has been thought by some, that the motions above described could be accounted for by evaporation, or by the unstable equilibrium of the molecules in the fluid in which they are suspended, or by currents, or by currents in the water, or by gradual dissociation of the molecules, or by attractions and repulsions among the molecules themselves; but it is difficult to reconcile with such hypotheses the following ingenious experiments of Dr. Brown, the great observer of these phenomena, to whom the reward of the premium for the most accurate information upon the subject. Take a drop of water in which a small quantity of the molecules is known to be floating; mix it well, by shaking it violently, among a mass of particles of one or more, of a different nature, or by currents in the water, or by gradual alteration of the composition of the fluid; the water will continue to be divided into extremely minute globules, each of which will be inclosed in a coating of oil; if the smallest of the globules, thus obtained, be examined, they will be found to contain two, or three, or even one only of the molecules, caught, as it were, in the meshes of the web which is interwoven for them, and observed. Under such circumstances, no alteration whatever can be discovered in their movements, which continue the same as before the water in which they float was coated with oil. The inversion of this experiment by mixing a small quantity of oil, in like manner, among a large quantity of water, produces drops no bigger than the molecules themselves; but these drops, when mixed with the oil and observed under precisely the same circumstances, exhibited no movements whatever.

For further information upon this subject, see Brown's account of *Lectical Observations*, made in June, July, and August, 1827.

ACTON, JOSEPH, the prime minister of the court of Naples for several years, was the son of an Irish gentleman, who practised medicine at Bensancon, in France. He was born in the year 1719, and educated at the University of Paris, and was early employed in the service of the French nation, of which country he was a subject, and which country co-operated with that of Spain, Acton commanded the Tuscan vessels; and by his policy he was employed in preserving the independence of that country, in checking the violations of justice, which occurred at Naples subsequent to the period of the French invasion, in 1799, ascribed to the power or the influence of Acton. He was said to have died in obscurity in Sicily, in 1808.

ACTS OF SEDERUNT (in the municipal law of Scotland) are statutes made by the Lords of Session, by virtue of a Scottish Act of Parliament, passed in 1540, empowering them to make such constitutions as they might think expedient for the purpose of and for administering justice. These are called Acts of Sederunt because they are made by the Lords of Session sitting in judgment.

ACTS OF THE APOSTLES.—[See APOSTLES]

ACTUARY, a word which, properly speaking, might mean any registrar of a public body, but which is generally used to signify the manager of a joint-stock company under a board of directors, particularly of an insurance company; whence it has come to stand generally for a person skilled in the doctrine of life annuities and insurances, who is in the habit of giving opinions upon cases of annuities, reversions, &c. Most of those called actuaries combine both the public and private part of the character. An actuary is usually the financial adviser to the board which gives him office, in all matters involving calculation, on which it may be supposed that the members of the latter are not generally competent to form opinions themselves.

ACTUS, as the name is being recognized in the statute 59 Geo. III. c. 128 (or the Friendly Societies' Act of 1819), which enacts that no justice of the peace shall allow of any tables, &c., to be adopted in any Friendly Society, unless the same shall have been approved by two persons, at the least, known to be professional actuaries, or persons skilled in calculation,—a definition much too vague to be any sufficient guide. The Committee on Friendly Societies of 1825 reported that 'petty schoolmasters or accountants, whose opinion upon the probability of sickness and the duration of life; upon the value of lives, or by any calculation in the national debt office under this title, and recommended that the actuary of the National Debt Office should be the only recognized authority for the purposes above-mentioned; in which recommendation the Committee of 1827 joined. In the 18 Geo. IV. c. 56, for the first time, the name of actuary is enacted for the purpose of settling this matter. We may further mention that, by the Act of 1819, no Friendly Society can be dissolved, or any division of money made otherwise than in the ordinary course, without the certificate of two actuaries, that the interests of all the members have been completely ascertained, and payment.

ACULEUS, or PRICKLE, in Botany, is a hard, conical, often curved, expansion of the bark of some plants, such as citrus fruits, except for many species that are poisonous to enemies, or to enable them to hook themselves upon their neighbours, so as to gain a more free access to light and air or for other purposes unknown to us. The prickles are composed entirely of cellular tissue, which is at first soft and
flexible, and only acquires its hardness and rigidity when old. In some respects it may be compared to a hair, from which it chiefly differs in its large size and greater permanence. The young hairs will not confound the prickle with the spine or thorn, which is of a totally different nature. [See Spine.] They may be distinguished by the prickle breaking readily from the bark, leaving a clear scar behind; while the spine cannot be torn off the bark, but, on the contrary, it invariably detaches the bark of the wood. Hard leaves are often metamorphosed into spines, but never into scales. [See Metamorphosis of Plants.]

ACUPUNCTURE, a term used to denote the insertion of a needle into the skin or flesh. Acupuncture is an operation that has been tried by many nations, and which appears to have been adopted there from the notion that several diseases attended with severe pain arise from air or vapor pent up in the body, to which a puncture with a needle affords an outlet, and thereby removes the malady. Europeans travelled in those countries several times witnessed the practice, and were struck with the results; but either their reports were not credited, or the operation appeared to the physicians and surgeons of Europe so improbable, that upwards of a century elapsed after the knowledge of it was familiar to many European practitioners, before a single trial of it was made. As long back as the year 1679, a medical officer in the East India Company's service states that a guard of the Emperor of Japan, apprised of the power of the Chinese to relieve them of violent pain of the abdomen, attended with vomiting, in consequence of having drank a quantity oficed water when hastened. After trying in vain to relieve his complaint by taking wine and ginger, and conceiving that his suffering was due to a vitiated stomach, he thrust a needle up to the extent of an inch, and instantly felt the pain instantly relieved. Afterward, a number of similar instances of the relief derived from acupuncture were given, and it was observed that the point of the needle was never struck through the skin, but merely touched it, and that the sensation of pain was immediately relieved. From this time forward, the Art of Acupuncture was cultivated in Europe, and many patients were relieved from the pain of many diseases. It was not until the celebrated Vieux-d'Azyr, in the Encyclopédie Méthodique, merely for the purpose of congratulating the world on the discovery, that he published a account of the facts he had observed. Vieux-d'Azyr, who had given the first accounts of it, had not induced any European physician or surgeon to practice it. In the year 1810, however, some trials of it were made by Dr. Heber, a physician of Paris, who found, or fancied he found, a very efficacious a remedy, that he was induced to employ it extensively, and many French practitioners imitated his example with the same apparent success. It has been subsequently tried in England, and sufficient experience of it has been obtained to prove that the operation itself is attended with the greatest safety, and that it may be employed at least with safety, if not with advantage. There are two cases in which it seems likely to be beneficial—first, in painful local affections unattended with change of structure in the part affected, and without local inflammation or general fever—and, secondly, in those cases of dropsey termed anasarca, in which the water is accumulated in the cells of the cellular membrane that lies beneath the skin. It is probable that all the cases of the first class of disorders and of the latter of the parts affected, technically termed cases of hyposthemia. There cannot be a question that this remedy has proved beneficial in cases of this kind sufficiently to warrant the trial of it, where these disorders do not yield to the ordinary modes of treatment, and under these circumstances there is the greater reason for resorting to it, since the operation occasions no pain, and since no evil consequence of any kind has ever been known to result from it. But if the part affected be inflamed, and more especially if there be any degree of febrile action in the system, the acupuncture of the diseased part certainly do no good, and will very likely produce mischief.

In anasarca a few punctures made with the needle will allow a ready exit to the fluid, which may continue to drain during several days in succession; and when this is the case, the benefit of the relief, and consequent benefit of the disease, is more constant than in other instances. Scarification is a remedy of the same kind in ordinary use, but the inflammation that results from this practice is sometimes severe, and occasionally runs into mortification. Acupuncture is affirmed by many to be equally effectual, and to be much less apt to be attended with these evil consequences.

The needles employed in oriental countries are always made of the purest gold or silver; those of gold are preferred, and great care is taken to obtain them well tempered. In China their manufacture is a distinct occupation, understood by few, and those few are licensed by the emperor. Some of these needles are fine, about four inches in length, with a spiral handle, for the purpose of more easily turning them, and are kept by means of a ring, or a piece of silk thread, in grooves, each capable of holding one needle: the grooves are formed in each side of a hammer, usually made of the polished horn of the wild ox, ivory, or some other hard wood; it is rather large at the handle end, and has a roundish head, covered on the side that strikes with a piece of leather, and rendered heavier by a little lead within. The needles employed in Europe are of steel, long and fine, and furnished either with a knob of sealing-wax at the handle, or what is more convenient, a little handle of ivory or wood, screwed into a sheath for the needle. They are best introduced by a slight pressure, and a semi-rotating motion, between the thumb and forefinger, and withdrawn with the same motion. In cases of neuraltic pain the needle should be allowed to remain in from a quarter of an hour to two hours. It would appear, that in cases of this kind, a number of needles introduced, and hastily withdrawn, is not as effectual as the introduction of a single's needle that is allowed to remain for the space of a couple of hours. When the only object is to afford an exit to the fluid collected in anasarca, of course the mere puncture is sufficient; there is no use in allowing the needle to remain.

AD LIBITUM (Latin, or ad lib. in Music, at discretion, at pleasure), denotes that the performer is at liberty to pause, or to introduce any cadence or addition of his own, according to his judgment. An accompaniment is said to be ad libitum, when it is not essential, and may be either used or omitted, according to the discretion of the performer. Other circumstances may require, without materially affecting the composition.

ADA'GIO, in Music, an Italian adverb, signifying slowly, leisurely, and used to indicate the slowest movement in an orchestra. These are sometimes given an entire measure of time. The Italian composers have ranked Largo as a degree slower; but an examination of the works of those who were the earliest to use both terms, as well as of the practical interpretation of the best and most correct composers, will be sufficient to shew the error he was in.

It is now, and has long been, the custom to point out the quickness or slowness, as also the manner or character, of a piece of music, by some Italian word, placed at the beginning of the composition. These are sometimes given a meaning assigned to the purpose, and much is commonly left to the judgment of the performer, which but too frequently cannot very safely be relied on. The use of the metronome [see Metronome], or, indeed, of any other kind of pulldown, which is going ground in spite of prejudice, fixes the intention of the composer as regards movement, that is to say, quickness or slowness. With respect to style, to the passion meant to be expressed, much must still depend on the taste and intelligence of those to whom the execution of a work is entrusted.

The five principal terms denoting the degrees of motion, beginning from the slowest and proceeding to the quickest, are—

Adagio, very slow.
Largo, slow.
Andante, a moderate time.
Allegro, quick.
Presto, very quick.
ADAM, the first man, and progenitor of the human race, whom God formed of the dust of the ground, on the sixth and last day of the creation, as related in the first and second chapters of Genesis. The whole of the authentic history of Adam is contained in the first two chapters of that book. His loss of the state of innocence and felicity which he originally enjoyed, is commonly known by the name of the Fall. It was after this event, and his expulsion from the Garden of Eden, or the terrestrial Paradise, that his eldest son Cain was begotten; and his second son, was Abel, who was born when he was a hundred and thirty years old. But he is also stated to have had other sons and daughters, whose names are not given. He died at the age of nine hundred and thirty, and therefore, according to the calendar of the Jewish computation, his death was in the year 2504 before the birth of Christ. Many fables have been invented, and idle questions raised, by the rabbinical writers and others, respecting Adam, for which there is no warrant whatever in Scripture. He was, however, a character well fitted to contend with these; to consult the articles in Bible, and in Calmet's Dictionary of the Bible. The word Adam means 'to be red,' and it is supposed that in allusion to the significane of this Hebrew word, the earth out of which Adam was made was called 'Adamic,' while others think that the name 'Adam' contains an allusion to the reddish colour of a healthy person. See the use of the word 'adam' in the Song of Solomon, v. 10. According to Ludolf, Adamah, in the Ethiopic, means beautiful, elegant,' &c; denoting man to be the chief work of God. In the New Testament, the New Adam, is frequently used to designate our Saviour.

ADAM, ALEXANDER, LL.D., a late eminent teacher of Latin, who was born in June 1741, at Coatsburg, in the county of Dumbarton, Morayshire. The state of his parents was very humble, but the parish school enabled him to obtain for his son the rudiments of a good education, at an expense not beyond their scanty means. After having acquired the ordinary knowledge of Latin here, young Adam proceeded to Aberdeen, in the hope of obtaining one of the small exhibitions, or bursaries, which are open for annual competition at King's College, to persons proposing to become students at that seminary. In this expectation, however, he was disappointed. He then resolved to enter himself at the University of Edinburgh, and to trust to his own exertions and fortitude to enable him to struggle through the usual course. This was in the winter of 1768. His difficulties and privations while attending college were very great, and of a character well fitted to contend with the hardships which it was his lot to encounter; and though he was sometimes reduced to such destitution as not to know where to obtain a mouthful of bread, he manfully persevered in hard study till he gained the reputation of being one of the best scholars in the University. His merits were so much rewarded by his appointment, in 1761, to the office of one of the teachers in Watson's Hospital, an institution in Edinburgh for the education and support of the sons of decayed burgesses or tradesmen. He held this situation for ten years, from 1767, when the ability and success with which he had discharged his duties, oblige him to be chosen assistant to the Rector of the High School, the chief classical seminary of the city. Finally, in 1771, on the death of the rector, Adam was elected by the magistrates of the city to succeed him in this honourable place, and remained throughout the rest of his life. The first years of his rectorsip, however, were somewhat stormy. In 1772 he published a little work, entitled 'The Principles of Latin and English Grammar,' and he introduced it into the school as a substitute for Ruddiman's Grammar, which had been for many years the established manual. The four under-masters resisted this innovation, and at last the dispute grew to such a height, that it became necessary to call in all the magistrates, and to set up a committee of the school, to introduce the new system. The proceedings took place are very fully detailed in Chalmers's Life of Ruddiman (pp. 91-96, and 390-403). From the statement there given, it appears that the matter was first submitted to the principal and his council, in November 1767, but at length, when the matter was referred to the decision of the principal, and two of the Professors of the University. These learned persons took due time for deliberation, and on the 15th of October drew up a report, recommending that Ruddiman's Grammar be continued, but permitting the rector to introduce into his own class such additions from the rival work as he might deem necessary or proper. This decision, however, it would appear, did not settle the dispute. On the 7th of November we find the business again brought before the magistrates by a remonstrance from the under-masters against the decision of the professors, and a petition that the old grammar alone should be tolerated in the school. The magistrates, thus again appealed to, resolved on the 23rd of November, to give the rector leave to introduce the new system; but at length, on the 23d of August, 1786, they issued an explicit prohibition against the rector's book, in conformity to the under-masters' prayer. Adam now in his turn became the remonstrant; but a letter which he wrote only produced the effect of increasing the difficulty and embarrassment. In the following works:—In 1791 a volume entitled 'Roman Antiquities,' which has gone through several editions, and been translated into German, French, and Italian; in 1794, a Summary of the Philosophy and History of the times respecting 1800 a Dictionary of Classical Biography; and in 1802 a Latin Dictionary, under the title of 'Lexicon Linguae Latinae Compendium,' being an abridgment of a larger work, on which he had been long engaged. A second edition of this last has been published since the author's death, with very considerable alterations, both in the way of addition and of curtailment. Both this dictionary and the Roman Antiquities are much used in the schools of Scotland. No person filling a public situation was more universally respected. The expression of the last days of his life, was 'God grant me never to be sick again!' He was carried off by apoplexy on the 18th of December, 1809, in his sixty-ninth year, and was honoured by his fellow-citizens with a public funeral. A memoir of his life was published in 1810, in 1818. Of the four works just enumerated, the most valuable and the best known is the treatise on Roman Antiquities. Few books in so small a compass contain so large a mass of useful information, and the matter, multifarious as it is, is, in general, digested and arranged with great success, and it is one which pervades many parts of the work, is an instance to the effects of time in changing the customs of the Romans. If the habits of one people differ from those of another, no less distinct is the character of the same nation at distant periods of its existence. While the distribution of political power and the signification of political terms vary on the one hand, on the other, the whole face of private life is changed by revolutions equally complete. Thus, the deus ex machina of the ancient Romans, connected with the political institutions of Rome, yet, not perceiving how the meaning of terms varied in the different ages, he has often so arranged the passages extracted by his predecessors from others on this subject, as entirely to lead both himself and his reader astray. Indeed, when Dr. Adam wrote, the whole of this department of Roman Antiquities was one confused chaos, which has been only reduced
again to order by the extraordinary talent and learning of Niebuhr and other writers. Again, some corrections and many additions are required in the section on the Roman year, particularly for the periods prior to the Julian corre-

sion. No little caution, also, should be observed in reading the remarks on Roman money, a subject of especial difficulty, in which it is often more prudent to be satisfied with ignorance, than to adopt the ordinary interpretations. The value of the Roman coins was constantly changing, and this not consistently. Secondly, the numerical notation em-

ployed by the Romans is particularly liable to corruption in the MSS.; and, even where the text is not corrupted, the interlacing of the Dalmatian part of the inscription, makes it easily point out. Yet, with all these drawbacks, the work is of great value to all who read the history or the literature of Rome, and does great credit to Dr. Adam. It

ought not to detract from his reputation that he has not anticipated the important discoveries made by the Germans in the last twenty years; but undoubtedly it is to be desired, and none would have desired it more than Dr. Adam himself, that the substance of these discoveries should now be in-

corporated in the work, in the place of what is defective or erroneous.

The treatise on Classical Biography is intended chiefly for the illustration of Roman History, and within these limits had a decided superiority over any other work in our language. In large for easier a circulation than we believe it possesses in England. And we may say the same of Dr. Adam's Latin Dictionary, which has been prevented from superseding the octavo edition of the Dalmatian Dictionary, perhaps only by the

convenient arrangement adopted by Adams, who often neglects the alphabetical order, to bring together words etymologically connected. The summary of History, and Geography, published by Dr. Adam, has in parts great merit; but it falls much short of that which the peculiar character of the book, and the limits of time and space, would admit of. The

works of the authors have added an extensive index of geography, and thirteen maps of little value. Bulky as the volume is, there is not, and cannot be, room for information of any value, on so vast a scale, in so small a space as 430 pages. The names, its tenor is to confound rather than inform the understanding. But when we look at all that Dr. Adam did, we can fairly say that no writer in the British islands has ever done more to assist the young student of Latin, or, what is perhaps more important, to that study with the attainment of general knowledge.

ADAM, JAMES, an architect of the last century, who is not at all known but as the partner and associate of his brother Robert, the subject of the following article. He died in 1794.

ADAM, ROBERT, an architect who was extensively em-

ployed both in England and Scotland, but more particularly in London, in which city he also engaged in some very considerable building speculations. He was born at Kirkaldy, in Fif-

eshire, according to some authorities, and, according to others,
at Edinburgh, in the year 1728, and was the son of William Adam, Esq. of Maryburgh, near Kirkaldy, who is said to have furnished the designs for Hopetoun House and the Royal Infirmary of Edinburgh; but whether he was himself professionally an architect or not, does not appear. Ro-

bert received his literary education at the University of Edin-

burgh; and, from his father, it seems most likely, he derived instruction in the principles and practice of his future profession. He was a member of the Royal Society of Arts, and had the friendship of the many distinguished literary and scientific men, who were the friends and companions of his father, and among whom were numbered the great names of Hume, Reid, Adam Smith, and Adam Black.

When he was in his twenty-sixth year, Mr. R. Adam went to Italy in pursuit of professional knowledge, and re-

mained there several years. His contemporaries, James Stuart and Nicholas Revett, were, at the time of Adam's residence in Italy, engaged in exploring, and preparing for publication, the architectural remains of Athens; but so little was Grecian architecture known and appreciated, that he went, as he himself relates, to Spalato in Dalmatia, to measure and delineate the ruins of the palace of Diocletian there, a structure indicating alike the decline of civilization and the pro-

gress of barbarism. In this tour he was accompanied by Cribaseau, a French architect, whose name is connected with the remains of a Roman temple at Aosta, in Languedoc. Mr. Adam returned from the continent about the year 1762, and settled in London, and shortly after published there, in a large folio volume, engraved represen-
tations and descriptions, with attempted restorations, of some of the more important buildings of Athens, which were the first attempts of the kind, and many other attempts of the kind, are not consistent, in the more important particulars of architectural arrange-

ment, with the evidence afforded by the remains themselves, and by the remains of other palatial and domestic edifices of the same and earlier date; some of these, however, were not accessible when Mr. Adam wrote.

About the same time, 1763-4, Mr. R. Adam was appointed

architect to the king. This fortunate position made him

a great many public and private buildings in England and in Sco-

land. In 1773 the brothers commenced the publication of their

work, the Register Office, Edinburgh; Shelburne House, now Lansdowne House, Berkeley-square, London; the

parish church of Mistley, in Essex, &c. &c. At a later period the Messrs. Adam designed the inns of Glasgow, and some extensive new buildings in the University of Edin-

burgh; and, after the fire of 1796, the buildings of the Duke of Northumberland, near Brentford in Middlesex; Lord Mansfield's mansion at Caen-wood, or Kenwood, also in Middlesex; Luton House, in Bedfordshire, erected for Lord Bute; the screen to the Admiralty Office, Lon-

don; the Register Office, Edinburgh; Shelburne House, now Lansdowne House, Berkeley-square, London; the

parish church of Mistley, in Essex, &c. &c. At a later period the Messrs. Adam designed the inn...
better adapted than for detached and insulated structures. Their taste seems to have been slightly affected, and in that slight degree beneficially, by the Greek style of composition which Messrs. Stuart and Revett were then making known, but they certainly were far from entering into the spirit of it; they departed moreover almost entirely from the laws and usages of the Iulian-Vitruvian school, which was then called classical, and introduced many deviations alike inconsistent with the styles of Greece and Rome, with the laws of the schools, and with sound sense and good taste. The entire omission, or contraction, of an architrave in their entablatures, the extravagant breadth of their friezes, the large and almost uniform meanness of their columns, and the still meaner and more tasteless style of the decorative ornament with which they beplastered their friezes and ceilings, are among the most glaring faults of their peculiar manner. In their insulated compositions especially, the worst of these faults are aggravated by varieties of them being introduced, not only into different, but also into the same elevations of the same structures, which should at least harmonize even in their defects. Both Adam and Luton Houses are examples of this; they both have mean entablatures, which are differently composed and proportioned, on the same and on different fronts of the respective edifices. In mere street- fronts the style of the Messrs. Adam, as we have already said, is not only offensive, but sometimes made even pleasing. The front of the British Coffeehouse, in Cockspur Street, though a mere tripe, is by far the best of their fronts with which we are acquainted; and the Admiralty screen has more beauties and fewer defects than modern counterparts. And if they escaped that censure, it must be confessed, is less after their own manner, and more in conformity with the rules of art.

Mr. R. Adam did not retain the appointment of architect to the queen than four or five years, for he resigned it on being returned to parliament for the county of Kinross in 1768. This last circumstance, however, does not appear to have interrupted his professional avocations, for we find that he continued to be actively engaged in business down to the period of his death, which took place in March, 1779, at the sixty-fourth year of his age, in consequence of internal hemorrhage, occasioned by the rupture of a blood-vessel. He was buried in Westminster Abbey, in the south transept of which is a tablet to his memory.

As a member of society, Mr. Adam enjoys the reputation of a kindly disposition, of great sweetness of manners, and of a high moral character, which assured to him affectionate regard in private life, and confidence and esteem in public.

ADAM, (Sculptors.) There were three brothers of this name, who all enjoyed some reputation as sculptors in France in the early part of the last century. They were the sons of a sculptor named Jacob-Sigisbert Adam, who lived at Nancy. The eldest, Lambert-Sigisbert, was born on the 10th February, 1700, and made his first appearance at Paris in 1719. After remaining in that city for four years, he gained the first prize in the Academy, and proceeded to Rome on a pension allowed him by the king. He remained in that city about ten years, and furnished the design which was adopted by Cléomont XII., one of sixteen which were presented for the intended fountain of Trevi. The offers of the French government then induced him to return to Paris. On the 20th May, 1737, he was elected a member of the Institute, and afterwards appointed professor in that institution. The two best known of this sculptor's productions are, a group of Neptune and Amphirite, which he executed for the Basin of Neptune at Versailles, and on which he spent five years; and a figure of St. Jerome, originally intended for the Hospital des Invalides, but now placed in the church of St. Roch, at Paris.

They are fine specimens of the French school of that age, which, however, was one of the least brilliant periods in the history of modern art. Adam published, in 1754, a work entitled Recueil de Sculptures Antiques Grecques et Romaines. He died of apoplexy on the 13th May, 1759. Nicolas Sebastian, the next brother, was born on the 224 March, 1705. He came to Paris at the age of eighteen, and went to Rome in 1726, where, two years after, he obtained one of the prizes at the Academy of San Luca. Having remained there for nine years, he returned to Paris; and after some time was also, like his elder brother, received into the Academy. Among the designs which he produced was one for the Mausoleum of the Cardinal de Fiey. His two principal works were a tomb for the wife of King Stanislaus of Poland, and his Prometheus chained to a Rock (which has been commonly assigned by mistake to his elder brother). For the latter work he had an offer from the King of Prussia of 30,000 francs; but he declined accepting it, on the ground that the sculpture belonged to his own sovereign, for whom it had been at first intended. He died on the 27th March, 1775. The third brother, François-Gaspard, was born in 1710. He made his way, like his elder brother, to Rome, and also on his return from Italy fixed his residence in Paris. He worked for some time at Versailles, and died in Paris at 1795. [Abridged from the Biographie Universelle.

ADAM'S BRIDGE, a series of sand banks, which, with two small islands, extend from a point in the southern tip of the island of Manar (100 miles north-east of Cape Comorin) to the opposite island of Ceylon. The width of the channel is about sixty geographical miles, and there are only two navigable passages in it. One, called the Manaar passage, which separates the small island of Manaar from the adjacent coast of Ceylon, has not more than four feet water at flood-tide. The other, and more northern passage, is called the Paunbeen, and separates the main land from the island of Ramisseram, celebrated for its great pagoda and extensive remains. The Paunbeen passage is very narrow, and not more than six feet deep at high water. The space between the two nearest points of Manaar and Ramisseram, which is about thirty miles wide, is a bank of sand, only covered at high water. Thus, if a vessel of moderate size has reached the point north of the Bridge into the Gulf of Manaar, it must make the whole circuit of the island of Ceylon. The ninth degree of north latitude passes through the southern part of Manaar Island. [See Journal Educ. No. 6.]

ADAM'S PEAK, the highest point of the island of Ceylon, and probably the centre of the mountain ranges in which the largest river of that island, the Mavella Gunga, takes its rise. The following description of it is by Robert Knox, an Englishman, who was near twenty years a prisoner in the island. (London, 1681.)

"On the south side of Comde Uda is a hill, supposed to be the highest on this island, called, in the Chingilay lan embro, Hangall; but, by the Portuguese and the European natives, Adam's Peak. It is sharp like a sugar-loaf, and on the top a flat stone with the print of a foot like a man's or it, but far bigger, about as two feet long. The people o this land count it meritorious to go and worship this impres-
ADAMS, John, a distinguished American statesman. He was born in the town of Braintree, near Boston, in Massachusetts, on the 19th October, 1735, of a family which had come from England at the first settlement of the colony. At the usual age he was sent to Harvard College, in the neighboring town of Cambridge; after leaving which, he proceeded to study the law, and was in due time called to the bar. He soon raised himself in the profession which he had thus chosen, to great reputation, and extensive practice. In 1765 he published anonymously, in the Boston Gazette, a series of papers under the title of an Essay on Canon and Civil Law, intended to expose the obnoxious character of these systems, which attracted considerable notice, and were, in 1768, collected and reprinted in London. In 1765, when the first opposition of the people of America was excited by the Stamp Act, Mr. Adams took an active and important part in those measures which were then under the consideration of the House of Representatives. It was one of the reasons which eventually forced the repeal of that obnoxious statute. An offer of the lucrative office of Advocate-General in the Court of Admiralty, made to him the following year by the then British ministry, with the hope of his being a zealous advocate of the cause, was instantly rejected. He was one of the select men, or state-representatives, deputed by the several towns of the province, who in 1770 met in convention at Boston, on the announcement of the intention of the British Government to station a military force in that city in order to control the populace, exasperated by the new act imposing duties on glass, paper, tea, etc., which had been passed in 1767, and by the other measures which indicated a determination in the mother country to maintain at least the principle of her late measures. Soon after the conclusion of the convention, he was appointed to the Council of the State; but on both occasions the governor, General Gage, put his negative on the nomination. The latter year, however, he was elected one of the four representatives from the province of Massachusetts Bay, to the general Congress, which met at Philadelphia on the 16th of October, and which, among other proceedings, entered into a resolution to suspend the importation of British goods; and he was also a member of the second assembly of the same nature, held some time after, which took measures to send a petition to the British Parliament, in which he was offered the appointment of Chief Justice of his State; but this he declined, feeling that he could better serve his country in another sphere. It had already become evident to many, indeed, that the contest with Great Britain must finally be decided by the sword; and Adams seems to have been one of the first who adopted this conviction. He was accordingly one of the chief promoters of the Declaration of Independence, passed on the memorable 4th of July, 1776. The motion was made by Mr. Lee of Virginia, and seconded by Mr. Adams; who, along with Mr. Jefferson, was appointed the sub-committee to prepare the declaration. It was actually drawn up by Mr. Jefferson. In November, 1777, Mr. Adams proceeded to Paris, as a Commissioner from the United States, remaining for a short time in France, returned to America, when he was elected a Member of the Convention for preparing a new constitution for Massachusetts. In 1780 he was sent by the United States as their ambaassador to Great Britain; but in 1782, he proceeded to France, to co-operate with Dr. Franklin and his brother commissioners in the negotiations for peace with the mother country. In 1783 he was appointed the first ambassador from the United States to Great Britain, to negociate with His Majesty in that character on the 2d of June. He remained in England till October, 1787. In 1789, when Washington was elected President of the United States, Mr. Adams was elected Vice-President, and he was re-elected to the same office in 1793. He was selected to the Senate in 1797, by the appointment of Washington, he was chosen President; but he failed to be re-elected on the expiration of his first term of four years, his competitor, Mr. Jefferson, who had also been
opposed to him on the former occasion, having a majority of one vote. The general tone of the policy of Adams had been opposed to that of the democratic party, which was re-pre- pared by Jefferson; but he does not appear to have given complete satisfaction to the other great party whose leading principles he espoused. On failing in being re- elected president, he retired from public affairs to the quiet of his country residence at Quincy; declining, although nominated for the Senate, to complete his term. In the next election he was chosen a senator for the governmanship of Massachusetts. The rest of his life he spent in retirement. For some years before his death his health had become extremely feeble, and at last little more remained of the once active and eloquent statesman than the end of life, of which the morning arrived the 4th of July, 1826, the fiftieth anniversary of the Declaration of Independence. Awakened from sleep by the ringing of bells and other rejoicings of that grand jubilee, the voice of his old friend, General Strong, spoke of the meaning of the event he heard. "Oh, yes," he replied, the glow of old times seeming to return to him for a moment, "It is the glorious 4th of July!—God bless it—God bless you all!" Some time after he said,—"It is a great and glorious American day."—After a pause apparently of deep thought, 'Jefferson yet survives.' These were the last words he was heard to utter. About noon he became alarmingly ill, and at six in the evening he expired. The same day also terminated the career of Jefferson, his fellow-laborer in laying the foundations of the republic, and of the free institutions of America. The political parties of that country, and afterwards his successful rival. Except for a short time, however, these two distinguished men were friends throughout life. Besides the early publication that has been mentioned, and many fugitive pieces, Mr. Adams was the editor of a work first published at Boston in 1787, while he was in this country, under the title of 'A Defence of the Constitution and Government of the United States,' but afterwards remodeled and reprinted in 1794, with the new title of a 'History of the Principal Republics of Europe.' The work is designed to serve as an introduction to history, as a vindication of the federal principles of the American Constitution, an attachment to which, indeed, has always been considered the distinguishing characteristic of Adams as a statesman among his party. He lived till John Quincy Adams, is still alive, having spent a large part of his life in the service of the United States, and like his father, having attained the honour of being once elected to fill the office of chief magistrate of the republic. [See Emer- ged from the ...]

ADAMS, SAMUEL, a conspicuous actor in the American Revolution. He was born at Boston on the 29th of September, 1722, and received his education at Harvard College. After passing through the usual course of instruction at that college, he applied himself to the study of divinity, with the intention of becoming a preacher in the Calvinistic communion, to which his family belonged. Although he abandoned these professional views, probably his early theological studies had considerable influence in forming the character of the man; and he at any rate retained to the end of his life a stern and somewhat intolerance attachment to the religious principles in which he had been educated. He was better fitted, however, for the rule contests of poli- tics than the peaceful ministrations of a Christian clergyman. Accordingly, on the first outbreaking in his native province of the irritation and disturbances occasioned by the Stamp Act in 1765, Adams threw himself with zeal and determination upon the popular side. From that moment the forwarding and the cause of the country's independence became the business of his life. The same year in which the Stamp Act was passed, he was deputed by his fellow-citizens as one of their representatives in the legislature, of which assembly he was immediately after elected clerk. In 1774 he had the honour of being sent as one of the four members from Massachusetts to the first Congress. His name appears subscribed to the Declaration of Independence in 1776. After the conclusion of the war he was instructed by Congress to convene the convention for settling the constitution of Massachusetts; and he afterwards occupied a seat in the senate of that state, and presided over it for some years. In 1789 he was elected to the office of lieutenant-governor, and in 1794 to that of governor, to which he was re-elected in 1799, and held till 1802, when he retired from public life. He died at Boston on the 2d of October, 1803. Samuel Adams was one of the finest and most active patrons of the Revolution, and powerfully contributed to the happy termi- nation of the great cause to which he devoted his life. But he was not a politician of very enlarged views: and used as he pored in the subordinate sphere in which he acted, there can be little doubt, he saw many parts of his life that the national struggle would hardly have been begot- ten to the successful issue with which it was eventually crowned, if it had not been guided by wiser heads than his. He was actuated in the whole course of his political career almost exclusively by the desire of personal power, however guarded. 'Samuel Adams,' said one of his friends and admirers, 'would have the State of Mass- achusetts govern the Union, the town of Boston govern Mass- achusetts, and that he should govern the town of Boston.'—[Abridged from the Encyclopedia Americana.]
he demonstrated that, to effect this, it is absolutely necessary for a system to be founded upon a sound idearium; of all the parts of the objects which it comprehends, and that it cannot be confined to differences in the nature of a few organs only; the artificial system of Linnaeus he for that reason most justly considered inferior to the method of Tournefort. In many respects this method is more exalted than that of Linnaeus. The artificial system, however, is, in practice, the only one which is, in its operation, chiefly attended to, and it only becomes, by this mistake, advantageous to botanists, who have become acquainted with Linnaeus's system and who, in seeking to make the philosophy of botany their study, have unfortunately for its author, and still more for science, its views have been so distinctly advanced that his contemporaries; his perceptions of botanical truths, however, still remain uncorrected. It was by this method that the most useful discoveries may be altogether destroyed by a capricious affectation of unmeaning singularity. He had been less absurd in his nomenclature, his popularity would have certainly anticipated that of Jussieu, and might have struck some to prry or thirty years earlier, and would have been based upon the opinions he held regarding Linnaeus and his system; this has been inferred from a few complimentary expressions in a letter dated not more than a year anterior to his first attack upon the Linnaean system—expressions which have been thought to prove that the public declarations of Adanson were at variance with his private sentiments: it is, however, far more probable, as it surely is more charitable, to suppose that he was really led by that love of truth and honesty, except from which he would not have been induced to prove that he possessed. As a philanthropist, his name will always be respected by every friend of civil liberty; for he was among the first to plead the cause of the slaves, and to insist upon the impolicy, as well as injustice, of forced labour. In 1806, a new American colony of Liberia has been established, was presented by him to the French government, for the whole of the French provinces in Africa. The ministers of such a sovereign as Louis XV. were not the men to have been influenced by the names Linnaeus and Jussieu. Under such circumstances the whole work he had in contemplation, and in making experiments upon vegetable physiology. That political catastrophe overwhelmed him in the ruin it brought for a time upon his career; but the little that remained of his fortune was annihilated; he had made the brothers who inhabited the valley of the Preis. He had left to his last years, and which had been long the object of his simple care, destroyed by a ferocious raffle; and he fell into so lamentable a state of destitution, that upon the establishment of the Institute of France some years after, he was invited to become one of the earliest members, he was obliged to refuse the invitation to attend because he WERE SHOES.' In his latter days he enjoyed a small pension from the French government; but his constitution was broken by the calamities he had undergone; a complication of maladies tormented him, a softening of the bones confined him to his bed, and on the 6th August, 1866, he was finally released from his afflictions by the hand of death, in the eighty-sixth year of his age.

His last character of Adanson has been, perhaps, too highly estimated by his own countrymen, it has been most unfairly depreciated by others. That he was a man of a very comprehensive mind, of considerable learning, much experience, great acuteness, and perfect independence of thought, it is quite clear from his miscellaneous memoirs, if we had not his greater works to judge by. He is, however, a very instructive instance of the folly of eccentricity, and of the evils which to a disregard of established ideas in unimportant branches of science, which would be clear from his miscellaneous memoirs, if we had not his greater works to judge. He is, however, a very instructive instance of the folly of eccentricity, and of the evils to which a disregard of established ideas in unimportant branches of science, which would be clear from his miscellaneous memoirs, if we had not his greater works to judge. He is, however, a very instructive instance of the folly of eccentricity, and of the evils to which a disregard of established ideas in unimportant branches of science, which would be clear from his miscellaneous memoirs, if we had not his greater works to judge. He is, however, a very instructive instance of the folly of eccentricity, and of the evils to which a disregard of established ideas in unimportant branches of science, which would be clear from his miscellaneous memoirs, if we had not his greater works to judge. He is, however, a very instructive instance of the folly of eccentricity, and of the evils to which a disregard of established ideas in unimportant branches of science, which would be clear from his miscellaneous memoirs, if we had not his greater works to judge. He is, however, a very instructive instance of the folly of eccentricity, and of the evils to which a disregard of established ideas in unimportant branches of science, which would be clear from his miscellaneous memoirs, if we had not his greater works to judge. He is, however, a very instructive instance of the folly of eccentricity, and of the evils to which a disregard of established ideas in unimportant branches of science, which would be clear from his miscellaneous memoirs, if we had not his greater works to judge. He is, however, a very instructive instance of the folly of eccentricity, and of the evils to which a disregard of established ideas in unimportant branches of science, which would be clear from his miscellaneous memoirs, if we had not his greater works to judge. He is, however, a very instructive instance of the folly of eccentricity, and of the evils to which a disregard of established ideas in unimportant branches of science, which would be clear from his miscellaneous memoirs, if we had not his greater works to judge. He is, however, a very instructive instance of the folly of eccentricity, and of the evils to which a disregard of established ideas in unimportant branches of science, which would be clear from his miscellaneous memoirs, if we had not his greater works to judge. He is, however, a very instructive instance of the folly of eccentricity, and of the evils to which a disregard of established ideas in unimportant branches of science, which would be clear from his miscellaneous memoirs, if we had not his greater works to judge. He is, however, a very instructive instance of the folly of eccentricity, and of the evils to which a disreg
Adanemia belongs to the natural order Bombaceae, among which it is at once known by a broad tube of stamens and deciduous calyx, combined with a woody closed fruit, containing a soft pulp.

The only species is Adanemia digitata, the monkey-bread, sour gourd, lalo plant, &c. of the African negroes.

The word is found in Gesner, as a synonyme of the common rabbit fruit, as stated in the reference just given of the hyracorn, and is appropriated to the present genus, from the presumed similarity in size, organization, and habits, which probably existed between the latter animal and the fossil species.

The remains, upon which M. Cuvier has founded the genus Adapis, the only specimen which he was able to procure during a period of twenty-five years devoted to researches after fossil bones, consist of three fragments of skulls, found in the plaster quarries of Montmartre, celebrated for the enormous quantity and variety of the remains of extinct animals which they have produced; and which, in the hands of M. Cuvier, have effected such improvements in the kindred sciences of zoology and geology. The first of these fragments is a head, nearly perfect on the sphenoid bone, the mass of gypsum which contained it; and exhibiting the dentition nearly in a perfect form. The general outline of this skull closely resembled that of the hedgehog, but was about one-third larger; there were four incisors in each jaw, trenchant or edged and oblique; followed, on each side, by a canine tooth, of a conical form, but in other respects differing little from the molar teeth in length and figure.

Of these latter, there appear to have been seven in each side of each jaw. The first of the upper jaw was treated of last year, the second and third surrounded by a small ridge; and the remaining four flat crowned, as in ordinary herbivorous animals. In the under jaw the first three molars are pointed and trenchant, and the other four tuberculous, and similar to those which opposed them in the upper. Two other fragments procured by M. Cuvier,—one a portion of a lower, another of an upper jaw,—served to complete the description, by supplying some of the black teeth which were wanting in the more perfect specimen.

The few facts here reported, the only details which we at present possess concerning this extinct genus, are still sufficient to enable us to determine some of its most important affinities, and to assign its probable location in the system of natural beings. In fact, we only require to know the form of its feet and claws, to possess all the data necessary to determine its general conformation, as well as its habits and economy. The facts, already known, show us that the inhabitant of a former world must have belonged to that tribe of animals, which M. Cuvier denominates pachydermata, from the great thickness of their skins, and which includes all hoofed quadrupeds that do not ruminate or claw the end. Among recent, or existing animals, there are scarcely two dozen species appertaining to this group; and only eight different genera. Together, all these animals do not form another, and without any of those intermediate forms and modifications, which, in other natural orders, unite the different genera by an almost imperceptible gradation of characters. The horse, the elephant, the rhinoceros, the hippopotamus, the antelope, the camel, the giraffe, the gnu, have few characters in common; are allied to one another by no intermediate forms among the existing race of animals; and, in fact, appear to be rather the types of so many distinct and separate families, than the genera of one common order. This circumstance, so different from what is presented by all other tribes of animals, it was reserved for M. Cuvier to explain: and it is not a little singular that the fossil remains of animals which have long since ceased to exist, but which this truly great man has restored and characterized should be precisely those which it is the purposes of science to complete the connexion among the existing genera of pachyderma. Of eighty extinct species of mammals discovered by M. Cuvier, and described in the Osservanza Fossili, no fewer than fifty appertain to this order; thirty-eight of which belong to eleven distinct genera, which have no representatives among living animals. Those serve to connect the existing genera of pachydermata with one another, and to complete that gradation of characters, which, before their discovery, was so imperfect in this order of animals. This abundance of pachydermata among the fossil remains of extinct animals, compared with the very small proportion which the existing species of this genus bear to the total number of animals actually inhabiting the globe, at its present moment, is a most remarkable and curious fact, whilst the singularity of their forms, and the number of new genera which have been established upon their different modifications, are extremely interesting; more particularly when we are told that, among all the fossil remains of other orders of mammals, no single fragment has been discovered.
to indicate the former existence of a genus different from
those which subsist at the present moment.

ADAR, the twelfth month of the Hebrew year, as ap-
ppears from Esther iii. 7: 'The twelfth month, that is the
month Adar.' The name of this month is Chaldes, and
does not imply Jews that this book of the Bible, the
months are usually designated by their numerical order.

In the Jewish Calendar, Adar is the sixth month. In
eclesiastical computations, it is still the last of the year.

A year composed of twelve lunar months is shorter by
one day. Even of Pagan time, for the length of the month
is shorter it was the 25th. If a truce is to last in length, would be perpetually changing the season of its
commencement. To avoid this inconvenience, all nations
using such a year (except the Mohammedans) occasionally
insert an additional month, to bring the beginning of the
year to the same season. The additional month in the
Jewish Calendar immediately follows Adar, and is called Ve-
adar. This intercalation occurs seven times in nineteen years.

Adar may begin as early as the 1st of February, or as
late as the 3d of March: in 1833, it begins on the 20th of
February. In years of twelve months there are twenty-nine
days in Adar; in those of thirteen months, there are thirty
days in the month.

A fast is observed by some Jews in memory of the death
of Onkelus, on the second day of the month; another was
set apart in the time of Shammai, and the 16th, on the
13th day of the month, the fast of Esther is kept by the
whole Jewish nation. This fast is said to have been insti-
tuted in memory of the intended destruction of the Jews in
the time of the Persians. It is observed on the 14th or 15th
day, the fast of Esther is celebrated on the preceding Thursday; all other fasts (except the
Great Fast of Expiation, which is never postponed) are,
in similar cases, held on the Sunday following.

The Feast of Purim, which lasts two days, belongs to
the 14th and 15th of the month, in memory of the defeat of
the plans laid for destroying the Jews. This feast was cel-
brated in the modes and on the days appointed in the 9th
chapter of Esther, verses 15—21. It is made 'a day of glad-
ness and feasting,' and 'a day of rejoicing,' to all the con-
tinents one to another.' Two days were dedicated to this
festival, because the slaughter of the enemies of the Hebrews
ceased on those two days in the different provinces of the
empire.

In the years in which the month Ve-adar is inserted,
the Purim and the Fast of Esther belong to that month
and the 14th of Adar is called the First or Little Purim. It
appears, then, that in the intercalary year, it is the first
Adar that is really the intercalary month, as the festivals
return to Ve-adar. [See Idees, Lehrbuch der Chronologie,
Berlin, 1831.]

The festival in honour of the dedication of the second
Temple, is kept by some Jews on the 16th, and by others
on the 3d of this month. There is no exact account of the
day of dedication; the Temple was completed on the 23d
of the month. Ezra vi. 15.

ADAR is the name of the seventh month of the Syro-
Macedonian year, which coincides nearly with our March.

ADD, or El Adda, the Arabic name of a small species
of lizard, celebrated by the eastern physicians on account
of its pretended efficacy in the cure of elephantiasis, leprosy,
and other cutaneous diseases, to which the Arabs and inhab-
itants of Egypt are peculiarly subject; and of which, accord-
ing to the still prevalent superstition of the people, it is
said that they are free after they have eaten of a portion or
more of this lizard. We are not informed of the manner in
which these wonderful cures are effected; whether the living animal is applied externally, or toasts have been to cancers, even in
our own country, or taken inwardly in the form of a pow-
der; but its reputed virtues, in any case, have no better foundation than those formerly attri-
buted to the bezaros, rhinoceros-horns, and other animal
substances, which composed such an important part of the
pharmacopoeia of the Arabian school.

The adda, as described by Bruce, is about six inches and
a half in length; the body and tail are ciliard, the
latter thick at the base, and ending in a very sharp point:
the head is conical, and the mouth provided with two rows
of small feebles teeth; the face is covered with five black
lines, which cross one another like a net: the body is a
light straw colour, crossed with eight equi-distant bands of
black, and the scales are so finely polished, that they almost
appear as if they had been varnished. The adda is found
in Arabia, Egypt, and Nubia; it is particularly abundant
in the neighbourhood of the ancient Merœi (near the Nile
about N. Lat. 17'); and, in short, throughout every part
of the sandy deserts of Asia and Africa, wherever the
slightest traces of moisture exist. 'It burrows,' says
Bruce, 'in the sand, and performs the operation so quickly,
that it is out of sight in an instant, and appears rather
to have found a hole than to have made one: yet it often
comes out during the heat of the day to bask itself in
the sun; and, if not very much frightened, will take refuge
behind stones, or in the withered, ragged roots of the
ab-sinthium, dried in the sun to nearly its own colour.'

ADDA, the Roman Addua, a river of Lombardy, which
has its source in the Rhamian Alps above the town of
Bormio; it waters the Val telline in its whole length, then
enters the lake of Como, out of the south-eastern branch
of which it issues again below the town of Lecco; it then
crosses the plain of Lombardy, passing by Cassano, Lodis,
and Pizzighettone, and falls into the Po about eight miles
above the city of Cremona. It was by forcing the bridge
of Lodis over this river, that Bonaparte won a decisive victory
over the Austrians, 16th May, 1796. Again, on the 27th
April, 1799, the French, under Moreau, were totally defeated
at Cassano, on the banks of the Adda, by the Austrian
and Russian armies. Before the fall of Venice, the Adda formed
the boundary between the territory of that republic and the
Duchy of Milan. It is a rapid and wide stream, affording
a good military position, in advance of Milan on the east.

ADDAX, in zoology, a species of ruminating animal,
called by the ancients Strepsiceros, from the spiral or
twisted form of its horns. It was unknown to modern naturalists
till the recent journey of the German traveller Ruprecht,
who discovered it on the barren sands of Nubia and Kordofan,
where it still retains its ancient Arabic name of Addas or
Abou-Addas. For a more particular account of this inter-
resting animal, see Antelope.

ADDER, a name of the common viper. See Viper.

ADDITION, JOSEPH. This eminent writer was the
son of the Reverend Lanselot Addison, a clergyman of con-
siderable learning, who eventually obtained the desenery
of Litchfield, but was, at the time of the birth of his son, rector
of the parish of Milston, near Amesbury, in Wiltshire. Here
Addison was born on the 1st of May, 1672. After having
been put first to a school in Amesbury, taught by the Rev.
Mr. Nash, and then to that of the Rev. Mr. Taylor, at
Salisbury, he was sent to the Charter-House, at which semi-
inary he first became acquainted with his afterwards cele-
brated friend, Steele. From this school he went about
the age of fifteen to Queen's College, Oxford, and re-
moved to Magdalen College, upon obtaining a scholar-
ship two years afterwards. He is said already to have ob-
tained considerable facility in the writing of Latin verse;
and this talent, which he continued to cultivate and exercise,
first brought him into reputation at the university. Several
of his Latin poems, most of which were probably produced
before he had attained his twenty-sixth year, were afterwards
published in the second volume of the collection entitled,
Museum Anglicarum Amicula. The first composition

[Addax.]

ADDAY, A.D.D.
which he gave to the world in his native language was a
copy of verses addressed, in 1694, to Dryden, which pro-
cured him the acquaintance and patronage of that distin-
guished poet. He soon after published a translation in verse
of part of Virgil's Fourth Georgic; and he had also the
honour of writing the crime raging on the Georgics
predicted by Dryden to his translation, which appeared in
1697. But before this, Addison had made himself known
to one of the most enlightened and influential patrons of
literature in that day, the Lord Keeper Somers, by a poem
which he addressed to him, on the death of King William.
He was also introduced by Congreve to the
Chancellor of the Exchequer, Mr. Montague, afterwards
Lord Halifax. The advantageous connexions which he had
thus formed seem, together with other considerations, to
have induced him to abandon his course of going
into the church. In 1699 Lord Somers procured him a pen-
sion of 300l. a-year from the crown; and he then set out on
a tour to Italy. Here he remained till the death of King
William, in the spring of 1702, deprived him of his pension,
and also put an end to his expectation of being appointed
to a place near the person of Prince Eugene, then command-
ing the Imperial troops in Italy. Meanwhile he had ad-
dressed from that country his well known poetical Letter
to Lord Somers, in which he confessed his love for England
and Italy, and was translated into Italian by the Abbe Salvini, Greek professor at Florence.
Soon after his return home he also published his Travels,
which he dedicated to Lord Somers. His friends being out
of employment, he resolved to bring himself to a fit
person to execute the task. He was immediately ap-
plicated to; and the consequence was the production of his
poem, entitled The Campaign, which appeared before the
close of the year 1702. Godolphin, upon seeing what he had
more than done, was so much pleased with the per-
formance that he immediately made the author a Commiss-
ioner of Appeals. In the following year Addison accom-
panied Lord Halifax to Hanover; and in 1706 he became
undersecretary to Sir Charles Hedges, on the retirement of
the latter as Secretary of State. He continued to hold
the same place under the Earl of Sunderland, by whom Sir
Charles was in a few months succeeded. But although he
had thus fairly entered upon a political career, he did not
abandon his muse, his next work was his Dryden
opera, entitled Rosamond; and he also assisted his friend
Steele in his play of the Tender Husband, not only with a
prologue to the piece, but with several of its most effective
scenes. In 1707 an able anonymous pamphlet appeared,
under the signature of 'Steele', reprobating the author of
Intimations of a necessity of an Augmentation considered, which has since
been printed among Mr. Addison's works, and was no doubt
mention the production of his work. In 1709 he went over to Ireland
as step to the first number of the Fuller appeared on the 12th of March,
Wharton; the queen also bestowing upon him the office of
Keeper of the Records in that kingdom, with an increased
salary of 300l. He was in Ireland when the first number of
the Fuller appeared on the 12th of April (o.s.) in that year;
the happy day of Steele, whose connexion with the publica-
tions Addison is said to have detected from an observation on
Virgil which he had himself communicated to his friend.
The active part which he immediately took in the conduct of
this periodical work is well known. The change of ministry in
1710 confirmed this movement. Mr. Owl, and Steele, and
added to his return to England, enabled him to make his contribu-
tions still more frequent. In the course of this and the fol-
lowing year, he is also understood to have contributed several
papers to the political work, The Whig, which was started about this time in opposition to the famous Tory paper,
The Examiner, in which Swift exercised his powerful pen.
These papers, which are five in all, are printed among his
collected works. The Fuller terminated on the 2d of January,
1711, but the production of March, Addision, still more celebrated successor, the Spectator, which was con-
tinued till the 6th of December, 1712, and of which during the
whole of that time Addison was undoubtedly the chief
support. The Spectator was followed by the Guardian, of
which the first number was published on the 12th of March,
and the 175th and last, on the 1st of October, 1713; and in
this also his pen was actively employed. An anonymous
pamphlet directed against the commercial policy of the
ministry, and bearing the title of The late Trial and Con-
viction of Count Turf, which appeared this year, is likewise
believed to be Addison's, and has been printed among his
works. The same year he acquired still greater fame than
any of his former productions. He was brought before his cele-
brated tragedy of Cato, which was received with extra-
ceditiously applause, both on the stage and when it issued from the
press. It was played thirty-five nights in succession,—a run
which his popularity in the new stage never equalled; and this,
it political as well as to its poetic merits; and it was also
translated soon after into French, Italian, Latin, and
German.
On the 18th of June, 1714, appeared the first number of a continuation of the Spectator,
entitled, till its termination on the 26th of December in the same
year. His elegant poetical address to Sir Godfrey
Kneller on his picture of the king, also was published about
this time. And on the 23d December, 1715, soon after the
breaking out of the Rebellion, he commenced a periodical
publication in support of the government, under the title of
The Freeholder, which he continued without assistance at
the rate of two papers a-week, till the 29th of June, in the
following year. He had now indeed for some time been
again employed, and admired by the court of Queen Anne,
in August 1714, been appointed secretary by the Lords
Justices; and after the coming over of the new king, having again gone to Ireland as secretary to the
Lord Lieutenant, the Earl of Sunderland. The earl was soon
afterwards succeeded, and in 1716 he married the Dowager Countess of Warwick; and
in April the following year he was nominated one of his
majesty's principal secretaries of state. He soon, however,
found it necessary to resign this office on account of ill
health, but in reality, as his mediocrity had long
been generally understood, in consequence of his entire in-
aptitude both for debate in parliament and for the ordinary
business of his office. It is related that his fastidiousness in
taste made it difficult to compromises him in the
preparation of an urgent dispatch, that he was obliged
to resign the task to one of the clerks, in order that it might be
expedited in time. His health, however, had also been
for some time impaired by attacks of asthma,—the effects of
which were soon to bring him to a fall from a habit of
over indulgence in wine, to which he had long been
addicted, but to which after his marriage he gave himself up
more than ever, seeking refuge in its baneful excitement
from domestic unhappiness. He left office in March 1718.
His last days were full of hope, joy, and expectation, till the
news of the Restoration, since which he had brought about his restoration; and for some time the
expected event seemed to follow. In the course of the
year 1719 he was so far recovered as to be able to engage in a
somewhat acrimonious controversy with his old friend Steele
and in the following year, the author of Character of the
present Steele, then under discussion in parliament, which Steele had
attacked in a paper called the Plebeian. Addison's defence of
the measure appeared in two successive anonymous pamph-
llets entitled a Discourse on Analytical Modern Letters, and at the same time
printed among his collected works; but are undoubtedly his.
He again, however, fell ill, and after lingering for some time,
at last expired at Holland House, Kensington, on the 17th
of June, 1719, when just commencing his forty-eighth year.
He left a daughter by his connection with Warwick.

Soon after Addison's death, his works were collected and
published in four volumes quarto, by his friend Mr. Tickell,
on whom he had expressly devoted that duty. Besides
the compositions already mentioned, and some translations
noted in the portrait of Addison, the works of both
Richard Steele and his apologist, give a sufficient treatise on ancient medals in the form of dialogues, which is
understood to have been prepared by the author many years
before his death; and a portion of a work which he had
composed in opposition to the Christian religion, long that
which was customarily known by the title of Evidences of
Christianity, the comedy of the Drummer, or the Haunted House, which had
been published anonymously in his lifetime, with a preface
by Sir Richard Steele, was also soon after reprinted by Sir
Richard, and dedicated to his late apologist. These
appearances have likewise been since attributed to him on some-
what insufficient evidence; the first, a dissertation in Latin
on the most eminent Roman poets, which appeared, with
an English translation, in 4to. in 1718; and the other a
tract entitled a Discourse on Analytical Modern Letters, which was printed with his name in 1739, having been found-

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it was affirmed, among the manuscripts of Lord Somers. This enumeration comprehends all his published productions. Among the literary schemes which he is said to have formed, but did not live to execute, were a tragedy on the death of Socrates, an English Drama, the plan of that of an Italian language by the Academy della Crusca, and a tractal translation or paraphrase of the Psalms. It does not appear that any of these undertakings had been even begun. 

In conclusion, however, has been charged with having been the author of a poetical translation of the first book of the 

Iliad, which was published in 1715 by Mr. Tickell, then his private secretary; and by which it has been said he intened to aim a covert blow at the popularity and success of Pope's first volume of which it was then just issued from the press. The question of Addison's concern in this affair is of more interest in reference to his moral, than to his literary character. A story has been engraven upon the circumstance to the name of Pope, with whom he had been for some years in habits of intimacy and professed friendship, was so stung by what he conceived to be the duplicity and baseness of his conduct on this occasion, that he immediately broke off their intercourse; and never would be again reconciled to him. The celebrated character of Atticus, now inserted in the Epistle to Dr. Arbuthnot, is said to have been composed by Pope after this, and sent by him to his former friend. The clearest examination which this story has received will be found in a long and able article by Dr. Kippis's edition of Dr. Johnson's 

graphia Britannica, (vol. i. p. 86, &c.) which is known to have been contributed by Sir William Blackstone. The learned judge has undoubtedly sufficiently refuted many points in the common statement; but still it is certain that a minute and printed dispute between Addison and Pope long after the appearance of Tickell's book, and there is also reason to believe that their separation was not connected with that somewhat injudicious and ill-timed publication. As for the authorship of the translation, however, it was probably Tickell's own.

The literary greatness of Addison in the estimation of his contemporaries probably stood upon somewhat different grounds from those upon which it is now usually placed. In his own day he was looked upon as a dramatist and a poet, and appears to have been not so much admired for anything else as for being the author of 

Cato. That stately but frigid tragedy has long ceased to give the same pleasure, by its sonorous declamation and well-expressed abstract ideas, under which it seems to have afforded to future authors. The taste which then prevailed in England was the most artificial which has distinguished any age of English literature. The quality which chiefly drew admiration was a cold and monotonous polish—the warmth of genuine feeling and the record of real passion were so perfectly excluded. The return of the public mind to truer principles of judgment in such matters has been fatal both to the dramatic and to the poetical fame generally of Addison; and although his verses are still read with pleasure as the productions of an elegant and accomplished mind, we are not yet to possess any high degree of that power which we now look for in poetry. His glory is now that of one of our greatest writers in prose. Here, with his delicate sense of propriety, his lively fancy, and above all, his most original and exquisite humour, he was in his proper walk. He was the founder of a new school of popular writing; in which, like most other founders of schools, he is still unsurpassed by any who have attempted to imitate him. His 

Religious Speculations, and 

Guardian, give the first examples of a style so well-adapted to the best qualities of a vehicle of general amusement and instruction; easy and familiar without coarseness, animated without extravagance, polished without unnatural labour, and from its flexibility adapted to all the varieties of style and the serious. 

ADDITION, from the Latin add to give to, is the putting together of two or more magnitudes into one. In Arithmetic and Algebra it also signifies the most convenient method of doing this, so that the sum or collection of added quantities may be obtained or reckoned in the same manner as the parts of which it was composed. The sign of this operation is +, which is generally pronounced plus, the Latin for more. Thus a+b directs us to add the number denoted by b to that denoted by a, and represents the sum of a and b. 

Addition of whole numbers in arithmetic is performed partly by memory, partly by the aid of the decimal system of numeration. [See NUMERATION.] The sum of every two numbers, each of which is not greater than 9, must be remembered; from whence the addition of such numbers as 9, 9; or 6, 9, can be performed in the head. The further process is the same in principle, whether the several quantities to be added together be tens, hundreds, &c, pence, shillings, &c, or any other denomination. Presuming that no reader will be ignorant of the ordinary rules of schools, we will show the general principle for all cases in the following question, in which any line of headings may be taken—

<table>
<thead>
<tr>
<th>Hundreds</th>
<th>Tens</th>
<th>Shillings</th>
<th>Pence</th>
<th>Pence</th>
<th>Farthings</th>
<th>Yards</th>
<th>Feet</th>
<th>Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
</tbody>
</table>

Add together d, h, and n, and if they be units, convert the sum into tens and units; if farthings, into pence and farthings, &c., meaning thereby, take the greatest number of tens out of all the units, of pence out of all the farthings, &c., in n−h+d, and write what is left under n. Carry (as it is called) the tens, pence, &c., to the next column on the left; and add successively m, g, and c to them, taking out the hundreds, shillings, &c., as the case may be, from the result, and writing the remainder only under m. Carry the hundreds, &c., to the next line on the left, and so on. 

The addition of fractions is, in principle, as follows. We cannot immediately express the sum of one-half of a foot and one-third of a foot of any magnitude by writing 1/2+1/3 of a foot. But if we recollect that one-half is three-sixths, and one-third is two-sixths, it is evident that the sum of one-half and one-third is five-sixths. The rule, therefore, is to reduce the various fractions to equal denominators (see DENOMINATOR), add the numerators, retaining the denominator: or, multiply every numerator by every denominator, except its own; add the results, which gives the numerator of the sum: multiply all the denominators together for the denominator of the sum. Thus, for—

\[
\frac{1}{2} + \frac{2}{3} = \frac{1\times3 + 2\times2}{2\times3} = \frac{4}{6} = \frac{2}{3}
\]

To add decimal fractions, arrange them so that the decimal points shall fall under one another, proceed as in common addition, and let the decimal point in the sum total be placed under the other decimal point:—

\[
\text{Add } 2.01 + 1.04 + 0.11, \text{ or } 3.16 \text{ to } 0.28 = 3.44
\]

To add algebraical quantities, write them all one after another, without changing any sign, and connect the terms, which before had no sign, with the rest, by the sign +. Thus a+b and a−2b added, give a+b+a−2b. This is the sum, which may be reduced to a simpler form, by observing that b subtracted twice and added once, is equivalent to b subtracted once, and that a is added to a. The expression then becomes 2a−b.

When the quantities are fractional, the preceding rule follows the application of another similar to the rule in fractional arithmetic. Thus, for

\[
a + b = \frac{a^2 + b^2}{2} + \sqrt{\frac{a^2 + b^2}{2}}
\]

or

\[
\frac{a^2 + b^2}{2} + \sqrt{\frac{a^2 + b^2}{2}}
\]

as numerator.

For further information, see Library of Useful Knowledge, Algebra, pp. 4, 23; Study of Mathematics, pp. 15, 22.

ADDITION of RATIO. A phrase which may, perhaps, at first, puzzle the mathematical student who reads old books, and which we therefore explain here. Take two ratios or proportions, say 3 to 7 and 5 to 9; the ratio of 3×5 to 7×9, or of 15 to 63 was formerly said to be the sum of the ratios of 3 to 7 and 5 to 9. Similarly the ratio of
ADE

ADE

25 to 4 was said to be double of the ratio, or the duplicate ratio, of 5 to 2; that of 125 to 8, triple, or the triplicate ratio, and so on. [See Ratio, Logarithm.] The sum of the first seven terms of any geometric progression would probably mean $4 + 3$; but the term 'sum of the fractions, would most likely be used in preference.

ADEL, the name of a portion of eastern Africa, which it is not possible to describe with much precision. The name of the provinces given the African coast which runs from the straits of Bab-el Mandeb, the entrance of the Red Sea, to the Bay and town of Zedia; and the name of Adel, or the land of the Somalis, is extended far as Cape Guardafui. The chief place of the Somalis is the harbor of Aden, about 1739 from Aden and from Mocha, between October and April, to purchase guns, myrhh, frankincense, slaves, camels, horses, mules and asses, for which they give in exchange Indian wares. The inhabitants of the island, which is a perilous one either by land or sea, have a partial custom of adorning their persons with ivory and gold dust; and this is now the only channel of communication between the interior of the central and southern Africa and the S.W. coast of Arabia. The Somalis, sometimes called Barbeirs, have, according to some authors, the Arabes descent, but, according to Adelung, woolly hair and a very black-skin, though they are not negroes. They possess ships of their own, and are active and enterprising merchants; some of them have settled at Mocha in Arabia. Zedia is in N. lat. 11° 18', E. long. 47° 3'; and the coast is one of the best points from which a traveler from Aden can set out to explore the southern boundaries of the Abyssinian provinces, and the upper waters of the Bahr el Ahmid; the caravan communications already existing through Hurur, which borders on the territory of Zedia, and running westward to the exposed sources of the Eritrean, shows an attempt to penetrate into the interior probably not very hazardous. The hordes of the coast of Adel are said to be very large, and probably the animal may be akin to the Gafan exquis, which Salt saw in Abyssinia, and which are brought from the southern interior. The fertile soil of this country, and the hair is rough like bristles.—[Valentia—Salt—Malte-Brun.]

ADELUNG, JOHANN CHRISTOPH, the well-known grammarian and jurist, was born at Sprossenthon, a village near Auklum in Pomerania, on the 8th of August, 1732. He received his first education at the town-school of Auklum, and at Kloster-Berze, near Magdeburg; and afterwards visited the university of Halle. In 1759 he was appointed a professor in the evangelical seminary at Erfurt: but he held this situation only till 1761, when, in consequence of a dispute with the Catholic town-magistrates about a point of difference in religion, he found himself under the necessity of leaving Erfurt. Adelung now turned his whole attention to the language and literature of the ancient and modern Ger- manic and German language. (Grammatisch-kritisches Wörterbuch der Hochdeutschen Mundart.) The plan of this work had already been projected by Gotsche, whom death prevented from carrying it out (1766), and who left but unexecuted materials for its execution. Adelung now turned his whole attention to the language of his native country, and several valuable works (Deutsche Sprachlehre für Schulen, Berlin, 1781, s. v., Grundzüge der deutschen Sprachlehre, 1772-82, 2 vols.); were the result of the profound study which he gave to this subject. In 1787 Adelung was called to Dresden and appointed principal librarian to the electoral library there. The important documents for Saxony history and antiquities which were now under the care, attracted his attention, and induced him to publish several works of deep research on the history and ancient institutions of the state which he served. Soon, however, his old predilection for philological and linguistic inquiries returned, and he formed the plan of his Adels-Constitution, a work which he intended should contain a succinct historical account of all the known languages of the earth, with a translation of the Lord's Prayer, given as a specimen of as many as could be procured. Death prevented him from carrying this vast project into execution. Adelung died on the 16th of September, 1800, only a few months after the first volume of his Adels-Constitution was seen at Hamburg, is giving an account of the Asiatic languages, had appeared. The plan of the work was afterwards taken up by Johann Severin Vater, who completed the whole in four volumes.—[See the article 'Adelung' by Eberle, in Ersch und Gruber's Enzyklopädie, vol. 296.]

ADEN, a town of Yemen, one of the great divisions of Arabia, on the coast of the Indian Ocean, and nearly due east of the entrance of the Red Sea. N. lat. 12° 40', E. long. 50° 4'. It is a small town situated on the east side of a small peninsula, or rather island, which is separated from the S.W. coast of that part of the African continent terminating in Cape Guardafui, by the Gulf of Aden, a strait called the gulf of Aden. This town has declined from its ancient importance, but is still the chief mart for the gums brought from Africa by the Somalis, and is also noted for good coffee. Salt (p. 100) describes the place as a wretched heap, two surfs of lead are placed together, a searching climate and inhabited by an unhealthy looking race of Arabs; the lower classes are very deprived in their morals. On the north and west sides of the town there is a very steep mountain, on the highest pinnacle of which still stand some old walls, of the ancient settlement of the Adel or Aden. This condition of this place is shown by the large and deep coves excavated in the rock, lined with stucco, on the N.W. side of the town, to which the water was brought from a ravine in the mountain by a broad aqueduct that may have been the work of the Phoenicians. The southern side of the mountain, and backed by some large masses of granite. Salt has given, in his 'Voyage to Abyssinia,' a small sketch of Aden, taken from outside the harbour, and also a map of 'Aden Back Bay.'

ADHESION. This term has generally been employed to denote the property by which two solids, a solid and a fluid, two solids and an interposed fluid, or two fluids, remain attached to each other when their surfaces are brought into contact. Adhesion, in some instances, may be considered as little if at all different from cohesion, depending upon the same cause, while, in other cases, it appears to be connected with, and probably to a considerable extent derived from, chemical affinity: when, for example, two solids are placed together, the adhesion resembles mere cohesion, it acts at an incalculable distance, and with a force that is independent of the difference of the solids, and of the power, and no change of properties ensues in the metal. If, however, the surface of a piece of lead is put into contact with mercury, the two metals set upon and combine with a new substance, all the effect of this adhesion is thus dependent upon the surface of the metal, and it is certain that it does not depend upon chemical affinity, as when a plate of glass adheres to the surface of mercury, or lips, which is object to their experiments, and action, by M. Dutour in the Journal de Physique, that they have not observed any adhesion between the solid and the liquid, but cohesion...
between the two portions of the liquid which have been separated. If this objection be valid, then those only can be considered as proper cases of adhesion, in which no particle of one substance remains with the other after the separation of their surfaces, as when glass is separated from mercury; M. Dutour found that a disc of glass 11 lines (French) in diameter adhered to mercury with a force of 194 grains.

M. Guyton published in 1777 in his *Elemens de Chymie*, a series of experiments on the force of adhesion between eleven metals and mercury; his method was as follows:— the metals were perfectly pure, circular, and one inch in diameter; they were all the same thickness and suspended from a ring in the centre at the arm of an assay-balance and counterpoised; the plates were then applied to the surface of the mercury, which was changed in each experiment, and the weights required to detach them were as follows:—

<table>
<thead>
<tr>
<th>Metal</th>
<th>Grains</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gold</td>
<td>446</td>
</tr>
<tr>
<td>Silver</td>
<td>429</td>
</tr>
<tr>
<td>Tin</td>
<td>418</td>
</tr>
<tr>
<td>Lead</td>
<td>397</td>
</tr>
<tr>
<td>Bismuth</td>
<td>372</td>
</tr>
<tr>
<td>Platinum</td>
<td>282</td>
</tr>
</tbody>
</table>

In these experiments the phenomena of adhesion appear to depend upon the degree of chemical affinity existing between the two metals applied to its surface. If the affinity be weak, the two surfaces will separate by the application of a slight force. Indeed, M. Guyton himself considers that the weight required to separate the different metals from mercury may directly express their affinity for it. The following table contains a moment's consideration that the degree of adhesion is perfectly independent of the densities of the different metals.

The sixty-third volume of the *Philosophical Magazine* contains a paper by Dr. Heaviside in which the subject of adhesion is considered in a point of view which had previously excited but little attention, viz., the real force of adhesion of different nails when driven into wood of different species; the weight, without impulse, necessary to force a nail a given depth into wood, and the force required to extract the same when so driven. The term adhesion in this case is applied to the force, whether arising from friction, or cohesion, or partly from both, with which wood

extractions of air in it when in a soft state, but is produced by the adhesion of certain elementary bodies called Cellular Tissue, Fibrous Tissue, and Vasculare Tissue (see Elementary Organs), arranged in a definite manner, which varies with species; neither is a leaf, or a fruit, or a flower a mere mass of pulp, or an expansion, like the horn of an animal, but also consists of these same elementary organs in a state of adhesion. To gardener, it has been long known that the property of adhesion between contiguous parts exists to a certain degree; for the operation of grafting or budding a portion of one plant upon another is dependent upon it. They also know that if two cucumbers, or two apples, or even two hard branches be artificially placed in contact when in a growing state, they will adhere, so as to become what may be called vegetable twins; and that the same phenomenon sometimes occurs constantly in certain cultivated plants, of which an instance is furnished by the cluster golden pippin apple, whose fruit is usually twin.

Guided by these well-known facts, modern botanists have discovered that the property of adhesion explains the true nature of every organ that plants bear, and that there is none so anomalous which cannot be shown to owe its appearance in a great measure to the union of contiguous parts. As it is very important that this should be clearly understood by all who make Botany their study, we shall proceed to give several illustrations of it.

Some leaves are said to be perfoliate, when they seem as if they pierced through the leaf, as in Bupleurum rotundifolium (fig. b), but the latter differ from the former only in this, that in the first the lobes at the base of the leaf embrace the stem without adhering, while in the second they not only clasp the stem but grow together where their margins come in contact. Some leaves are hollow, as in the pitcher plant, and these were formerly thought to be special organs with which no analogy could be discovered; they are now known to be leaves which have rolled up so that their opposite margins come in contact and adhere. Other leaves, growing from opposite sides of a stem, adhere in consequence of their basing becoming pressed (fig. d), as in the honey-sockle; and finally there are others, many of which grow, in what botanists call a whorl, that is to say, all round a stem upon the same plane and adhere by their margins into a sheath.
in the ranunculus; but they also often adhere by their edges, into a sort of cup, as in the chery. Botanists used to consider the former as composed of many leaves, and the latter as composed of but one leaf, but at the edge into a certain number of lobes. In the corolla the petals are either all separate, as in the rose, or they adhere by their edges into a cup or bell, as in the different heaths, Campanula, and the like: while the first was called many-petaled, the second were called one-petaled, it being thought, as in the case of the calyx, that it was a single petal of a special kind, cut into lobes at the margin.

Similar adhesions take place between the stamens. In the rose they are all distinct from each other; in the geranium they slightly adhere at the base (fig. e); in the mimicum (fig. f) there is an upper extensity, where they are not united, and have their ordinary appearance; in other plants they grow together into a solid tube in which no trace of separation can be discovered, as in the genus Guarea (fig. g).

Finally, in the pistillum there are certain parts called carpella, each of which is a hollow body terminated by a style and stigma. These carpella are hollow, because they are formed of a flat organ doubled up so that its edges come in contact with the tube, except that one carpellum is present in a flower, as in the cherry (fig. h); sometimes several, as in the rose (fig. i). The adhesions in the latter case cause many of the differences we observe in the structure of fruits: for instance, an apple is composed of five carpells, adhering to each other and to the receptacle, which is composed of many such carpella, each of its lobes being one. In the niggia, the styles of the carpella are all distinct (fig. k), but in the lily and the myrtle (fig. l), the styles of the carpella adhere so completely that there seems to be only one style. In the apple, the thick, hard top of the fruit; this is caused by the carpella having at a very early period adhered to the inside of the calyx, which afterwards grows with their growth, and, finally, leaves its extremities in a withered state near the top of the carpella; in the lily, on the contrary, there is no place between the carpellum and the calyx; and, consequently, when the fruit is ripe, there is no trace of the latter up to its upper end. In the raspberry, the fruit is enabled to remain stuck to the surface from which it was removed, because the carpella all adhere by their sides.

For further information upon this subject consult Des Cambolles Théorème Élémentaire de la Botanique, 2d edition, Lindley's Introduction to Botany, and De Cambolles Organographie Végétale, &c.

ADIANUM, a genus of derviscous ferns, so called by the Greeks, because the leaves are of such a nature that water will not readily moisten them. The plant described by Hippocrates and his successors for several centuries as having to have been the A. Capillus Veneris, or the maiden hair fern—a rare European species, occasionally met with on moist rocks, and old damp walls, even in this country. From other genera of the same tribe it is known by its size, or masses of reproductive particles, being situated upon the margin of the leaves, and carried over by a thin curved scale which separates from the leaf by its inner edge.

The number of species is very considerable, probably not far from 80 or 90, and, as in the case in all extensive genera of ferns, comprehend every degree of division of the leaves, from perfect simplicity to what botanists call super-decomposition. All those in which the leaves are much divided, are remarkable for the very delicate chaff-like stalks on which they are borne; the latter is of great importance to the botanist that the name of maiden-hair has been given to the European species. The genus is scattered over all the world from Europe to New Zealand, but is not found in any high latitudes in either hemisphere; by far the greatest part of that which has hitherto been observed belongs to the

A. Capillus Veneris, is a dark green stemless plant, found in damp, sharp, rocky places, by the side of water-courses, and on the edge of wells, where the air is keen and dry. Its leaves, which are from six to fifteen inches high, have a blackish-purple, highly-polished stalk, divided into a great number of very slender ramifications, from the extremities of which proceed the thin, delicate, wedge-shaped leaflets, which are notched irregularly upon their upper edges, and are most gracefully unequal in size when growing a little above the eye, and greatly agitated by the wind. Wonderful medicinal properties were once ascribed to this species, but they have long since been discredited, having no existence except in the exaggeration of fanciful practitioners. All that can be discovered in it is a slightly pleasant aromatic flavour; the French occasionally use it in some of the more agreeable ices. Capillus Veneris is prepared by pouring boiling syrup upon the leaves of this species, or of A. peltatum, an American plant of larger growth and far less divided leaves; a little flavour is afterwards given with orange-flower.

ADIGE, the Athene of the Romans, called by the Germans Etsch, is a considerable river of North Italy, which has its source in the Alps of Tyrol above Brixen; it enters Italy by Bolzano and the valley of Trento, flows in a southern direction by recovering the waters of the many small lakes from the lake of Gardea, then turns southward towards the east, passes through Verona and Legnana; a Jovian enters the great Delta between the Brenta and the Po, and forming several branches, empties its waters into the Adriatic Sea below Venice, and joins the Po. Sea S. Below Verona and Legnana, its general course may be considered as parallel to that of the Po. It is a deep and rapid stream, dividing by its course the old Venetian territories from Lombardy proper. On its banks many a battle has been fought for the possession of Northern Italy. [—No Arcola.]

ADIPOCIRE. A substance so named from adipe fr., and cera wax, because it possesses the properties partly of fat and partly of wax; it is a body of a peculiar nature, being capable of a species of plasticity. It is not chimerical, but has much resemblance to spermaceti. This name was given by M. Fourrey in 1786, to the substance in question, which he discovered on examining a piece of human liver that had remained for ten years exposed to the air in the laboratory of the Jardin du Roi. Pontoppidan, who was the first to grow fatty, to the opportunity of observing an accumulation of adipocere as a rule of prodigious extent, under circumstances of a peculiar nature, which are highly curious. There was in Paris an immense burial-ground, called la Caille, which was ploughed up, and a great deal of the dead for a considerable part of the population of Paris for several centuries. On account of some improvements in the neighbourhood it was determined to remove this cemetery. The number of human remains in this place had amounted to many thousands annually. The bodies were deposited in pits or trenches at thirty feet deep; each pit was capable of holding from nine to fifteen thousand bodies; and as the pits became full they were covered with a few feet of earth. The extent of the whole area was about seven thousand square yards, and the space became at last occupied by a mass which consisted almost entirely of animal matter, rising several feet above the natural level of the soil. Scientific men were speculatively charged by the government to direct the precautions requisite to protect this accumulation from the immense mass of putting away animal matter; among whom were Fourrey and Thouret, the latter of whom has given a most interesting account of the circumstances attending the opening of the ground, and the former an analysis of the new and singular object that presented itself for investigation. The most remarkable change was found in the bodies that had been heaped together in the trenches. The first of these trenches opened in the presence of Fourrey, had been closed for fifteen years. The coffins were in very good preservation; the covers being removed, the bodies were observed at the bottom, leaving a considerable distance between their surface and the cover, and flattened, as if they had suffered a strong compression; the linen which covered them was spread out, and the bones of the soft dust matter of a grey-white colour, resembling common white cheese, the resemblance being more striking from the print which the threads of the linen, that held many shallow daubed tombs surrounding by this matter, had no solidity, but were readily broken by sudden pressure. The head was enveloped with this peculiar matter; the face was no longer distinguishable; the mouth was disorganized; no trace remained of the visera of the thorax and abdomen, which were once confounded together, and converted into this fatty matter; and this was also invariably the case with the brain. None of this matter was found in bodies isolated from each other, but only in those intermixed graves. From these observations it was found that this fatty matter was capable of enduring in these burying-places for thirty or forty
ADIPOSE SUBSTANCE, adeps, fat. ADIPOSE TISSUE, Tela adiposa, Latin; Tissu g-aissieux, Fr.

Adipose substance, or fat, is an animal oil, which resembles, in its essential properties, the vegetable oils. It is wholly inorganic, though containing a small quantity of carbon and hydrogen; it is not fusible, and behaves in the same way at temperatures at which it becomes solid. In general, it forms a firm solid, constituting suit, which, when divested of the membrane in which it is contained, is called tallow; but there are animals in which, at an ordinary temperature of the atmosphere, it always remains fluid, as in the cetaceae. At the temperature of the human body, it is fluid. It is therefore conceivable, that during life it must exist in a fluid or semi-fluid state; though, when observed in the living body, it is mainly contained in the intercellular and cellular membranes, whether in the human subject or in animals, it appears as a soft, yielding, compressible substance, with a slight degree of translucence. There is reason, however, to conclude that this degree of firmness, as well as the proportion of fluids to the walls of the adipose tissue, is wholly derived from the organized membrane in which it is contained.

Human fat, when separated from the tissue in which it is deposited, is of a whitish-yellow colour, and the colouring matter, being soluble in water, is capable of being removed by washing. It is white and transparent in proportion to the youthfulness of the subject, the yellow colour increasing with age. When purified, it is perfectly white, inodorous, and of a mild, insipid taste. It is lighter than water, and burns readily in air and light it becomes rancid, and gives off a volatile acid, which has a strong odour. It is one of the few animal substances which does not contain azote; its ultimate elements are carbon, hydro- gen, and oxygen. Bécard has succeeded in producing, artificially, a substance very analogous to animal fat. On mixing together of a measure of carbonic acid, ten measures of carburet of hydrogen, and twenty of hydro- gen, and transmitting the mixture through a red-hot tube, several white crystals were obtained, which were insoluble in water, soluble in alcohol, and fusible by heat into an oily fluid.

Until recently, adipose tissue was conceived to be a simple principle, constituting one of the elements of the animal organization; but M. Chevreul, who has examined this substance with extraordinary diligence, has demonstrated that it is not a simple principle, but consists of two substances which are capable of being separated from each other, and obtained in a distinct form. Of these substances, one, at the ordinary temperature of the atmosphere, is solid; the other fluid. To the solid substance be gives the name of stearine, from stear, fat or suet, and to the fluid substance elaine, from elas, oil. Stearine, the solid portion of fat, is a substance colourless, tasteless, nearly inodorous, soluble in alcohol, separable from this solution in the form of small, silky needles, and preserving its solidity at a temperature of 60° Fahrenheit. Elaine, the oily principle of fat, is fluid at the temperature of 65° Fahrenheit; it is of a yellow colour, without odour, lighter than water, its specific gravity being 0.913, and easily soluble in alcohol. One part of stearine dissolved in the fluidity, or the melting point of the fat of different animals shows the proportions in which these two substances are combined; in the more solid the stearine, in the less consistent the Elaine, being in excess.

The chemical processes by which these substances are obtained are simple. Adeps, tallow, or fixed oil, is dissolvable in very pure, hot alcohol; the stearine separates from the solution by crystallization, assuming the form, as it has been already stated, of fine silky needles, while the Elaine, on evaporating, is a still simpler process. Fixed oil is congealed by a low temperature; the mass is then pressed between folds of bullous paper; the Elaine soaks into the bullous paper, and the stearine remains in a separate form; when the bullous paper is pressed, under the united mass escapes is pure Elaine. The changes that take place when the constituent principles of fat combine with an alkali, as potash, will be explained in the article SOAP.

Animal fat is contained in a distinct membrane, termed its adipose tissue. The adipose formed of the Cellular Tissue, but the arrangement of the fibres is widely different in the former and the latter. The fibres of the adipose tissue are larger and tougher than those of the cellular, and form a much more complicated network.

According to the most eminent anatomists, the structure of the adipose tissue consists of rounded packets, separated from each other by furrows; each packet is composed of small spherical particles; each particle is again divisible into smaller grains, each of which surrounds the cavity of a vesicle, or minute bags or sacs, and it is in these bags that the fat is contained. The knife of the anatomist cannot indeed demonstrate the membranous walls of these adipose vesicles; but, though too fine and delicate to be distinguished by the eye, there is reason to conclude that the adipose tissue forms sacs which are completely closed, and that it is so arranged as to render each vesicle a distinct bag, having no communication whatever with any other vesicle. For, if a portion of the adipose tissue, recently taken from the living body, be placed between two glass plates, or in a glass vessel, and heated above the temperature of the body, it is found that there is not sufficient to melt the fat, not a drop of oil will escape, provided the temperature of the water be not sufficient to injure the membrane; but if incisions be made through the tissue, the oil instantly begins to issue from the point, and the vesicles are divided, and that consequently the oil flows out. Again, though fat be fluid at the temperature of the human body, yet the adipose masses preserve a constant and definite form, which could not be preserved unless they were isolated from the fluids of the body close and resisting to maintain that form. Lastly, in however large a quantity the fat may be accumulated in any part of the body, it cannot by any degree of pressure be made to pass from one part to another; while the fat of the subcutaneous membrane, which consists of the cells of the body, the other, is one of the most striking characters of that tissue. Neither in the fullest definition of the cellular
tissue with fluid does a single particle ever penetrate the adipose vessels; they never contain anything but their own proper substance.

There is reason to believe that the fat is immediately formed out of the blood, without any glandular apparatus for secreting it, by the capillary arteries of the adipose vessels. In the furrow between each packet is placed the branch of an artery and vein. These vessels divide and subdivide to an extreme degree of minuteness, penetrating and forming vessels of the same minute substance as the vessels of the parent diminution. By occasional flowings of blood they form themselves into a network, and they are aided by the puckering of the vessels of the capillary system of the certain subordinate capillaries, as it is said to take place in the course of a few hours. Bichat states that during a fog of twenty-four hours continuance, thrushes, wheat-ears, ortolans, and red-brasses, have sometimes taken so fast that they are unable to fly from the sportsman.

A certain quantity of fat is a sign and an effect of health; an excessive accumulation of it is a sign and a cause of disease. The quantity actually generated is subject to a great variety of circumstances. 1. By age. At the two extremes of human life the quantity is always small. Before birth, it is less than at any other period. During the first half of fetal existence, there is no appearance of it whatever. About the fifth month it begins to increase in isolated grains under the skin. At the period of birth, it is sometimes accumulated in considerable quantity; but even then, it is in distinct masses in no part of the body excepting beneath the skin; in the internal organs, and in every scattered portion. 2. By season, the quantity acquires a different character, and sometimes undergoes a variation in isolated grains. As the period of maturity passes into that of declining age, it is sometimes very abundant; but as old age advances, the quantity invariably diminishes; and in extreme old age it is very minute: this is one of the chief distinguishing marks of the health or disease of the body. 3. By sex. The quantity of fat in the human body is generally greater in females than in males; and this habit is often hereditary, being received from the parent and transmitted to the offspring for many successive generations. 4. By diet. Nutritious and abundant diet, consisting of well-cooked food and malt proportioned in its formation in large quantities; while high seasoned, spiced, or acid aliments, together with the immoderate use of spirituous liquors, check its production. 5. By the condition of the function of assimilation. If the power of assimilation in the digestive system (which is, the power of converting chyle into blood) is diminished, while the appetite remains unimpaired, a large quantity of chyle is flowing in the circulating stream which cannot be transformed into proper nutriment: this unassimilated, and therefore useless and unorganic, is deposited in the adipose tissue, in the form of fat, and in this manner the circulation is relieved of its load. An excessive accumulation of fat in persons otherwise in sound health should therefore always excite attention; it is often the sign of some internal disease. 6. By the state of the secretions and excretions. Suppression of the ordinary secretions and excretions leads, in a way which can now be readily understood, to a preternatural increase of the discharges of the mucous surfaces, especially from those of the lungs and intestines, will prevent the deposition, and even the conversion of the nutritive chyle, into fat-like substance.

Walking, running, riding, whatever species of exertion promotes the secretions and excretions, prevents the deposition of fat, as is exemplified in boxes, jockeys, and all who go through a regular system of training, of which vigorous
exercise always forms a part. 8. Long-continued and intense mental exercise. Persons whose minds are acute, active, and vigorous, are seldom fat. There is no more certain way of growing thin than by the hard and continuous mental labour. Among the conditions observable in all the remarkable instances on record of persons who have changed rapidly from a state of enormous obesity to a state of moderate thinness, vigorous mental exertion is one. Persons oppressed with an accumulation of fat, and accustomed to lead an indolent and luxurious life, when placed under circumstances which require great mental exertion, are invariably found to lose many pounds of their weight, in a short time, and to lose, after a change in their general habits, the bulk of the adipose substance. 9. But the accumulation of fat is influenced still more by the character than by the mere activity of the mental state. Cheerfulness and serenity of mind are highly conducive to the deposition of fat, while the anxiety of mind not only suspends all further deposition, but causes an active absorption of it. The immediate cause of a sudden change from fatness to leanness is the absorption of the adipose substance. Thinness, too, is usually and justly considered a symptom of the process, but the long-continued abstinence, tend to diminish the quantity of fat.

Sometimes the accumulation of fat is enormous. The average weight of the human body, when well nourished, and of a medium size, is about 160 pounds, or between eleven and twelve stones. An additional syllable being prefixed to the weight, of its attaining, by the deposition of fat, the weight of from thirty-five to forty stone. Dr. Cheyne mentions a case in which the weight was 448 pounds, equal to thirty-two stone.

In the Philosophical Transactions are recorded two cases of which the weight was above 500 pounds, and in the other 590 pounds. The Breslau Collections contain two other cases, in one of which the weight was 580, and in the other 600 pounds. The inconveniences produced in the system by these enormous accumulations of fat, and the means to be adopted for preventing and removing them (for they can be prevented, and even removed, with absolute certainty, provided the health be in other respects sound), will be treated of under the term OBESITY.

A D J

ADJECTIVE, in Grammar, the name of one of the parts of speech; or one of those great classes into which, for the sake of convenience, grammarians have distributed the words of a language. The term adjective, which is of Latin form, from ad, to, andjectives, the giving of, describes the nature of any object of which we are speaking. An adjective, in our language, is most commonly prefixed to the name of some thing, in order to mark some quality by which it is distinguished from other things belonging to the same class; thus, a bad man, a good man, a fat man, and a frightened man. Here the terms man and horse are the most general or abstract (see ABSTRACTION) terms by which we can express the idea of man or horse; but, by prefixing to them such adjectives as fat, good, or frightened, we characterize a part of which we are speaking. Thus, when we speak of a white man, we exclude the consideration of black men, or men of any other colour. In like manner, when we say an English man, we limit the signification still further; and in this way we may descend to a Cheshire man, a Chester man, until we come to the particular, and by a common name, such as Thomson, Smith, &c. By the aid of other words prefixed, such as John, William, &c., we at last come to some certain individual. It appears, then, that in the expressions John Page, William Smith, &c., John and William may have the names of adjectives as well as the words black, white, &c. And this leads us to observe that frequently nouns or names of things can be used like adjectives; thus we can say, a silver ring, a gold stick, salt water, sea water. Many words in English are, in fact, used both as nouns and adjectives. In the sense expresses 'John's book,' John may be considered as an adjective for the reasons just given. Some grammarians have wished to introduce the term adnoun instead of adjective, but though the word adjective is not a very good name, it has a better use.

There are two ways in which an adjective can stand in a proposition: we can say 'the horse is bad,' or 'a bad horse.' In the first example, horse is called the 'subject,' is the 'couple,' or connecting link, and 'bad' is the 'predicate' or qualifying term. According to the true idiom of our language, an adjective can stand at the end of any simple proposition, as, he walks slow, he rides quick, he speaks loud. It is true that usage is now beginning to be opposed to this mode of expression, and the adverb in -ly is gaining ground, especially in cases where it is desired to use the termination in -ly without making the spoken language at least very stiff and formal. Some words are used both as adjectives and adverbs.

Many adjectives are simple roots, such as good, bad, hot, &c., while others are formed by adding an suffix or suffix to a noun. The following list of adjectives formed by suffixes, or by adding a complete word, belong to the Saxon part of our language:—

- glad-some care-less
- play ful child-ish
- weight-y fore-most
- wood-en fork-ed

The following terminations of Latin adjectives of origin active, passive, and perfective are added, to, and ending in -ent, -ive, -ant-ive, -ate, -ine, -ic, -ar, -tile, -al, -ose. There are other terminations of less importance, such as ether-ial, advent-itous, &c., which agree with the examples already given, as to the last syllable, but differ in having a prefix or suffix between the first part of the word and the termination.

ADJUSTMENT, in marine insurance, is the settling and ascertaining the exact amount of indemnity which the party insured is entitled to receive under the policy, after all losses and expenses of every kind have been reduced to their real value. The calculation of the proportion of that indemnity which each underwriter is liable to bear. The contract of insurance is an agreement to indemnify the insured against such losses as he may sustain by his ship or goods. In all cases which are expressly, or by implication of law, contained in the policy. Thus, when a ship is lost, or any of those contingencies arise against which the insurance provides, the owner of the ship or of the goods insured, as the case may be, or an authorized agent, reports the loss to the insurers or underwriters. In London, this notice is given by an insertion in a book kept at Lloyd’s Coffee-House in the subscription-rooms, where the greater part of marine insurances are effected. If before any adjustment is made, the underwriters require to be informed of all particulars, that they may be satisfied the loss has occurred through circumstances against which the insurance was effected. In ordinary cases the task of ascertaining these facts, and of examining the correctness of the demand made by the assured, rests with the underwriter who has first subscribed the policy. In complicated cases of partial, or average losses, the papers are usually referred to some disinterested party, who makes a profession of such references, to calculate and adjust the per centage of the total loss which is wholly lost, of estimating the little difficulty occurs in this part of the inquiry; but in cases of partial losses, where the insured has not exercised his right of aban-
domment (see Abandonment), very minute and careful examination often becomes necessary. The quantity of damage being ascertained, the amount which each underwriter has made himself liable to by subscribing the policy is settled; and this being done, it is usual for one of the underwriters, or their agent, to indemnify the policy holder and adjust a partial loss on this policy of so much per cent. To this indorsement the signature of each underwriter must be affixed, and this process is called the adjustment of the loss.

After an adjustment has been made, it is not usual in mercantile practice for the underwriter to require any further proof, but at once to pay the loss; and it has been said that the reason for which adjustments have been introduced into the business of maritime insurance is, that upon the underwriter signing the adjustment, and thereby putting his hand to indorse the whole transaction is adjusted, time should be given him to pay the money. As a question of law, however, it is undecided how far the adjustment is conclusive and binding upon the underwriters; the better opinion appears to be that the adjustment is merely presumptive evidence against an insurer, and has only the effect of transferring the burden of proof from the assured to the underwriters; that is, where an adjustment has taken place, and the liability to pay the loss is disputed, the adjustment alone, without further proof, will have no subsequent to entitle the insurer to recover in an action on the policy, unless the underwriter shows facts which may have the effect of relieving him from liability. It is much to be lamented that a question of such importance in commercial transactions should not have received a solemn decision.—[See Selwyn's Nisi Prius, title Insurance; Park, on the Law of Marine Insurance, and a note to Campbell's Nisi Prius Reports, vol. i., p. 276.]

ADJUTANT, a military officer, attached to every battalion of a regiment. The office does not confer a separate rank, but is usually given to one of the subalterns. The duties of an adjutant are to superintend (under the major of the regiment, and the adjutant-general of the army) the ordinary routine of discipline in the regiment; to receive and promulgate to the battalion general, garrison, and regimental orders, signing them in the order-book on the part of the commanding-officer; to select detachments from the different companies, when required, to regulate the placing of guards, distribution of ammunition, &c.

ADJUTANT-GENERAL, a staff-officer, one of those next in rank to the commander-in-chief. He is to the army what the adjutant is to a regiment; he superintends the details of all the dispositions ordered by the commander-in-chief, communicates general orders to the different brigades, and receives and registers the reports of the state of each, as to numbers, discipline, equipments, &c. Though in a large army, the adjutant-general is usually a general officer, yet this rank is not necessary; and in smaller detachments, acting independently, the duties are frequently entrusted to an officer of lower rank.

ADJUTANT-GENERAL. Among the Jesuits, this title was given to certain fathers who resided with the general of the order. It was their duty to furnish him with information as to what was going on in the different countries of Europe, which was effected by means of emissaries employed for that purpose. Each country had one of these officers attached to it.

ADJUTANT, or GIGANTIC CRANE, (Ciconia argala, Temminck, Mysteria argala, Virilloth.) A singular bird, not uncommon in travelling managerys, being easily tamed, and handy, though a native of the warmer parts of India and found near Calcutta. Its size may be inferred from the fact of its wings, from tip to tip, measuring about fourteen or fifteen feet when stretched out; from the tip of the bill to the extremity of the claws it is seven feet and a half, while it is five feet high when standing erect; its plumage is black, the feathers of its wings being stiff and hard; the under parts are white, and there the plumes are long; the head and neck are without feathers, but the red callous skin there is furnished with hairs; a long slightly downy conical bag or pouch, like a large sausage, (to use the comparison of Baron Cuvier) hangs from the middle of the neck. The beak is very large, thick at the base, and the gape is very wide.

Though this does not hold in systematic classifications as a bird of prey, being properly placed with wading birds (Graullatas, Illiger), it is one of the most voracious and carnivorous birds known. The structure of its digestive organs corresponds with this voracious habit; though what comparative anatomists term the solvent or gastric glands are differently formed from those of any other bird. Their usual position in other birds is round the upper portion of the stomach; but in the adjutant they form two circular figures, about an inch and a half in diameter on the fore and back part of it, each gland being composed of five or six cells, and these opening into one common pipe which is entirely of the same strength with those of the crow, the gizzard being lined with a similar horny membrane.

The adjutant is not only capable of digesting bones, but it seems to be fond of them, swallowing bone which all other birds would refuse; and the gizzard is formed in such a manner that the food is swayed through its walls, and the gizzard being lined with a sand-like material, is capable of the same strength with those of the crow, the gizzard being lined with a similar horny membrane.

Mr. Smeathman furnished Dr. Latham with an interesting account of the adjutants from personal observations in India. They are," says Dr. L., "met in company; and when seen at a distance, near the mouths of rivers, coming towards an observer, which they often do with their wings extended, may well be taken for canoes upon the surface of a smooth sea—when on the sand-banks, for men and women picking up shell-fish or other things on the beach. One of these, a young bird about five feet high, was brought up tame, and presented to the chief of two Bananas, where Mr. Smeathman lived; and, being accustomed to be fed in the great hall, soon became familiar, (Edin.) attending that place at dinner-time, placing itself behind its master’s chair frequently before the guests entered. The servants were obliged to watch narrowly and to defend the provisions with switches; but, notwithstanding, it would frequently seize something or other, and once purloined a large gullet,—a circumstance which has led to its being called the bone-eater, or bone-taker. It has been stated by Sir Everard Home, that there was found in the crow or stomach of a gigantic crane a land tortoise ten inches long, and a large male black cat entire. [Voyage, p. 134. Phi. Trans. 1815, p. 77.] Its great voracity, however, is extremely useful in the countries which it inhabits, as it collects vermin from every quarter, such as snakes, lizards, frogs, and other reptiles, devouring such immense numbers of these as to prevent them from annoying the inhabitants. Who, on that account, hold the bird in as great estimation as the Hollanders do the stork.
voice like a bear or tiger. It is an enemy to small quadrupeds, as well as birds and reptiles, and often destroys fowls or chickens, though it dares not attack a hen openly with her young. Every thing is swallowed whole; and so accommodating is its throat, that not only an animal as big as a cat is gulped down, but a shinn of beef broken asunder serves for dinner. It is a voracious bird. It swallows a leg of mutton of five or six pounds, a hare, a small fox, &c.

After a time the bones are rejected from the stomach, which seems to be voluntary, for it has been known that an ounce or two of emetic tartar given to one of these birds produced no effect.

Lord Violeta (now Lord Mountnorris), after mentioning the amazing flocks of kites and crows which abound on the house tops and in the gardens at Calcutta, and subsist on the remains of the great profusion of food there dressed, which the prejudice of thePoor stocks of the church, and those that in the office of scavengers the kites and crows are assisted during the day by the adjutant bird, and at night by the foxes, jackals, and hyenas from the jungles in the vicinity. [Tenn. i. 519.]

Ives calls the bird a monster; but says the natives reverence it so much that they were rejoiced when he was unsuccessful in shooting one. They believe, according to the strange doctrine of transmigration, that the souls of the Brahmans are deposited in the birds, and render them invulnerable. [Free Voyage, London, 1773, p. 183.]

ADMINISTRATION and ADMINISTRATOR. An administrator is a person appointed by the ordinary or bishop of the diocese to make administration of, or to distribute the provisoes of, intestates, when there is not a will. It is said that, in very early times, the king was entitled in such a case to seize upon the goods in his character of general trustee of the kingdom, in order that they might be applied to the burial of the deceased, the payment of his debts, and, in case of need, to the support of his widow. It would appear that this power of the crown over the effects of intestates was greatly abused, for, by Magna Charta, King John granted that if a freeman should digest, his chattels should be distributed by the hands of his near relatives, which he had probably, formed the foundation upon which the prelates afterwards built their right to administer by their own hands the goods of an intestate. There is, at all events, no doubt of the fact, that the power of seizing the goods of an intestate was, at a later period, transferred from the crown to the bishops. The whole property was, in the first instance, placed in the custody of the ordinary, or bishop of the diocese in which the intestate died; and after the deduction of expenses, the residue thus given by the deceased, is two-thirds of the whole, which the law gave to the widow and children, the remaining third part vested in the bishop upon trust to distribute that proportion in charity to the poor, or in what were then termed ' pious uses,' for the benefit of the poor, and to the support of the Holy See, and the vicars of the prelates, who unscrupulously converted the whole residue of the property to the use of their order, without even paying the just debts of the deceased. To remedy this injustice, the statute called ' the Statute of Westminster the Second,' which was passed in the reign of Edward I., provided that the debts of the deceased should be paid by the ordinary in the same manner as if he had been an executor appointed by a will. The remainder, after payment of debts, still continued applicable to the same uses as before, the prelates thus retaining that portion by the ordinary, and to take the administration entirely out of his hands, the legislature again interposed, and by the statute of 31st Edward III., cap. 2, the ordnary was directed, in case the latter should not appoint him in pursuance of the statute, which selects the nearest and most lawful friend of the deceased; these words being interpreted to denote the nearest relation by blood who is not under any legal disability. The subsequent statute of 21st Henry VIII., c. 5, enlarges a little more the power of the ecclesiastical judge, and permits him to grant administration either to the widow, or the next of kin, or to both of them; and, where several persons are equally near of kin, empowers him to select one of them at his discretion.

If none of the kindred are willing to take out administration, a creditor is entitled to apply to the ordinary in the absence of any person entitled to demand letters of administration, the ordinary may appoint whomsoever he may think proper, to collect the goods of the deceased, for the benefit of such as may by law be entitled to them.

Administrators may be appointed even in a case where a will has been made, if by the will no executors are appointed, or if the persons named refuse, or if they are not legally qualified to act; and in any of these cases the administrator only differs from an executor in the name of his appointment. In such cases, if an executor refuses to act, it is usual to grant administration to the residuary legatee, i.e. to the person to whom, by the will, the remainder of the property, after payment of debts and legacies, is given.

In the case of an incomplete intestacy, it was formerly much doubted whether an administrator, when appointed by virtue of 31st Edward III., could be compelled to make any distribution of the effects of the intestate which remained in his hands, or after payment of debts; for though the administration had been transferred from the ordinary to the next of kin of the deceased, the latter stood in much the same position as the former had occupied, and was consequently not legally bound to administer. The spiritual courts endeavoured to make the creditors of these administrators answer for that purpose, but these bonds were declared void by the common law courts. These controversies are now at an end, for the statute, commonly called the ' Statute of Distributions,' 22 and 23 Charles II., cap. 10, explained by 29th Car. II., cap. 36, enacted that the debts of intestates, after payment of debts, shall, after the expiration of one year from the death of the intestate, be distributed in the following manner;—one-third shall go to the widow, and the remainder in equal proportions to the children of the intestate, if he be dead, to the next of kin of the intestate; if he be survived by a wife or child, then the personal representatives of the deceased; and if, at death, the intestate had no wife or children, the child or children of the intestate shall take in equal shares; if there be no children, or children's legal representatives, then one moiety shall go to the widow, and the other to the next of kin or children, as the case may be. Thus, for every legal representative, there must be an equivalent to the shares, the child so advanced shall have enough to put him on an equality with his brothers and sisters. This is a very reasonable provision; for in the absence of all expression of the father's intention by will, it would have been unjust to give a large share to one child than to another, unless it be his heir; and as he had advanced to one child his portion, it would not be fair for that child, at the death of the father without leaving a will, to obtain a share of the property equal to that obtained by the other children who had received no advances in their father's lifetime.

The statute of distributions expressly excepts and reserves the customs of the city of London, of the province of York, and of all other places having peculiar customs of distributing intestates' effects. These customs resemble, in some degree, the provisions of the statute, though they differ from them in some respects.

For further information upon the subject of administrator and administration, which will comprise all necessary practical directions, see Executors.

ADMIRAL, the title of the highest class of naval officers. Various fanciful etymologies of the word have been given; but there can be no doubt that it is merely a corruption of the Arabic Amr, meaning to direct; and the word is nothing more than the Arabic definite article al, the, without the noun to which it belongs. Eutychius, Patriarch of Alexandria, writing in the tenth century, calls the Caliph Omar Amir Amal, which he afterwards verbalized into Admiral, or Admira. The word Admiralet (the Commander of the Faithful). To form the word Admiral, the two first words of some title similar to this have been adopted, and the third has been drest. From this it appears that the word ought properly to be written, or rather ought at first to have been written,
Amiral, or Amiral, as we find it in Milton's expression:—

'The mast
Of some great Amiral.'

Milton, holding to this principle of orthography, wrote in Latin Ammiralis Curius (the Court of Admiralty). The French say 'Amiral,' and the Italian 'Ammiraglio.' The English seems to have got into the English word from a notion that Admiral was an abridgment of Admirable. The Latin writers of the middle ages sometimes, apparently from this conceit, style the commander of a fleet Admirabilis, and also Admirabiliter. The Spaniards say Almirante or Almirantio.

Under the Greek empire, the term Emir or Amir (in Greek characters Αμίρ) was used most commonly to designate the governor of a province or district, which was itself called Αμπελος. Gibbon states that the emir of the fleet was the most prominent of the officers residing in the navy; the first being entitled the Great Duke, and the second the Great Drungaire. [Decline and Fall, chap. liii.]

The holy wars of the twelfth and thirteenth centuries seem to have introduced the term Admiral into Europe. The Admiral of Sicily is reckoned to be the great officer in that kingdom in the twelfth century; and the Genevoise had also their admirals very soon after this time. In France and England the title appears to have been unknown till the latter part of the thirteenth century; the year 1294 being commonly received as the date of the appointment of the first French admiral, and the Admiral de la Mer du Roy d'Angleterre being first mentioned in records of the year 1297. The person to whom the title is given in this instance was William de Leycestre. It is said, at this time, England, although she had an admiral, had, properly speaking, no fleet; the custom being for the king, when he engaged in a naval expedition, to press into his service the merchant-vessels from all ports of the kingdom, just as it is still the custom in every one of the modern nations.

The duty of the admiral was then to manage the men and vessels on board such vessels. This circumstance is especially deserving of notice, as illustrating what an admiral originally was. The King of England's admiral of the sea was not necessarily the actual commander of the fleet; he was rather the governor of the state, who presided over the maritime affairs. Sometimes he was not a professional person at all; at other times he was one of the king's sons, or other near kinsman yet in his nanage, on whom the office was bestowed, as being one of great dignity and emolument; its duties were performed by professional persons actting in his name. But these duties were usually, not to command ships in battle, but merely to superintend and direct the naval strength of the kingdom, and to administer justice in all cases arising on the seas. The former of these duties is now executed by the department of government called the Admiralty, and the latter by the legal tribunal called the High Court of Admiralty.

Anciently, two or more admirals used often to be appointed, and their powers were divided among them in the different parts of the coast. Thus, in 1296, mention is made of the admiral of the King's Fleet, from the mouth of the Thames northward, and of another officer with the same title, commanding from the mouth of the Thames westward. Besides these, there were also Admirals of the Cinque Ports. It is the opinion of some writers that the first admiral of all England was appointed in the year 1387. Even the officer bearing this title, however, was not then the person possessing the highest maritime jurisdiction. Above him there was the King's Lieutenant on the Sea (an officer known super mare). Also before the term Admiral was used at all, there was an officer designated the Custos Maris, or Guardian of the Sea.

From the year 1405 (the 6th of Henry IV.) there is an uninterrupted series of Lord High Admirals of England, the office being always held by an individual, till the 26th November, 1632, when it was for the first time put in commission. All the great officers of state were the commissions. During the Commonwealth, the affairs of the navy were managed by a Committee of Parliament, till Cromwell took the conduct of the navy into the hands of the king, the king's brother, the Duke of York, was appointed Lord High Admiral; and he retained the place till the 22d of May, 1654, when, after Cromwell took it into his own hands. On the duke's accession to the throne, in the beginning of the following year, he was declared himself of the Revolution, the office was again put in commission; and it continued to be held in this form till 1707, when Prince George of Denmark was appointed Lord High Admiral, with a council of four persons to assist him. On his death in November, 1708, the Earl of Pembroke was appointed his successor, with a similar council. The earl resigned the office in 1719, since which time, till now, it has always been in commission, with the exception of the period of about sixteen months, from May, 1867, till September, 1868, during which period it was held by the present Duke of Clarence. The commissioners, styled the Lords Commissioners of the Admiralty, were formerly seven, and are now six in number; and the First Lord is always a member of the cabinet. It is the First Lord, indeed, who principally exercises the powers of the office.

Till the reign of Queen Anne, the salary of the Lord High Admiral was only 300 marks, the emoluments of the place, which were very large, arising chiefly from perquisites, or droits, as they were called, of various descriptions. Prince George of Denmark's salary, in consequence of the title of Duke of Denmark, receiving in their stead a salary of 1000l. a year. The salary of the First Lord of the Admiralty is at present 4,500l. per annum, and that of each of the others 1000l. The title is distinct, but are used in turn to the officers of the highest rank; of which we have in England three classes, namely, Admirals of the Red, of the White, and of the Blue. Admirals of the Red bear their flag at the main-top-gallant-mast-head; those of the White, at the fore-top-gallant-mast-head; and those of the Blue, at the main-top-gallant-mast-head. After the union with Scotland in 1707, the use of the red flag was discontinued, the union jack being substituted for it; but it was resumed at the naval promotion which took place in 1805, after the battle of Traflagar. The flag was divided into four quarters. Each quarter had its distinctive flag, each quarter forming one of the larger officers of the navy. There are also a vice-admiral and a rear-admiral of the United Kingdom, which places are now sinecures, and are usually bestowed upon naval officers of high standing and eminent services. According to the official Navy List for 1859, there were 159 officers of the class, which includes the fleet, who receives sea-pay of 6l. per day, forty-eight admirals, with the pay of 5l. per day; fifty-eight vice-admirals, with the pay of 4l. per day; and sixty-four rear-admirals, with the pay of 3l. per day. In addition to this pay, every commander-in-chief receives a further sum of 3l. per day while his flag shall be flying within the limits of his station.

ADMIRALTY COURTS, in law, are courts having jurisdiction over maritime causes, whether of civil or criminal nature. The Courts of Admiralty are held before the Lord High Admiral or his deputy, who is called the judge of the court: when there was a Lord High Admiral, the judge of the Admiralty usually held his place by patent from him; but when the judge of admiralty is executed by one of the Lord Commissioners of the Admiralty, his place is by direct commission from the crown under the great seal.

The Court of Admiralty is twofold: the Instance Court and the Prize Court; the commissions to hold these courts are perfect in their nature, but are exercised in the same person. Neither of them is a Court of Record.

The civil jurisdiction of the Instance Court extends generally to marine contracts: that is, to such contracts as are made upon the sea, and are founded in maritime service, as cargoes of merchandise, voyages of commerce, and voyage for necessary repairs; and to some few others, which, though entered into on land, are executed entirely upon the sea,—such as agreements for mariners' wages. But if part of a cause of action arises on the sea and part upon the land, the courts of admiralty are exclusively the courts of the Admiralty; and even in contracts made abroad they exercise in most cases a concurrent jurisdiction. The Admiralty Court has no cognizance of contracts under seal, except where, from the nature of the subject matter, it has exclusive jurisdiction, such as rewards, the Remerage system, and Articles of a ship, which a ship is given in pledge for necessary furnished to the master and mariners: this security, as it only binds the vessel on which the money is advanced, and imposes no personal contract on the borrower, does not fall within the admiralty jurisdiction. This admiralty, however, wisely regulates many other points of maritime right, such as disputes between part-owners of vessels, and questions relating to salvage, that is, the allowance made to those who have saved or recovered ships or goods from dangers of the...
sea. It has also power to inquire into certain wrongs or injuries committed on the high seas, such as collision, or the running foul of one ship against another, and in such cases to assess the damages to be paid to the party injured. This court is usually held at Doctors' Commons, like the ecclesiastical courts, to which, in its general constitution, it bears a great resemblance. The law by which its proceedings are governed is composed of such parts of the civil law as has been received into the common law, and other maritime laws, with such corrections, alterations, or amendments as have been introduced by acts of parliament or common usage. [Blackstone's Commentaries, vol. iii. pp. 89, 106.]

I. The prize and his smaller, to d'Entrecasteaux, and Prize-Court, It restore 1793. England species variety the same among these persons, or upon that occasion. It appears if really a sort of piracy and all other indictable offences committed either upon the sea or on the coasts, beyond the limits of any English county; and this (at least since the time of Edward III.) is so clearly established a rule of law that all other maritime courts, whether in this or any other country, should be according to the law of the land. In pursuance of this and some later statutes, sessions of oyer and terminer and gaol delivery, called the Admiralty Sessions, are held twice a year, namely in March and October. The persons committed before the judge of the Admiralty (who, in point of form, is the presiding judge,) together with two common-law judges, and one or two civilians. [Blackstone's Commentaries, vol. iv. p. 268. Hale's Plea of the Crown, vol. ii. p. 16.]

By several recent statutes it is declared that offences committed within the jurisdiction of the Court of Admiralty shall be liable to the same punishment as if committed on land.

The Prize-Court is the only tribunal for deciding what is, and what is not, lawful prize, and for adjudicating upon all matters which in practice and by the law of war are made to be understood every acquisition made jure belli (by right of war) which is either itself or a maritime character, or is made, whether at sea or by land, by a naval force. All acquisitions by right of war are by the law of war vested in the conqueror; and the practice of the courts is, that every person or country, on being understood to have acquired a maritime acquisition of any particular state, (as in England by several acts of parliament,) distributed in certain proportions among the persons who took or assisted in taking them. But the property in the thing captured is held by English law to extend to about 80 miles from the nearest point of land, beyond the territorial limits of the law of nations, not to be absolutely taken from the original owners, until, by the sentence of a properly authorized court, it has been condemned as lawful prize. We have, as it should appear, no court authorized to adjudicate upon these matters. The jurisdiction of the Prize-Court is commonly termed by writers on the law of nations; but, when occasion requires, (as, for instance, of late years, when property to an immense amount was captured by the British fleet in the course of the Decauville,) commissioners are specially appointed for the purpose. But property captured by the naval force forms the peculiar province of the Prize-Court of the Admiralty.

The end of a Prize-Court, says Lord Mansfield, "is to determine and to decide in the following cases: the lawfulness or want of lawfulness of a prize, and of all the cases of misconduct, or of misconduct of the captors; to restore instantly, if upon the most summary examination there does not appear sufficient ground; to condemn finally, if the goods really are prize, against every body, giving every body a fair opportunity of being heard." [See Douglass's Reports, p. 572, &c.]

Every sovereign power has a right to erect Admiralty Courts for the trial of prizes taken by virtue of the commissions which it has granted; but has no power to reverse the sentences given by the tribunals of another state; the only regular method of rectifying their errors is by appeal to the superior court.

The Cinque Ports have an exclusive Admiralty jurisdiction of their own: in Ireland, there has been an Instance Court for the same purposes; and there is an Admiralty Court in Scotland with very extensive civil jurisdiction. In several of our colonies there are courts of Vice-Admiralty, which not only have authority both as Instance Courts and Prize Courts, but have also, in certain revenue cases, concurrent jurisdiction with the civil authorities of record. [Stokes, On the Colonies, p. 387.]

From the Vice-Admiralty Courts of the colonies an appeal lies, in instance cases, to the Court of Admiralty in England; and from the Court of Admiralty in England an appeal lies, in instance cases, to the Privy Council. But that court (the thing in question being an appeal) to the king in council. See statute 2 and 3 Will. IV. c. 92. From prize cases, whether in the Vice-Admiralty Courts, or in the Court of Admiralty in England, the appeal lies directly to certain commissioners of appeal in prize cases, who are appointed by the king in council, and are usually members of his privy council, and whose appointment is generally regulated or recognized by treaties with foreign nations.

For the law on this whole of the subject, see Dr. Browne's View of the Civil Law, and the Law of the Admiralty, and Cowyn's Digest, tit. Admiralty.

ADMIRALTY ISLANDS. A group of islands, consisting of one larger and about 40 smaller, which are generally classed in the division of Australia. They lie south of the equator, between 9° S. lat., and 18° 10' S. lat., in 150° 47' 57° E. long., and were discovered by the Dutch in 1616. Captain Carteret visited them in 1767, and the Spanish navigator, D'Entrecasteaux, who was despatched to see if any trace of La Perouse's voyage could be found, visited these islands in 1793. The soil and climate are said to be good, but the landing is rendered difficult by reason of reefs and breakers. A number of small islands, with sand and rocks, are situated among them, which is difficult of approach, and no landing was made on the coast of D'Entrecasteaux. Only those islands seemed to be inhabited which had cocoa-nut trees on them. As they are very little elevated above the level of the sea, water must necessarily be a necessary resource. The largest island is about 45 miles long, and like most of them, principally covered with cocoa-nut trees; the inhabitants are of a dark colour with frizzled hair, and they go naked. They are described as good looking and well made. To the French navigator they seemed a tolerably healthy, and D'Entrecasteaux thought that in such a country, the Vice-Admiralty courts in England, the appeal lies to the king in council. See statute 2 and 3 Will. IV. c. 92. From prize cases, whether in the Vice-Admiralty Courts, or in the Court of Admiralty in England, the appeal lies directly to certain commissioners of appeal in prize cases, who are appointed by the king in council, and whose appointment is generally regulated or recognized by treaties with foreign nations.

For the law on this whole of the subject, see Dr. Browne's View of the Civil Law, and the Law of the Admiralty, and Cowyn's Digest, tit. Admiralty.

ADMIRALTY ISLAND, on the N.W. coast of North America, in the Archipelago of George III., and within that part of the continent which, since the treaty of 1825, belongs to what we call Russian America. Admiralty Island is inhabited by more people than any other part of the archipelago. The largest island is about 45 miles long, and like most of them, principally covered with cocoa-nut trees; the inhabitants are of a dark colour with frizzled hair, and they go naked. They are described as good looking and well made. To the French navigator they seemed a tolerably healthy, and D'Entrecasteaux thought that in such a country, the Vice-Admiralty courts in England, the appeal lies to the king in council. See statute 2 and 3 Will. IV. c. 92. From prize cases, whether in the Vice-Admiralty Courts, or in the Court of Admiralty in England, the appeal lies directly to certain commissioners of appeal in prize cases, who are appointed by the king in council, and whose appointment is generally regulated or recognized by treaties with foreign nations.

For the law on this whole of the subject, see Dr. Browne's View of the Civil Law, and the Law of the Admiralty, and Cowyn's Digest, tit. Admiralty.

ADONIS, a river of ancient Syria, which rises in the mountains of Lebanon. It has the same name with a personage of considerable importance in Pagan mythology, of whose story the following is a fragment of a MS. in Cyprians hand. G. daughter of Cyniras, King of Cyprus, was born in Arabia, whither his mother had fled in consequence of certain transactions which it is not necessary to relate. Before the birth of her son she was transformed into the tree which produces sacred gum, and by her name the tree is called Adonis. She was not hinder his being brought into the world in due season: he grew up a model of manly beauty, and was passionately beloved by Aphrodite (Venus), who quitted Olympus to dwell with him. Hunting was his favorite pursuit, until, having gone to the chase against the griffins, he was mortally wounded in the thigh by a wild boar. After death he was said to stand as high in the favour of Persephone (Proserpine), as before in that of Aphrodite; but the latter being incomparable, her rival generously consented that Adonis should spend half the year with his celestial, half with his infernal mistress. The fable has been variously
interpreted. One explanation makes the alternate abode of
Adonis above and under the earth, typical of the burial of
several which in a human form rises annually for the
propagation of its species; another, of the annual passage of
the sun from the northern to the southern hemisphere. In
the time of Pausanias, in the second century of our era,
there existed an ancient temple of Adonis and Aphrodite,
at Anthous, on the island of Cyprus.

The story of Adonis appears to have been introduced into
Greece from Syria. According to Pausanias, Sappho sang of
Adonis and his name, with allusion to his rites, occurs in
the works of Hesiod and in the Greek poets of later date,
and their Latin imitators, Theocritus, Bion, Ovid, that
his story has been probably expanded, and invested
with the elegance which is peculiar to the character of Grecian
mythology. The Adonia are mentioned by Aristophanes among
the Athenian festivals, and thus is (we believe) the
earliest mention of them, except some notice in the
poems attributed to Orpheus, (the epoch of which is, how-
ever, too doubtful to be received as authentic) and the
songs attributed to Sappho and Alcmena. The rites began
with mourning for the dead, and from other reports,
Thaumaturgus, viii. 14. 'He brought me to the door of the Lord's house...
and beheld, there sat women weeping for Thaumaturgus: then
changed into rejoicing for his return to life and to Aphrodite;
and concluded with a procession, in which the images of
Adonis and Aphrodite were carried in rich offerings in separate
coaches: after which the former appears to have been
thrown into the sea. See Thesior. tVli. xv. In the
time of Pausanias, the women of Argos, in the Peloponnesus,
married Adonis.

In Syria we know the worship of Adonis (if, according to
the received notion, he be the same personage as Thaumaturgus)
to be probably of much older date. We know, from the
passage in Ezekiel already quoted, that the adoration of
the latter was one of the abominations of Judah six centuries
before Christ. Whatever resemblance there may have been
between the early Syrian and Grecian rites, the former
were far more deeply polluted by the atrocities of a brutish
superstition, to which the natives of Syria were unusually
prone to submit. By theSEA, near the river Orontes, was one of
the chief seats of this worship, which was intimately connected
with a peculiarity incident to the river. Its waters, at a
certain period of the year, assume a deep red, and were
said to be discoloured by the blood of Adonis.


The phenomenon has been observed by modern travellers,
and is attributed to the rains, which bring a quantity of red
earth into the stream. [See Maundrell's Travels.] This,
which probably is the true solution, was suggested even in the
ancient times, in the following passage from [Tacit. De Syri.
3.3.]

ADOINES, in Botany, is a genus of plants belonging to
the natural order ranunculaceae, and containing many
species of very great beauty. The name is purely poetical.
Adonis is distinguished from ranunculus by the want of a
little scale at the base of the petals, and from the order of
the by the numerous hard, dry, sharp-pointed grains
of which its fruit consists.

Botanists divide the genus into two sections, the first of
which contains all the annuals, and the second all the
perennials. Ten species are spoken of as belonging to the
first section, inhabiting corn-fields and similar dry exposed
places, chiefly in the south of Europe and north of Africa.
Some of them have deep crimson flowers, as A. autumnalis,
the commonest and one of the most beautiful; in others the
blossoms are yellow: it is not improbable that they are all
varieties of the same species.

Of the perennial kinds, A. vernalis, which is common in
gardens in England, is found in a wild state abundantly on all
the mountains of the middle Europe, and is often
ten to twelve petals of a yellow colour, and of a brilliancy
which is rendered more dazzling by the deep green tint
of finely divided leaves among which they expand. It is
only a few inches high, and is one of the earliest harbingers
of spring. A. reptans is a creeping plant, and many
mountain plants, re-embarking A. vernalis in general appearance, but perhaps
still more beautiful. They seem to have been occasionallly
brought to this country, but to have been soon lost again.

Nothing has been remarked as to the sensible properties
of these plants; they doubtless partake of the activity so
prevalent in the genus. [See Adonis.]

ADOPTION, (from adoptare, Latin,) means taking by
choice. By the Roman law if a person had no children of
his own he might appoint any other person's, whether re-
latives or not, to be his children in adoption; and in order to
understand the ordinary modes of adoption and its
legal effects, it will be necessary to remember that at Rome
the relation of father and son was but little different from
that of master and slave, either in the rights and duties
afflicted to the master, or the manner in which it was done.
Hence, if a person wished to adopt the son of another, the
natural father sold the boy to him by a regular sale before a
magistrate, and, in order that he might be so completely
enfranchised from his father's authority, as never to be hab-
ited under it again, it was made impossible that this adoption
be formally repeated three several times. (See Exa-
cration.)

The father thus conveyed away all his paternal
rights, and the child, from that moment, became to all
minds and purposes, a member of the family of his adopter.

There was also a custom with a man's own master, of
adopting children by will: thus it was that Julius Cæsar adopted
his great nephew Octavius, who was therewith called
Caio Julius Caesar Octavianus; but is most generally
known under the more pious appellation of Augustus,
whence, his name is afterwards assumed: [Cic. De rom.
l. 1. tit. xi.] In like manner, several of the
Roman emperors adopted their successors: for instance,
Augustus adopted his step-son, Tiberius, Nero, and Clau-
dius Drusus, the former of whom afterwards succeeded to
his name. [See Tacit. Hist. II. 5. 4.] So Tiberius,
by the order, and during the life-time of Augustus,
adopted his nephew Germanicus, who died in the lifetime
of Tiberius; and on the death of Tiberius, Caligula, the son
of Germanicus, became emperor. At a subsequent period,
the emperor Claudius went so far as to adopt the steps-
brothers of Tiberius, afterwards the emperor Nero, to the exclusion
of his own son Britannicus. Tacitus remarks, that Nero
was the first stranger in blood ever adopted into the Claudian
family, and adds that in the next generation there were
six adopted children of Tiberius and his successor;
and the Roman history, great inconvenience was experienced in con-
sequence of the general disqualification to marriage among
the citizens. Before the times of the emperors, it is clear
that, in order to remove this inconvenience, rewards were
held out for the adoption of orphans, and this was
imposed upon celibacy. Immunities and exemptions from
state burthens were also given to those who possessed many
children: and in order to obtain these, the adoption of
children became a great abuse. Aulus Gallius complains of
it in [Tacit. Ann. xii. 38.], that the children of
the new adopted son should entitle his adoptive father to privileges in the state. [—Aud. Gall. Not. Att. v. 19.] Under Julius
Cæsar, after the wars, laws for the encouragement of popu-
lation were proposed, but not carried into effect: but in the
time of Trajan and Hadrian, those laws were revived and
re-established, [Tacit. Ann. 576.] which contained heavy penalties upon celibacy, and propor-
tionate rewards for the possession of children. This law
was so extremely unpopular, that, Suetonius says, it could
ADO not be executed, on account of the tumultuous opposition raised to it.—[Sueton. Aug. 34.]

Afterwards, however, a law passed, called from the Consul who introduced it, 'Lex Papia Poppea,' by which many privileges were given to those who possessed children of an age greater than seven years, and amongst them it was declared that, of candidates for pretorships and other offices who should have the preference who had the greatest number of children. This occasioned an intolerable abuse in the adoption of children. Tacitus says, that in the time of Nero Publicans were prohibited from adopting children who, whenever the election of magistrates or the allotment of provinces was at hand, provided themselves with sons by fraudulent adoptions; and then, when in common with real fathers, they had obtained praetorships and provincial governorships, they were permitted to the property of their adopted sons. Hence the genuine fathers betook themselves with mighty indignation to the senate, and petitioned for relief. This produced a decree that in the pursuit of any public employment whatever, no feigned adoptions should be admitted nor in taking estate by will.—[See Tacit. Annal. xv. 19.]

The eleventh title of the first book of Justinian's Institutes is concerning Adoption. By this law it is declared that there are two kinds of adoption, one called arrogatio, when by a regular act of adoption, the adopter appoints another who is independent of parents; the other, when by the authority of the magistrate (imperio magistratissi) he who is under the control of his parent is made over by that parent to another person, and adopted by him either as his son or daughter. The act of passing from the blood of one to that of another could not be performed except by infertile females also might be adopted in the same manner. But when a man gave his child to be adopted by a stranger, some of the parental authority passed from the natural to the adoptive father; the only effect was, that the child succeeded to the inheritance of the latter by the Roman system of adoption is derived from the Roman law, though it cannot be said, according to the proper meaning of the word, to have been in force before the fifteenth or sixteenth century. Any adoption, in order to be strictly and properly a legal process, must take place before a court, or at least before a whole council of adopted son who is of age to manage his own property. The Austrian law does not require the indulgence of the emperor to be permitted to receive those of others in their place. A slave, on being named a son by his master before a magistrate, became free, but acquired no filial right. The whole system of adoption is still kept to the principles of the Roman system of adoption, though the whole is modified so as to be more in harmony with German usages. The Prussian law does away with all distinction between adoption and arrogatio, and allows a adopted son who is of age to manage his own property. The Austrian law does not require the same. Both also agree in requiring the age of the adoptive father to be fifty at least. The Prussian law, with respect to the adopted son, merely requires him to be younger than the adopter, but not a two or eighteen years younger than the adoptive father. [Erassch and Gruber's Encyclopaedia, Art. Adoption.]

The French law of adoption is to be found in the eighth title of the first book of the Code Cistii. The following are the principal provisions of that code: Adoption is partly on the footing of marriage, and only the parties above the age of fifty, having neither children nor other legitimate descendants, and being at least fifteen years older than the individual adopted. It can only be exercised in favour of one who has been an object of the adopter's constant care for at least six years during minority, or of one who has saved the life of the adopter in battle, from fire, or from drowning. In the latter cases, the only restriction respecting the age of the parties is, that the adopter shall be older than the adopted, and shall have attained his majority, or his twenty-first year. In every case the party adopted must be of this age. The form is for the two parties to present themselves before the justice of the peace (juge de paix) for the place where the adopter resides, and in his presence to pass an act of mutual consent; after which the transaction, before being accounted valid, and among other things, must be approved of by the tribunal of first instance, within whose jurisdiction the domicile of the adopter is. The adopted takes the name of the adopter in addition to his own; and no marriage can take place between the adopter and either the adopted or his descendants, or between two adopted children of the same adopter, unless they are born between the adopted and any child who may be afterwards born to the adopter, or between the one party and the wife of the other. The adopted acquires no right of succession to the possessions of the adopter; but in regard to the property of the adopter himself, it is declared that he shall have precisely the same rights with a child born in wedlock, and that, even although there should be other children of the latter description born after his death.

Adoption is still practised both among the Turks and among other eastern nations. It is common for a rich Turk, who has no children of his own, to adopt as his heir the child of persons even of the poorest class. The bargain is confirmed by the parent together with the adopter, or getting their mutual consent recorded; after which the child cannot be disinherit by his adoptive father. D'Herbelot states, that, according to the law of Mohammed, a person becomes the adopted son of another by undergoing the ceremonial of wearing his shirt; he then draws another through one's shirt, signifies to adopt him for a son. In India the same thing is said to be frequently done by the two parties merely exchanging girdles. In the Code of Gentoo Laws published by Mr. Halhed, the 9th section of the 21st chapter is entitled, 'rules respecting adoption,' and the law permits a child under five years of age to be given up for adoption by its father for a payment of gold or rice, if he have other sons, on the parties going to a juge, or sacrifice, permanently. A woman, however, it is added, must not adopt a child without her husband's consent; and there is even some doubt if she may with that. 'He concludes the law, 'who has no son, or grandson, or grandson's son, or brother's son, shall (may) adopt a son; and while he has one adopted son, he shall not adopt a second. ADOURE, called by the Roman writers Atur, Aturis, and Aturus, a river in France, which rises in the department of Hautes Pyrenees (the Upper Pyrenees). Its course is first northerly direct, and then to the town of Bagneres (just above which there is a fall of one hundred feet); then towards the west, and finally towards the south-west, passing the towns of Tarbes, Aire, St. Sever (where it becomes navigable), Dax, and Bayonne, and describing a whole course of 100 miles, lies nearly N.N.W. and S.S.E. The whole length of the river is estimated by Maltebrun at 70 French leagues, or about 170 English miles. Its basin is bounded by the Pyrenees on the south, and on the east by a range of hills, extending from these mountains towards the sandy plains of the department of Gironda. Many streams from the Pyrenees, as the Gahaas, Luy de France, Luy de Bearn, Gave de Pau, which receives the Gave d'Oleron and the Biou in the left bank; the Midous, and others, on the right. The current is usually rapid, and the melting of the snows on the Pyrenees causes desolating inundations. The Adour falls into the Bay of Biscay, about three miles below the strong and flourishing town of Bayonne, which, at ebb tide, there is sometimes less than three feet water.

ADOWA, one of the chief places in Abyssinia in the kingdom of Tigre, and in the district of Adowa, which is a part of Tigre proper (N. lat. 14° 12′ 30″, E. long. 39° 3′), is a town of some importance. An uncommon occurrence in Tigre, where most of the towns are on eminences. The houses are all of a conical form, and arranged pretty regularly in streets. The town is well supplied with water from those rivulets which fall into the Mareh, and grapes grow well in the gardens. Adowa from its position is the great mart between the coast and the interior provinces, and carries on a considerable trade, which is mostly in the hands of Mohammedan merchants. The population is probably not under eight thousand. Mr. Bruce informs us that the Jews have the sole
privilege of thatching houses at Adowa, which, when rightly interpreted, may mean that they are the only persons who can do it well.

The chief manufactures of Adowa are coarse and fine cotton cloths, made both of native cotton from the low lands on the Taceaza, and from cotton imported through Massowa on the coast of the Red Sea. Mr. Salt mentions the following as the chief imports which pass through Adowa for the Gunna at a small quantity, 2400, block tin, damar, and gold foil; small and cheap Persian carbets, raw silk from China, some velvets, French broad cloths, and coloured skims from Egypt; Venetian glass ware and beads, and such other small commodities as in various ways happen to be wanted by the people of Massawa. The trade which mostly pass through the hands of the Adowa merchants for export, are ivory, gold, and slaves. A large part of the ivory comes from the province of Walkayt, which lies on the Taceaza, and from the low lands north of the Tacearch, which abound in elephants. The gold is collected in the interior, and as to the amount that passes through Adowa, Mr. Salt is unable to state it with accuracy, owing to this branch of commerce being carried on with great secrecy. He mentions the slaves exported annually, to be upwards of 7000.

(Salt's Abysinia, p. 394, &c.) Mr. Bruce says that the word 'Adowa' signifies 'pass or passage,' and the following, which Mr. Bruce himself feels to be a correct interpretation of 'Adowa' in the Tigré language:

ADOWA Mocchatellina, is a little inconspicuous plant found in woods and groves in all parts of Europe. It is common in Chariton and Hampstead woods, near London, and in many other spots in England.

The flowers, which appear dry as white as snow, arise, early every spring, a few leaves about four or five inches high, divided into three principal divisions, each of which is also three-leaved, with every lobe deeply cut into round segments. The stem that supports the flowers has two opposite leaves at the base of the lobe, only they have a short stalk, and consist of but three leaflets. The flowers have a musky smell, are pale green, and are collected in little round heads. Each one consists of a superior calyx of five lobes; there are no petals; the stamens are ten; the styles five; and the ovary contains five cells. This last changes to a succulent berry, having five compressed seeds.

In English this is called moschatelle; it is a pretty, interesting plant, much sought after by the curious for the sake of its delicate, modest perfume. Numerous varieties of it have been cultivated in gardens, and the flowers have been used as a fish poison, to keep the fish swimming long.

ADRIA. [See HADRAN.]

ADRIAN I., Pope, born at Rome, succeeded Stephen III. in 774. Like his predecessor, he had to struggle against the power of the Longobardi, who had invaded Italy previous to the time when the Franks, on the Roman sea. Devastating with fire and sword Sinigaglia, Urbino, and other cities, they advanced as far as Otricoli, on the Tiber, and threatened Rome with the same fate. Desiderius, king of the Longobardi, had taken refuge in the town of Ferrara, joined the Etruscans and GAETA, Etruria, and the walls and the ruins of an amphitheater, of baths, aqueducts and mosaic pavements, and other Etruscan and Roman antiquities, are found many feet below the surface of the ground. There is an interesting collection of antiquities in the cathedral. The present town of Adria is crossed by the Castagnaro, a branch of the Adige; it has about 9600 inhabitants, and is a bishop's see, although, of late, the bishops reside mostly at Rovigo, which is fifteen miles to the westward of the town. The town of Ferrara, the ancient seat of the Sforza, the town itself being only three miles north of the Po. Piny the Elder speaks of the wines of Adria with praise; the country still produces some tolerable reds. The town is crossed by the river Stelva, which contains a large quantity of fish. The town of Adria lies 30 miles S.S.W. of Venice, N. lat. 45° E., longitude 8E.

ADRIAN. [See Hadrian.]

ADRIAN II., born at Rome, succeeded Nicholas I. in the papal chair, in 867. He had been married, and had a daughter by his wife Stephanie, from whom he afterwards separated.
in order to live in celibacy. After his election, his wife and daughter continued to live at Rome in a separate house, when an unprincipled man, called Eliotherus, carried off the girl by violence, and on the pontiff retaking his child, the ravisher forced his way into the house and murdered both. Adrian had lavishly disbursed his wealth and was sentenced to death by the imperial commissioners, who still exercised the high judgment at Rome. During the pontificate of Adrian, the emperor Ludovicus II. was in

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ished it, as he did so many other cities of his dominions. Adrianoae rise gently on the side of a small hill from the banks of the Hebrus and Tunsia, (Chishull,) and is about five miles in circumference. When Chishull passed through this city, he saw it was the ancient residence of the Sultun, whose seraglio stood on a low ground near the confluence of the Maritza and Tunja, embosomed in trees: it is now in a state of desolation. The streets of the town are narrow and irregular, but it is well provided with mosques, fountains, and baths. The number of inhabitants is 130,000, of whom 30,000 are Greeks. Mr. Alexander, a recent traveller, thinks there may be only 100,000. One of the mosques, that of Sultan Mourad I., was once a Christian church, and another has a great quantity of porphyry in it; but the most celebrated is the mosque of Sultan H., built chiefly of materials brought from the ruins of Furnagosta, in Cyprus. It consists of one great apartment like a theatre, terminating in a cupola, and has four regular minarets, to the highest line of which there is an ascent by 214 steps, or, according to other accounts, 340. But one of the most important constructions of Adrianoae is the bazaar of Ali Pacha, near the mosque of Sultan Selim; Chishull says, the shops here are two long and square buildings, surrounded by a high stone wall and securely arched over head so as to resist fire. The shorter of these adjoins Sultan Selim, and is appropriated to the shoemakers; but the other, being about 300 paces long and 6 broad, is filled with shops of various trades. Chishull remarks that a madhouse, kept very neat and clean, and an unfortunate innmates were fastened close to the ground by an iron chain round their necks. A large aqueduct supplies the baths, mosques, and fountains with water. Many traces of Roman building may be seen at Adrianoae; and several inscriptions have been lately discovered of a colossal statue about 12 feet high. The river Maritza, being navigable as far as Adrianoae for small craft, contributes to the commercial prosperity of the town. The port is Elos, which retains its ancient name, and stands on the side of the bay, into which the Hebrus flows. The manufactures of Adrianoae are silk, woollen, and cotton stuffs: it has also establishments for dyeing, and distilling rose-water and other perfumes, and for tanning leather. Among its chief exports are fine wool, leather, wax, &c. Chishull remarked in his time, that about Adrianoae grows an excellent red wine. In the campaign of 1829, when the Russians invaded Tercrtoy and crossed the Danube and the Balkan, they advanced under General Dehmbch as far as the confines of the kingdom of Thrace 9 September 1829. [See Balli, Avergie de Géographie, 1833. Also, Kisch and Gruher.

ADRIANIA WALL. (Sec. ROMAN WALL.)

Hadrie or Hadria, now commonly called by Latin writers the Upper Sea, (mare superum,) was the ancient name of the Gulf of Venice. The term Adriatic (or Adriatica, which Pliny says was the earlier form of the name) was derived from the city Adria [see Adria.] The name Adria is used by Herodotus, but he seems to apply it perhaps rather to the country on the coasts of this gulf. The Adriatic Sea is called by Greek writers the Ionian Bay or Gulf, forming part of the Ionian Sea; but whence the epithet Ionian was derived, there is no satisfactory account.

Horace makes the Hadrion wash the Calabrian coast, and Thucydides says (I. 214) that Epidamnus, now Durazzo, lies on your right as you sail into the Ionian Gulf. According to the monuments of the commencement of the Ionian Gulf and the Adriatic. The mouth or strait indeed belongs to both, but the Ionian is the name of the first part of this sea, and the Adriatic of the inner part up to its recess; and now it is used in that sense.

ADUL.ARIA is the name given by mineralogists to the ornamental stone called by lapidaries m.ionaste, on account of the play of light exhibited by the arrangement of its crystalline structure. The term is derived from Mount Avall, and is a corruption of the name of the country of the same name, Avallia, which is a very pure limpid variety of the common mineral, felspar, and is composed of 64 per cent. of silic., 20 of alum., 2 of lime, and 14 of potash, according to the analysis of Vanucelin. It is found abundantly on the Alps, and on Mount St. Gothard; but the best are from Ceylon, and a very fine specimen has been sold for as much as 400.

ADULC.EL corresponds to the modern Zulla, on the west coast of the Red Sea [see Abyssinia]. Zulla is in the vicinity of a small bay, named Amessay's Bay, and in N. lat. 15° 35'. It is a matter of some curiosity to determine with precision what spot corresponds to the Adule of Cosmas, who was a merchant of the sixth century of the Christian era, and his description of the port of Zulla is a specimen of a Greek inscription which he found at this place. Adule at this period was the port of Axum, where merchants traded for ivory and slaves, just as they now do at Masara, on the same coast—so little are things changed, in many parts of the coast of the Red Sea. When Mr. Salt was in Abyssinia he was prevented from visiting Zulla; a friend of his who went there was also prevented by the jealousy of the natives from visiting the remains. All however agreed in saying that there were remains of this place. The name Zulla is sometimes pronounced Thulla, and Adule may readily be admitted to correspond so far as to strengthen the probability of their both designating the same place. Mr. Salt adds, that some of the natives pronounced the name Tunza or Tunza; and another place which they may be seen near Adule. D'Anville, in his map of the Red Sea, places Adie at Arkecko on the same coast, and about 22° farther north than Zulla. The inscription was found, according to Cosmas, partly on a throne of white marble, and also on a table or pedestal, of which the fragments are preserved in the museum in Montferrand's Collectio Nova Paphern, Paris, 1766, fol., vol. ii., p. 141, in Fabricius Bibliotheca Graeca tom. ii. and Chishull's Antiquitates Asiaticae. The first part of the inscription refers to the third Ptolemy, called Philopappus or the great Pharaoh King of Egypt, who, according to the testimony of the stone, was supplied with "elephants from the Tragolstcae and the Ethiopians," which his father (Ptolemy II.) and himself first hunted in these regions, and having taken down to Egypt, adapted to the consumption of the Egyptians. The inscription begins 247 to 222. The second part of the inscription is in the first person (the first part being in the third), and appears to record the triumphs of some Egyptian king, whose name does not appear at all. The inscription was found among the ruins of the borders of Egypt. This passage alone is sufficient to show that the second part of the inscription cannot refer to the same person as the first part; for Ptolemy's conquests extended from Egypt to Ethiopia, and not from Ethiopia to Egypt. The second part commemorates also the successes of this Egyptian king over some of the nations of Arabia; and we find (which tends to confirm the general accuracy of the text) that several names are mentioned which we can still recognize in Africa. Among others, the stone speaks of the "Samen or Semon, the people of Samen (Abyssinia), a nation dwelling beyond the Nile, in mountains difficult of access, and snow-covered, wherein all through the year there is ice and very deep snow, so that a man will sink up to his neck with difficulty, these, having killed the Ethiopian king, I subdued." The mountains are clearly the Semon, and the river is the Taccasse. [See Clinton's Itinerary, p. 382.]

ADULT. SCHOOLS are establishments for instructing in reading and other branches of knowledge those persons who have not been educated in their youth. They are designed to meet the wishes of people who are no longer contented to remain uninstructed, and who do not think that the present period of an early age has necessarily cut them off from the evil of perpetual ignorance.

It has generally been found that those who are desirous of acquiring knowledge, and of attaining to a higher state of mental improvement, will better understand and improve the useful knowledge of the day by the actual experience on an extended scale. It has shown the advantages of adult-schools to be even greater than could have been anticipated. They have uniformly worked good, by imper-
In few the one and at Norwich, school Johnstone, offered an opportunity acquiring the dwellings, uneducated persons were able to turn their acquirements, small as they are, to very good account, and who has had the office of standing overseer of Edgbaston parish for seven years, was qualified in the adult school. When he entered it he could neither read nor write. The moral effect of the school has been most satisfactory. A man who has been a leading member for several years, was an habitual tippler before he entered the school; he is now always sober.

The school has been in existence for seventeen years, there have been only three or four cases of divorce, and if the school, established in different parts of the kingdom, at Uxbridge, Norwich, Ipswich, Sheffield, Salisbury, Plymouth, and other places.

These institutions are in general conducted in an excellent manner. The different committees for their management are usually composed of individuals of various religious persuasions. No party feelings are sought to be instilled—no particular creeds are authoritatively imposed; but means are offered to the persons who attend for inquiring and judging for themselves, and their minds are left perfectly unbiased.

It has been found that many of the uneducated are unwilling to attend the public schools, in consequence of a dislike to expose their ignorance. To meet this difficulty, the plan of giving free instruction, as in the Mosaic law, has been generally adopted in the United States. A few individuals living near to each other meet at their own dwellings, or at some more suitable place, where they are instructed by their benevolent teachers. We have had an opportunity of knowing how much pleasure and profit has been gained from this mode of instruction in a school at Bath now conducted by a few ladies, who, on stated evenings in the week, devote two or three hours to teaching some of the uneducated of their own sex. A poor widow woman, sixty years of age, deprived in mind and body, earning a precarious subsistence and wholly ignorant even of the rudiments of reading, commenced attendance on this school three years ago; in a few months she learned to read, and is now unable adequately to express her sense of the benefit she derived from it. Although, however, a solitary instance where a person has acquired the difficult art of reading in old age. Many verging on the grave have gladly availed themselves, in the last few months of their existence, the means afforded them of reading for themselves the hopes and promises held out by the Scriptures. In a few years, perhaps, by a system of mutual instruction, these adult-schooLs may be made the means of continuing the education begun in youth; for there will, it is evident, be a time when the instruction which the majority of our youth have not acquired the art of reading in their childhood. Scarcely twenty years back (1814), it was reckoned that England alone contained 1,200,000 adults who could not read. In the first annual report of the society in Edinburgh for the improvement of school children, it is stated that 300,000 persons in the Highlands and islands of Scotland could not read either Gaelic or English; and that in the islands, among a population of 14,056, only 1836 could read. We are not assured of the extent of this error, but the example experiment in adult education tried with success by Dr. Johnstone, at Edgbaston Hall, near Birmingham. This school was established about 1815; and the only expense incurred by the individual with whom the plan originated, is the outlay of a few pounds. In the return of the students there are now forty members—more than half the labouring population of the parish—of all ages from eighteen to seventy. The teaching is confined to reading and writing; but there is a prosperous and well-conducted benefit society connected with the institution. The management of the school and the benefit society is in the hands of the men themselves. This point has always been a great objection to the founder of the school. The men teach each other; and the affairs of the benefit society are directed by a committee chosen by the members generally. The school assemble once a week, on a Friday evening; and the men often go on with their lessons at home in the week days. It is found that a man who is quite ignorant of reading will generally acquire sufficient knowledge to enable him to read with pleasure to himself in the course of six months. They sometimes change that strange character of a writer than of reading. In truth, they show wonderful perseverance in plodding through endless copies, from the large text down to the small hand. In many instances the members of the school have been able to turn their acquirements, small as they are, to very good account, and who has had the office of standing overseer of Edgbaston parish for seven years, was qualified in the adult school. When he entered it he could neither read nor write. The moral effect of the school has been most satisfactory. A man who has been a leading member for several years, was an habitual tippler before he entered the school; he is now always sober. Though the school has been in existence for seventeen years, there have been only three or four cases of divorce; and these cases happened in the first period of its establishment. One member has been even reclaimed from pauperism. He was formerly a constant burden on the parish; he is now, however, quite independent of assistance, and has lately opened a bookstall.

Adult-schools have likewise been established at Philadelphia and New York. In the latter city there is one opened for adults among the black inhabitants.

ADULTERY is the offence of incontinence between two married persons, or between two persons, one of whom is married. In the latter case it is called single, in the former, double adultery.

This crime was punished by the Jewish law with death; but it must be remembered that the kind of adultery which is punished was the crime of desertion and theft, and not the act of cohabitation. Even in this respect the law is more lenient than the Jewish marriage-law; by which the husband and wife had not an equal right to restrain each other from infidelity; for the former might marry other wives, or take concubines and slaves to his bed, without giving his first wife a legal right to the enjoyment of her husband.

The punishment, however, of incontinence in a married woman with a stranger was, by the Levitical law, death by stoning, both in the case of the stranger and the adulteress. (Levit. xx. 10, and Michaelis' Mosaisches Recht.) By the Roman law, the punishment might be death, or in other cases,brands, banishment, fines, and imprisonment. When a man is detected him in the act of dishonouring him (Lysias' Oration on the Death of Eratosthenes). Under such circumstances, the Code Napoleon expressly authorizes the husband to kill both the offenders.

The Roman law corresponds with the Hebrew law respecting the distinction between the infidelity of the husband and the wife. The civilians define adultery to be the violation of another man's bed (vulatio fori alteri); so that it appears that the infidelity of the wife could not constitute the offence. The more ancient laws of Rome, which were extremely severe against the offence of the wife, were silent as to that of the husband. By an old law, an adulteress was to be slain by her husband and his relations (adulteri concubint in veste et cognati uti volent, necant). At a later period, by the Lex Julia, adultery in the wife was punishable by her banishment or transportation into some remote island; she also forfeited half her dowry and a third of her goods. This punishment was afterwards extended to the public use. But although by the Julian law adultery was not punishable with death by a legal sentence, the father of the adulteress was permitted to kill both her and her paramour; and in some cases, the husband had the right of life. In the reign of Constantinianus the husband's wife became, by the Roman law, a capital offence; and continued to be so until the time of Justinian, who introduced some mitigation of the punishment.

By the canonical law, however, which is now more or less
ADVENTURE. A bill of, is a writing signed by a merchant, stating that the property of goods shipped in his name belongs to another, the adventure or chance of which the person named is to have, and which the merchant is bound to give the merchant to account for the produce. In commerce, an adventure is defined a speculation in goods sent abroad under the care of a supercargo, to dispose of to the best advantage for the benefit of his employers.

ADVERTER, literally, the approach or coming, is the space of four weeks preceding Christmas, appointed in the English and other Christian churches to be kept holy in celebration of the approach of our Saviour's nativity or manifestation. Anceiely, the season of Advent was commencing therefore about Martinmas, used to be called the Sancti Martini Quadragesima, or the Forty Days' Lent of St. Martin. It is still of this duration in the Greek church, and the first Sunday in Advent, commonly called Advent Sunday, is now the Sunday, whether before or after, which falls nearest to St. Andrew's day (the 30th of November). Marriages are not allowed to be solemnised from the commencement of Advent to the end of the octaves of Epiphany, that is the 14th of January, except by special licence.

ADVENTURE BAY, is situated on the south-east coast of New Holland, in latitude 43° 21' south, and longitude 147° 59' east. This bay was first discovered by Captain Furneaux in 1773, and was named by him after the ship which he commanded, and which formed part of the expedition under the orders of Captain Cook. The anchoring ground is good and well sheltered, and the neighbouring shore abounds with groves of wood which can be procured. At the head of the bay is a beautiful sandy beach, two miles long, formed by particles continually washed by the sea from a very fine white sand-stone that bounds the shore. Behind this beach is a level plain, containing a lake with brackish water, where abundance of bream and trout are found. The shores of the bay in other parts, are hilly, and the whole district is very thickly wooded, presenting to view in every direction, a perfect forest of tall trees, with thick underbrush, which makes it almost impenetrable. The soil is not deep but rich, consisting of black, vegetable mould. No considerable stream has been discovered in the neighbourhood of the bay. Several small rivulets trickle between the hills, and uniting together form brooks or streams. The coast is occasionally visited by some of the wandering aborigines of the island, who never remain long in one place, but move about in quest of food, having not yet adopted the arts of cultivation or of domesticating animals. The animal principally found in these wilds is the kangaroo, in hunting which the natives show considerable activity. Brown hawks, cranes, parakeets, pigeons, and a variety of small birds, frequent the woods, which are also infested by large black snakes and lizards. Insects are numerous and troublesome; among these are mosequitoes and a large black ant, the pain of whose bite is intolerable for a short time. The bay is visited periodically by an abundance of fish of various kinds. Adventure Bay was visited in the years 1777 and 1793 by Captain Bligh, for the purpose of obtaining wood and water (see Cook's Third Voyage, vol. i., p. 93—117.) Bligh's Voyage to the South Sea: Voyage D'Entrecasteaux, red. by M. de Rossel, tom. i., p. 121.

ADVERTORIAL, BILLS OF, is a writing signed by a merchant, stating that the property of goods shipped in his name belongs to another, the adventure or chance of which the person named is to have, and which the merchant is bound to account for the produce. In commerce, an adventure is defined a speculation in goods sent abroad under the care of a supercargo, to dispose of to the best advantage for the benefit of his employers. ADVERTISER, prefixing the old Saxon preposition on or to, to nouns, in a careless pronunciation afterwards left nothing but the vowel a, as on fede, now a-foot. Lastly, we have an interesting though hitherto formation dependent on the Latin, a word formed by the juxtaposition of an adjective to a substantive, from which it is derived, e.g. aggledy-paggledy, &c. The same love of abbreviation, which is said to have formed an important element in Anglo-Saxon verification, has also given rise to some adjectives and substantives, as hum-drum, slip-slop, hop-top, note-late, hurly-burly, &c.

ADVERTISMENT. In the English, Sceach, and Irish newspapers, and other periodical works, there are annually published more than a million of announcements, which, whatever be their peculiar character, are known by the general name—Advertisements. Each of these Advertisements now pays a duty of 3d. per line, and the gross produce of the tax is about 170,000l. The charge for an Advertisement necessarily depends upon its length, and most newspapers have a scale by which the charge for each line, advertisement, and the increasing price according to length, are regulated, or ought to be, by the number circulated of the work in which it is printed. Advertisements, generally, supply a fund by which newspapers are supported; for, in most cases, the pay collected by which they are supported is insufficient to pay the cost of the stamp, the paper, the printing, and the expenses of management. Many newspapers have greatly enlarged their size of late years, to allow of the insertion of the advertisement column; in which it is very expensive to copy the Times in the whole of the year 1831 contained 4,358 square feet, while one copy of the Star contained only 2,889 square feet;—the Times is a great advertising paper, and the profits of Advertisements allow the proprietors to keep up the price of the paper. The advertisement columns of the Times is the same. In the greater number of Advertisements the duty of 3d. per line, constitutes a tax of 100 per cent. upon the price received for their own benefit by the proprietors.
ADVERTISEMENTS

• Ads payable by bill of exchange.

ADVICE, in commercial language, means information given by one merchant or banker to another by letter, in which the part to whom it is addressed is informed of the bills or drafts which have been drawn upon him, with the particulars of the terms of payment, and the usual conditions, to which they are made payable by the drawer. Bills are sometimes made payable, as per advice; at other times, without further advice; and generally without any of these. In the former case the drawer may not, in the latter he may, pay before he has received the advice.

Advocacy, in commercial language, means information given by one merchant or banker to another by letter, in which the party to whom it is addressed is informed of the bills or drafts which have been drawn upon him, with the particulars of the terms of payment, and the usual conditions, to which they are made payable by the drawer. Bills are sometimes made payable, as per advice; at other times, without further advice; and generally without any of these. In the former case the drawer may not, in the latter he may, pay before he has received the advice.

ADVOCATE, from the Latin advocate, to call in aid. Among the ancient Romans, an advocate was a person skilled in the laws. The origin of advocates in Rome was derived from an early institution, by which every head of a family was made an advocate for his son, who was bound to him as a protector, and in return owed him certain obligations. This law established the relation of advocate, or patron, and client. As it was one of the principal and most essential duties of the patron to explain the law to his client, and came to be considered as a part of the patron's dignity, the relation was gradually contracted to this extent.

In early periods of the Roman republic, the profession of an advocate was held in high estimation. It was then the privilege of a citizen to be an advocate in his own cause. He might also, on payment to the officer on whom the business was intrusted, be admitted to the rights of advocates, and, by paying a certain sum, to become an advocate (Annuity honorarium), and was generally, but not necessarily, pre-nominated, or paid into the hands of the advocate before the cause was pleaded. It was a rule, that, if once paid, the fee could never be recovered, even though the advocate was prevented by death or accident from pleading the cause; and where an advocate was paid an annual salary (which was lawful and usual), the whole yearly payment was due from the moment of the retainer, though the advocate died before the expiration of the year.

[See Heineccii Elementa Juris Civilis, p. 132.] Manifest examples of this practice are still to be found in the courts of both the civil and Roman law has been introduced; and are also clearly discernible in the rules and forms respecting fees to counsel at the present day in England.

In countries where the Roman law prevails, the pleaders in courts of justice are still called advocates; their character, duties, and liabilities, being extremely various under different governments. In Scotland, the faculty of advocates consists of pleaders or counsel, admitted, upon an examination, to practise before the Courts of Session, Justiciary, and Exchequer; they are also entitled to plead in the House of Lords in England upon appeals from the Scotch courts.

Advocates in English courts are usually termed counsel, and we therefore refer to that title for a particular account of their history, private and public.

The Lord Advocate, or King's Advocate, is the principal crown lawyer in Scotland. Previously to the Union, he was one of the great state officers, and sat in parliament by virtue of his office, without election. His duty is to act as a public prosecutor, and to pleading in the case when the crown is interested, and particularly in criminal cases. Originally this officer had no power to institute criminal prosecutions, except at the instance of injured parties; but in the year 1597, he was expressly empowered to prosecute crimes at his own motion.

ADVOCATES' LIBRARY. The idea of establishing a library, for the use of the Faculty of Advocates in Scotland, seems first to have been entertained a few years before the Revolution. The author and active promoter of the plan was Mr. Macfadyen. Although we have before us that gentleman's inaugural oration, which he pronounced when the library was first opened, as well as several other papers relative to the subject, we cannot date the precise date when Sir George's scheme was first approved and adopted by the faculty as a body. In the Latin inaugural oration, which is said to have been delivered in 1689, is the following passage:—'This is the fifth year since the Faculty of Advocates resolved, from gifts of subscribers, to found and establish a library, consisting merely of the works of lawyers, and such other works as tended to the advancement of jurisprudence.' We may conclude from this that the idea was adopted by the faculty in 1684 or 5; and Mr. Alexander Bell, who was at that time the President of the Faculty of Advocates in 1772, says in the preface to Ruddiman's Catalogue, which he edited, 'The plan of forming a public library appears to have been adopted by the Faculty of Advocates about the year 1686.' At first, the Advocates' Library had no fixed fund, but subsisted and increased by means of donations, not from advocates only, but also from other individuals, and from such sums as the faculty, from time to time, placed at the disposal of the curators. Thus it happened that although the Advocates' Library, strictly speaking, belonged to the Faculty of Advocates as an exclusive body, it still was early considered as a public library, and was open to the public. This characteristic has rendered the institution very popular, and the library is enumerated from 1689 to 1700 the greater part of the collection was consumed by fire. During the first nine years after its restoration the library must have increased considerably, since, in the eighth year of Queen Anne's reign, it obtained the privilege of receiving a copy of every new book that had been translated from the original, which act of parliament of that year, was conferred on it, with eight other libraries. Of these, five were Scotch libraries; and the disproportion privilege may have originated in the desire of the legislature to grant it to both. Scottish and Irish libraries. The whole number of volumes now contained in the library is estimated not to exceed 150,000. Still the Advocates' Library is by far the largest, and also the most valuable in Scotland. In Great Britain there are probably only two
libraries, viz., the British Museum and the Bodleian, that out-number it. As might be expected, the collection of Law books is by far the most extensive and valuable in ancient and modern works. Many important modern works of foreign jurisprudence are still wanting. The historical collection is exceedingly valuable, containing almost every work of importance that has been published in England, France, Italy, Spain, Portugal, Denmark, and Sweden; the latter department alone comprises upwards of 20,000 vols. The collection of Greek and Roman classics is choice and extensive; the same may be said of that of modern poetry and belles lettres; there is also a very considerable divinity collection, comprising many of very rare and valuable volumes: they have been much neglected in this library, and this department is insignificant. A collection of Spanish books containing nearly 3000 vols., was, in the year 1824, bought from a London bookseller at a very great expense. There is also a collection of MSS., by no means a large one; several of them are said to be important and available for Scottish history. They are, however, chiefly of local interest. In the year 1825 about 100 vols. of Icelandic MSS. were purchased from Professor Magnusson at Edinburgh. In the following year Mr. Erskine, late of Bombay, made a donation to the library of a few valuable Persian and Sanscrit MSS. There are also a few MSS. of Latin classics, but of no great importance. There is a beautiful MS. of the Hebrew Bible lately purchased. On account of the comparatively small space, which it is impossible to leave unoccupied, and placed in a very large room built about twelve years ago for the use of the Advocates, but subsequently bought by the writers to the signet, whose library is situated immediately behind, a new arrangement is being made for the better accommodation of the historical department. As far as concerns this department, the building will be unexceptionable in most respects; but the rest of the Advocates' Library is distributed in eleven rooms, being for the most part vaults or cellars of the ancient city-tower and parliament-house, in which the right of session is now held. Some of these rooms are completely dark, and lighted by lamps; others have only borrowed light, and only three are properly lighted. In addition to the rooms we have mentioned, there is a warehouse belonging to the Faculty of Advocates situated underground in the north-west corner of the Royal Exchange: amongst other things this warehouse contains a very valuable collection of German Dissertations, for the most part productions of distinguished authors, amounting to the large number of 100,000. The collection was bought at a cheap rate for the library by Sir William Hamilton, professor of history in the University of Edinburgh. The Advocates' Library is governed by five curators, of whom one goes out of office by rotation every year, and one is chosen in his stead from among the body of the Faculty of Advocates. Under the curators there are, a keeper of the library, an assistant keeper, and two or three assistants. When the funds of the Faculty had somewhat increased, by raising the fees of entrants, the Faculty during a considerable period set apart 100£ from the fees of each entrant, and placed the amount at the disposal of the curators. The average of entrants each year has been stated to be seventeen; and thus the annual income of the library has been increased to, along with some additional fees, amounted to 1780£. In the year 1728 this system was altered, and the treasurer of the Faculty was ordered to pay 560£ annually out of the Faculty's income to the curators for the use of the library. This system still continues.

As to ease of access, there is no public institution in Great Britain, and very few in Europe, managed with greater liberality than the Advocates' Library; but we ought in candour to admit that this is a somewhat equivocal compliment, for, surpising as it may at first, although it has become almost a sort of bazaar, or a common lounging-place for a number of idle people, the library has suffered very little in consequence. Any stranger arriving in Edinburgh, with or without introduction, is admitted with voluntary fee required for habitually resorting to, and reading in the library. Even borrowing of books is subject to very slight restriction. Each advocate enjoys the privilege of borrowing twenty volumes (formerly twenty-five) at a time; if he wishes to favour an individual, who is not a member of the Faculty of Advocates, with the loan of a book, he must to sign the initials of his name in the journal or receipt-book: there are two hundred Advocates residing in Edinburgh, and as they are, almost without exception, remarkably liberal in lending books, it is in that city by no means difficult to obtain a free use of a very extensive library.

Of the librarians or, as they are called in Scotland, 'Keepers of the Advocates' Library,' the two first only deserve to be mentioned as men of literary attainments, viz., Thomas Ruddiman and David Hume. The great philosopher and historian succeeded Ruddiman in the year 1787, but died in 1795, and was pleased with his situation. The place of assistant-keeper of the Advocates' Library was, in the year 1825, offered to the eminent philologist, the late Professor Rask, of Copenhagen, with a salary of 50£. A year was offered and declined. It was likewise offered to several other persons, amongst whom was Professor Benecke, of Göttingen. While the court of sessions sits, the Advocates' Library opens at nine o'clock in the morning; and shuts at four o'clock, during which period it is open from ten till four.

ADVOWSON. The right of presenting a fit person to the bishop, to be by him instituted to a certain benefice within the diocese which has become vacant. The person enjoying this right, is called the patron of the church, and the right itself is termed patronage. It would be difficult to conceive that it would be liable to be misused by the intrusion of improper persons into the church, if the law had not provided a check upon abuse, by giving to the bishop a power of veto. He might, by a veto, prevent the presentation of any person, who he was satisfied was not competent for the cure of souls. This ground of his rejection, is, however, not purely discretionary, but is examinable at the instance, either of the clergyman presented, or of the patron, by process in the ecclesiastical and temporal courts. [See DOLPH QuERELA.]

According to the best authorities, the appointment of the religious instructors of the people within any diocese formerly belonged to the bishop: but when the lord of a manor, or other considerable landlord, was willing to erect a church, and to set a clergyman there, he was usually provided with a sufficient portion of land or tithe for a perpetual endowment of it, it was the practice to give to the founder and his heirs, in acknowledgment of his beneficence, the right of nominating his successor. The right of nominating a person in holy orders to be the officiating minister of a parish, as often as a vacancy occurred, is only a small part of the spiritual and canonical qualification of the nominee which was reserved, as before, to the bishop.

This seems to be the most satisfactory account of the right of patronage or benefices and benefices: and it corresponds with many historical records still extant, of which examples may be seen in Selden's History of Tithe. It also serves to explain some circumstances of frequent occurrence in the division of parishes, which might otherwise appear anomalous or unaccountable. Thus the existence of detached portions of parishes, and of extra-parochial precincts, and the variable extent and capricious boundaries of parishes in general, all indicate that they owe their origin rather to accidental and private donation, than to any regular legislative measure from the ecclesiastical establishement.

Hence, too, it is frequently observable, that the boundaries of a parish either coincide with, or have a manifest relation to, manorial limits. The same connexion may, perhaps, have suggested itself to those who have had opportunity of noticing the numerous instances to be seen in different parts of England, in which the parochial place of worship is closely contiguous to the ancient mansion of its founder and patron, and within the immediate inclosure of his demesne.

As an illustration of the respect inculcated in early ages to the patron of a church, we find that the canons of the church permitted him alone to occupy a seat within the church or choir; at a time when that part of the building was partitioned off from the nave and reserved for the exclusive use of the clergy. [See Kennett's Paroch. Antiq. Glossary, tit. 'Patronus."

An advowson which has been immemorially annexed to a manor, or to other land, is called an advowson appendant.
and is transmissible by any conveyance which is sufficient to pass the property in the manor or land itself. It may, however, be detached from the manor, and is then termed an advowson in gross, after which it can never be re-attached, so that the bishop has no power to grant it again. An advowson is regarded by the law in the double light of a temporal property, and a spiritual trust. In the former view, it is a subject of lawful transfer by sale, by will, or otherwise, to another person, and devolves to the heirs of the debtor of the patron. It may be alienated for ever, or for a certain term of years; or the owner may grant one, two, or any number of successive rights of presentation on future vacancies, subject always to certain restrictions imposed by the law for the prevention of corrupt and simoniacal transactions.

On the other hand, the spiritual trust which is attached to this species of property is guarded and enforced by very jealous provisions. We have already seen, that the appointment of a duly qualified incumbent is secured, as far as the law can secure it, by requiring the sanction of the bishop to his admission; and although this sanction is, in fact, very rarely withheld, yet it cannot be doubted that the existence of such a check is essential to the well-being of the church. To prevent the chances of such a danger, the immediate right to present is absolutely inalienable, as soon as a vacancy has actually occurred; and on a similar principle, a purchase of the patronage is not recognized to be a sale of the patronage of the incumbent is equally prohibited. [See Simony.]

We have seen, that when the proprietor of an advowson exercises his patronage, three persons are immediately concerned: the proprietor, the clergyman who is presented, and (in the language of lawyers) the patron, the clerk, and the ordinary. The presentation is usually a writing addressed to the bishop, alleging that the party presenting is the patron of a church which has become vacant, and requesting the bishop to admit the individual selected into that church, with all its rights and appurtenances. A period of time, limited to twenty-eight days, is then allowed to the bishop for examining the qualification and competency of the candidate, and at the expiration of that time, if he sees fit, he may appoint his own minister, and in default of his appointee, he may present the same, or any other person, as the bishop may select. And as there is no other law for the prevention of corrupt and simoniacal transactions.

It sometimes happens, that two of the three characters of patron, clerk, and bishop, (or ordinary,) are united in one person. In such cases, the bishop himself is entitled to the benefice; in which case it is evident, that presentation is superfluous, and institution alone is necessary. The bishop is then technically said to collate the clergyman to the benefice, and the advowson under these circumstances is said to be collative. So the title of patron in his own right is in effect extinguished by the bishop he cannot regularly present himself, yet he may pray to be admitted by the bishop; or he may transfer to another the right of presentation, pro hac vice, before the vacancy occurs, and then procure himself to be presented.

Another instance in which the patronage and the presentation are often found united is in appropria tions, where, by the concurrence of all parties interested, the advowson, together with the church, its revenues and appurtenances, have been conveyed to some ecclesiastical body, which thus became both the patron and the incumbent of the living, and by whom the immediate duties of cure are devolved on a vicar, or a stipendary curate. The nature and different sorts of appropriations are treated of under that title.

There are instances of advowsons, the patronage of which have power to appoint an incumbent without any previous resort to the bishop for his aid or approbation. These are called donative advowsons, because the patron exercises a direct and unqualified power of gift, which may be exercised by the clerk selected by himself. The only check upon the conduct of the incumbent in such cases is the power of the patron to visit, and even to depose him, when the occasion demands it; and the right still residing in the bishop to pro- cess for the same against the minister in case of any ecclesi sical misdemeanour. It is the opinion of the most eminent lawyers, that donatives had their origin in the king, who has authority himself to found any church or chapel exempt from the episcopal jurisdiction, and may also, by special licence, enable a subject to do the same.

Sometimes the nomination is distinct from the right of presentation; thus, the power of an advowson may be granted to another the right to nominate a clergyman, whom the grantor and his heirs shall be thereupon bound to present. Here it is obvious that the person to whom the right of nomination is given is substantial patron, and the person who presents is merely the instrument of his will. So when an advowson is under mortgage, the mortgage creditor is bound to present any person who shall be nominated by the mortgagor.

It is sufficiently apparent that this species of property is coupled with a trust, in the faithful performance of which the public are deeply interested. If, therefore, upon the vacancy of a living, no successor, or an insufficient one, shall be presented, it is put under sequestration by the bishop, whose care it then becomes to provide for the spiritual wants of the parish by a temporary appointment, and to secure the profits of the benefice, after deducting expenses, until another incumbent shall be duly inducted. After a vacancy of six months, occasioned by the default of the patron, the bishop has the power to present laicorum, and if in default by him, it devolves to the archbishop, and from him again to the king as paramount patron; the period of six calendar months being allowed to pass in each case before the right is forfeited to the. The patron, however, is excepted from the general rule; for there right never lapses by reason of a continued vacancy, but the patron is compellable to fill it up by the censures of the ecclesiastical court.

When the incumbent of a living is promoted to a bishopric, it is thereby vacated, and the king, in virtue of his preroga tive, has a right to present to it in lieu of the proprietor of the advowson. This singular claim on the part of the crown appears to have grown up since the Reformation, and was a subject of complaint and discussion for several years, down to as late a time as the reign of William and Mary. It is difficult to reconcile it to any rational principle, although it has been urged by way of apology, that the patron has no ground to complain, because the king might, if he pleased, enable the bishop to retain the benefice, notwithstanding that it is granted by the grant of a commenda: so that the patron sustains no other injury than what may result from the substitution of one life for another. It is, however, certain that, by successive promotions, the crown may, in fact, deprive the patron of the possession of his right; and an indefensible system is known to have actually occurred wherein the patron of the metropolitan parish of St. Andrew was prevented by several such exerctions of the royal prerogative, from presenting his own living and discharging the duties of the archdeaconry; whereas the arguments in the case of the vicarage of St. Martin's, reported by Sir B. Shower, vol. i. p. 468.] So that, as was truly observed by the counsel in that case, the safest course that could be adopted by an unconscientious patron, with a view to the welfare of his own patronage, would be to present a clergyman whose qualities are not likely to recommend him to higher preferment.

The following cases may be selected as best illustrating the peculiar nature of this sort of property. If a man marries a female patron, and a vacancy happens, he may present in the name of himself and wife.

Joint tenants and tenants in common of an advowson must agree in presenting the same person; and the bishop is not bound to admit the presentation of either. Co-heiresses may also join in presenting a clergyman; and if they cannot agree in their choice, then they shall present in turn, and the eldest shall have the first turn.

When the patron dies during a vacancy, the right to present devolves to his heir; and in the case of a female patron, the instance is known where the patron happens also to be the incumbent, his heir, and not his executor, is entitled to present.

Where the patron is a lunatic, the lord chancellor presents in his stead; and he usually exercises his right in favour of his ward, the guardian or person who enjoys his property, he being the one who directs the pen is the real patron; but the court of Chancery would doubtless interfere to prevent any undue practice.
It is believed that the following table presents a tolerably accurate synopsis of the distribution of ecclesiastical patronage in this country.

| The Crown | 1048 |
| Bishops | 1301 |
| Deans and Chapters | 982 |
| Universities | 1247 |
| Other Collegiate Establishments | 6119 |
| Private Persons | 644 |

Total number of benefices in England and Wales: 11,348


ADVOWSONS, VALUE OF. The following plain rules for estimating the value of advowsons may be 

The bargains which are usually made with respect to advowsons are, either for the advowson itself, i.e., the right of presentation for ever, or for the right of presenting the next incumbent, i.e., the next presentation. In both these cases there may be circumstances peculiar to the living itself, which fall under no general rule, but which must be considered and allowed for in valuing the advowson as a property. For example, a curate may be necessary; the parsonage-house may be in a state which will entail expenses on the next incumbent; and so on. Again, the property itself is of a nature more likely to be altered in value by the act of the legislature than the fee-simple of an estate. The following rules, therefore, give the very highest value of the advowson, and any purchaser should think twice before he makes a bargain on any basis but those hereinafter given.

To find the value of the perpetual advowson of a living producing 100l. a year, the present incumbent being forty-five years of age, and money making four per cent, we must first find how many years' purchase the incumbent's life is worth, and then we should recommend the use of the government, or Carlisle tables, (See Annuities, in preference to any other. Taking the latter, we find the annuity on a life of forty-five at four per cent., to be worth fourteen and one-tenth years' purchase; but at four per cent. any sum to be continued annually for ever is worth twenty-five years' purchase. The difference is ten and nine-tenths years' purchase, or for 100l. a year, 10,904l., which is the value of the advowson.

In finding the value of the next presentation only, other things remaining the same, the seller will presume that the buyer means to make the best of his bargain by putting in the youngest life that the law will allow, that is, one aged twenty-four. The value of an annuity on such a life at four per cent. according to the Carlisle tables, is seventeen and eight-tenths years' purchase. And as we are giving the highest possible value of the advowson, omitting no circumstance which can increase it, we will suppose the next incumbent to come into a year's profits of the living immediately on his taking possession. The present value of the next presentation is the value of an annuity for 17½ years, beginning from the present year. The rule is this: take four per cent. of the value of the present incumbent's life, or 14½ x 14, which gives 1964; subtract this from 1, which gives 436; divide by 1 increased by the rate per cent., i.e., 1.04, which gives 0.19; add one year's purchase to the presumed value of the next incumbent's life, (17½) which gives 18½, multiply this by the last result, 419, which gives 764 419, or 768 nearly—the number of years' purchase which the next presentation is now worth—which, if the living be 100l. a year, is 7880l.

For the Carlisle Table of Annuities, see Milne On Annuities, vol. ii. p. 595. For the Government Tables, see Mr. Fulston's Report to the House of Commons, ordered to be printed 31 March, 1829, page 58, column 6.

ADYTUM, a Greek term signifying a place that may not be entered, and applied to the innermost and secret chamber of a temple.

In the ancient Egyptian temple, the Adytum is placed at the end of a series of propylaeum, porticoes, and vestibules, and surrounded by galleries and chambers, which afforded every facility for concealing the mysteries of the interior. In the temples of the Greeks there is nothing corresponding to the Adytum of the Egyptian temples, unless it be the chamber which, in the Parthenon at Athens, has been called the Treasury, but which is not commonly found in other structures of the same character. The temples of the Romans, also, are without obvious adyta, though the exhumation of Pompeii has discovered to us, in the temple of Isis there, a small chamber behind and under the altar and statue of the goddess, with means of secret access, from which probably the oracular responses were delivered. We may fairly conclude that something of the same kind existed wherever oracles were delivered and the deity was not supposed to speak through an inspired representative, as in the case of the Pythia at Delphi; but no discoveries have been made in the ordinary temples of the Greeks and Romans to confirm the opinion, beyond the instance we have just mentioned.

The 'most holy place,' or the Sanctum Sanctorum, the holy of holies, was the adytum of the temple of Solomon at Jerusalem, which may reasonably be believed to have been built in the form and after the manner of the temples of the Egyptians.

ACCIUM, a genus of minute parasitic plants belonging to the natural order Fungi, found in great abundance in this and other northern countries. Some modern writers it has been combined with Uredo and others; but it appears distinctly characterized by its peridium, or enveloping membrane, having a tubular form, and being altogether distinct from the cuticle of the plant on which it grows.

The species are universally parasitic upon the leaves, or flowers, or bark of living plants, where they are generated in showers. Their structure is of the same kind; consisting of nothing more than a little mass of excessively minute spores, or reproductive particles, much smaller than the finest sand, inclosed in a thin bag, of either a fibrous or reticulated structure, which in time becomes one, under which it lies, gradually assumes a tubular appearance, and finally bursts at the apex for the purpose of enabling the spores to escape.

A great many species are found upon the weeds and trees of Europe, varying in colour, size, and form. Of these the following are among the most common.

Acidi um cancellat um, the Pear Acidity (Pers. Synops).

[Acidi um cancellat um.]
Among them Fig. the state of Rome a matter of public interest, and they have nearly completed their office for the year. The article, "Acidum Berberidis, the Barberry Bight (Pars. Gynoma. 29. Greville, Scott. Crypt. Fl. t. 97)." The bright orange powder that contains this anthraquinone is known as barberry bark. It is well illustrated by Dr. Greville in his "Scottish Cryptogamic Flora". In that work, we find the following remarks on the popular opinion that barberry bushes blight corn. "This minute gastrorrhagia has given rise to the vulgar opinion, which has been propagated from the East to the West by Macedonia, that barberry bushes are extremely detrimental to fields of wheat. It is well known that the disease called the rust in corn is highly injurious: but the colour of the rust and that of the present plant constitutes the only similarity between them. They belong, in fact, to two different genera, and cannot propagate each other. I have, nevertheless, heard creditable people affirm that they have seen the corn fail for a considerable distance round a barberry bush, while it was strong and fertile in the rest of the field. If this is in reality owing to the barberry bushes blight corn, it is the same to some other cause than this parasitic plant." For an account of the species which really infects corn, see Puccinia graminis. Fig. 2 is the appearance of Acidium Berberidis to the naked eye. Fig. 4 is a patch of the peridia very highly magnified; Fig. 5 shows the spores still more magnified.

AEDILES, from aedēs, a building; the name given to certain magistrates who presided over Rome. There were two number, two entitled curule aediles, and two plebeian. It is difficult to mark the limit between the duties of these magistrates. The former, however, must have been originally connected with the patrician order, and elected by the commonwealth. About the same time that the two number, two entitled curule aediles, and two plebeian, one of those kings had been, viz., the purple robe called the toga praetexta, and the chair ornamented with ivory, or sella curulis. They had the care of the temples, baths, porticoes, aqueducts, sewers, and roads of the city. They presided at the religious ceremonies, of which theatrical exhibitions formed an important part; and, in performing this duty, the aediles, under the republic, were often guilty of the most loathsome exactions, with the view of securing popularity, and thus paving their way to the higher offices of the state. The plebeian aediles were, as their name imports, specially magistrates of the plebes or commonalty. They were subordinate to the tribunes of the plebes, and acted as judges in such causes as were referred to them by their superiors. The temple of Ceres, which constituted the treasury of the commonalty, was under their peculiar guardianship. They here received the fines paid for offences against the plebeian magistrates, and made a distribution of bread among the poor of Rome. In the north-east corner of the temple, the institution of the Flora, the regulation of the markets, and the superintendence of the corn trade, the examination of weights and measures, the registration of cordwainers, and perhaps the general management of all the affairs of police in Rome and the suburbs, they had, of course, their courts for inquiring into and punishing offences connected with their office. The curule aedileship was the second in the series of honours through which the Roman candidate proceeded to the consulship; and the laws required an interval of a year between aedileship, before any one could be a candidate for the aedileship. The title of aedile was known also in the municipal towns of Italy. These species of Aegina are of different native species, as well as the history and description of the animal which produces them, we must refer to the articles Bzezoar and Goat.

AEGEAN SEA is the name given by the Greek and Roman writers to that part of the Mediterranean now called the Archipelago. We shall here refer to it, for the sake of reference to the terms used by the classical writers when they allude either to the sea itself, the coasts that bound it, or the islands that it contains. The Aegaean Sea was bounded on the north by Asia Minor, on the east by the Great Campe, and on the west by the Saronic Gulf. The shores of the Aegaean are, on the east by Asia Minor, and comprised between the 41st and 36th degrees of latitude. The origin of the name is doubtful; geographers derive it from different islands, or places on its shores, as Aegae, Aege, Aegeus; or, more fabulously, from Aega, Queen of the Amazons, who punished there; or from Aegeus, the father of Theseus, who threw himself into it; or it may be derived, according to some, from the Greek word ely'is, a squall, from the violent and sudden storms which render it dangerous to sailors even in the present improved state of nautical science. The true origin of the name is unknown, and we should rather refer it to old King Aegeus than to any one else. It contains numerous islands, many of which are undoubtedly of volcanic origin. Of these the more southern are divided into two groups; one called the Sporades, or scattered islands, lying along the coast of Caria and Ionia; the other called the Cyclades, or circling islands, lying off the coasts of Attica and Peloponnese, from which they were separated by the Myroan Sea, and occupying a large part of the western Aegaean. The island of the Aegae, lying about Icaria, one of the Sporades, was also called the Icarian Sea. The northern part of the Aegaean contains fewer, but larger islands; the principal were Chios, Lesbos, Lemnos, Thasos, and Euboea. At the north-east corner, there are the same islands, except Marmora) by the narrow strait called the Hellespont, now the Dardanelles; the Turks call it the White Sea, to distinguish it from the Black Sea; it must not, however, be confounded with the White Sea in the north of Russia. [See Archipelago.]

AEGINA, an island in the gulf of E'gina, which retains its ancient name, with a very slight alteration. The 37° 47' of latitude passes through the northern extremity of the island; its extent may be estimated by the scale attached to the accompanying plan, from Captain Copeland's recent survey.

Strabo reckons Aegina to be 180 stadia in circumference, which, allowing nine stadia to a mile, will fairly considerably short of the truth, if we reckon the numerous windings of the coast. The western part of the island is a plain, which, though stony, produces corn. A hill, called Mount St. Elias, or Oros, with its offsets, occupies the southern part of the island, and is considered as the sanctuary of Aegina. A temple of Juno, eminences, has the remains of the ancient temple of Jupiter Panhellensius, as it is commonly called. In the north-west part of the island there stand two columns, one of which is entire, marking the place of an ancient temple whose columns are unaccounted. To the south of these columns the site of the ancient town is distinctly shown by the remains of two artificial harbours, which have been formed, as was usual with the Greeks, by projecting molels, with a narrow entrance between them. The walls on the land side, which were about ten feet thick, can be traced through their...
whole extent. There were probably three principal gates, the central one leading to the eminence in the eastern part of the island, on which the remains of the ancient temple stand. This temple is situated amidst pine trees, on the summit of a mountain, and separated by a narrow valley from the hill on which the modern town of Eghina stands. The position of this edifice is striking. Placed in the middle of the gulf of Eghina, it offers a panoramic prospect of the whole bay. Athens and its Acropolis are eighteen miles distant N.N.E., and the town of Corinth thirty-seven miles to the N.W. (Leake's Morea, 3 vols. 8vo. 1830.)

On casting our eyes on this little island, we should almost doubt the stories of its ancient importance, if they were not as well authenticated as any part of remoter history. We know nothing worth mentioning here of its inhabitation before it was occupied by the Achaei (Homer's Iliad, ii. 552), and afterwards by some Dorians from Argos—a nation that spread over a large part of the Peloponnesus, and sent out colonies to Italy and Sicily, and formed in fact one of the chief component parts of that people known to general history under the name of the Greeks. Like some small republics of modern times, such as Genoa and Venice, Eghina owed its importance entirely to its naval superiority. It would however be difficult to see how so small an island could become a formidable naval power if we did not know that its approach was rendered difficult by numerous rocks, and that at an early period it became a place of security for persons and their property. It is impossible that a place like Eghina could ever rise to importance except as an emporium or mart, which offered the advantages of security and a central position. Wealth being once introduced, would, by industry and perseverance, be increased, and a navy once established, would perpetuate itself by the profit derived from a carrying trade. As early as B.C. 563, in the reign of Amasis, before any town of European Greece had acquired great commercial wealth, we find that Eghina had a factory established in Lower Egypt for its merchants, which is exactly the same kind of thing that we have seen so often repeated in modern times, where the commercial towns of Europe have, by force or fraud, succeeded in establishing themselves in remote countries. In this century, according to the testimony of Aristotle, this little spot contained 470,000 slaves. This number is certainly extravagant; but we may consider it as indicating a very large population. Eghina was then one of the great centres of the Mediterranean commerce, and in all probability a considerable slave market.

When Xerxes was on the banks of the Dardanelles in the year B.C. 480, with his enormous army, previous to crossing over into Europe, he saw Herodotus, the corn-deal sailing by, carrying the harvests of the fertile regions on the Black Sea to the Peloponnesus and Eghina. Eghina had very early a silver coinage, and many of its coins still exist, though we are not aware what is the remoted epoch to which they belong. The most common type or figure on one side is the sea-tortoise. The story is that Pheidon, King of Argos, who also possessed Eghina, made a mint of silver in that island about B.C. 894; and it certainly was a tradition among the Greeks that, as early as that period, Eghina was the centre of an extensive commerce. 

[Front Elevation of the Temple of Eghina, as restored.]

**Eghina Temple.** The temple of Jupiter Panhellenius, before referred to, or the Panhellenium of Eghina, as it is often called, was of the Greek Doric style of order, and of the arrangement which is technically termed hexastyle, peripteral, and hypethral; that is, it had a portico of six columns at each end, and ranges of twelve columns along each side, the columns on the angles being squared both in flank and in front, and if it was a hexastyle temple, it was made up of six fluted nave and aisles, by two ranges of columns, the space between which was uncovered. The cell or body of the temple was a regular parallelogram, inclosed by four walls; a door was given to the interior by five in the cross-walls, from inner porticoes formed by the longitudinal walls, the projecting shoulders of which are termed antae, and between which two columns stand, thus forming what are distinguished as the pronaoi and opisthodomus. The columns of the temple were marble, and nearly as far from the walls as they do from each other; and on the fronts,
the space intervening between the outer columns of the por-
ticus and posticum (to use the technical terms by which the front and rear-front porticoes are respectively distinguished), and the inner ones and their anteis, of the pronaois and opisth-
athomus respectively, is somewhat more than a single in-
tercolumniation. Thus, a kind of gallery was formed on the floor of the peristyle around the body of the temple, and this was raised by three deep steps from a nearly level platform called a peribolos, in the midst of which the temple stood; this was partly hewn out of the native rock, and partly constructed, and a low wall or parapet girted it on all sides. The temple fronted east and west, the east being the en-
tance front before which the peribolus extended itself more than 100 feet, while on the west it was not more than 50 feet wide. The extreme length of the temple in front, mea-
sured on the face of the lowest step of the regular stylo-
bate, is 49 feet 10 2 inches, and in flank 100 feet 7 7 inches; and on the floor of the peristyle, that is, at the edge of the upper step on which the columns rest, the corresponding dimensions are, 45 feet 2 2 inches, and 96 feet. The columns of the peristyle are a very small fraction less than 3 feet 2 9 inches in diameter, and including their capital, they are 17 feet 9 4 inches in height; the en-
tablature, without the crowning moulding of the pediments, is rather more than two diameters of a column in height, and the stylobate is 3 feet 7 7 inches high, or an eighth more than one diameter. The height of the tympana of the pediments to the soffit of the corona was, as nearly as it can be determined, one diameter and four-fifths, and that of the pediments to their apices, two diameters and one-sixth, making the whole height, from the floor of the peribolus to the summit of the pediments, 35 feet 8 inches, above which the acroterion rose nearly one diameter, or about three feet more. Both the tympana were highly enriched with sculpt-
tures; but it does not appear that they were the medallion metopes of the outer entablature, or on any part of that of the inner ordination of the pronaois and opisthathomus, as in the cases of the Parthenon and the temple of Theseus at Athens. It is true that Dr. Chandler discovered a sculpt-
ured fragment on the west of the pediment, which, however, he fancied to have belonged to one of the friezes; but later examinations make it probable that what he found belonged rather to the sculptures of the eastern pediment. The columns of the Panhellemion are within a small fraction of five diameters and a half in height, and they diminish with an imperceptible entasis, in the length of the shaft, considerably more than one-fourth,—from 3 feet 2 9 inches to 2 feet 4 6 inches. In the peristyle, and in the pro-
naois and opisthathomus, the columns, while those of the inner hypisthral ranges had but sixteen. The annexed plan and elevation will convey a clear idea of the arrangement of the structure. The darker tint on the plan indicates the portions of the walls which remain, or whose places are not obliterated, and also the sites of the still remaining columns; the lighter tint shows the restora-
tions. The ends of the walls forming the anteis are restored from analogy, and from displaced fragments discovered among the ruins;—the places of the deficient columns of the per-
stile admit of no doubt, and those of the internal ranges are tolerably certain. Only one column remains of the internal ranges, but this determines the diameter and the distance from the walls of all the rest, and consequently the breadth of the hypisthral part or nave; but the number of columns in each range, and therefore their distances from each other, cannot be determined with certainty. However, the author-
ity of the second volume of the Antiquities of Ionia would decide this, as its authors profess to have ascertained the position of five of the columns of these inner ranges, of which three were in continuous succession. The principal front of the temple would be sufficiently indicated by the greater depth of the inner portico or pronaois, even if the greater extent of the peribolus, and the superior merit of the sculptures at the east end, did not determine it. The meaning of the rectangular blocks of stone in the opisto-
tathomus, and of that within the cella in the hypisthral range by the western door, is not obvious; nor does any reason offer itself for the place of that door being out of the middle, though its narrowness may mark its inferiority. For, however, these irregularities and discrepancies may have been occasioned at some period during the middle ages, when, according to the belief of some writers, the old ruined temple was used as a church. A more graduated ascent than the regular gradus to the floor of the peristyle has been made, for more convenient access to the eastern portico; for it may be noticed that the steps of the stylobate are so deep as to make them inconvenient for use; probably, however, this too was the work of the later period before re-
furmed to. The elevation here given is applicable to either of the two fronts, though the sculptures indicated are those of the western pediment. The structure was built of the fine white limestone of the island, but through long ex-
posure it has assumed a rich brown colour; the tiles in cov-
ering were of the same material, but the sculptures ap-
pear to be of Parian marble. It may be remarked, too, that the surfaces of the tympana were painted of a light-blue colour to give the statues greater relief; and the statues themselves were also partially painted for the same purpose. The mouldings also appear to have been painted.

The style of the architecture of the Æginetan Panhel-
lemion would of itself indicate an earlier date than that of the Athenian temples of the age of Pericles, but it would hardly lead us so far back as the early part of the sixth cen-
tury before Christ; though it is not at all inconsistent with that period, which for another reason has been assumed for it. Some antiquaries have referred the execution of the sculptures which belonged to the Panhellemion to the latter part of the same century; but there is nothing in the reason-
ning by which they come to that conclusion that will not
admit of these sculptures being referred to a remote period. The great diminution of the columns; the great comparative depth of the capital, and its peculiar boldness of character, are the great comparative heights also of the stylobate and entablature, carry it back from the date of the Parthenon and of the style and the style of that period; while the height of the columns in proportion to their diameter, and the beauty of contour of the mouldings, and of other details, sufficiently remain of the temple. That the sculptures which decorated the Pantheon, the national temple of the Eginetans, furnished us with undoubted specimens of Eginetan art, and of that period too, as some suppose, in which the most celebrated Eginetan sculptors flourished. The latter conclusion has, we think, been too hastily adopted, that the sculptures of the Pantheon are of great beauty and merit, and are for many reasons highly interesting, will be admitted by all; but that they are of the class and date from which the school of Eginas derived its celebrity, may fairly be denied.

These principally consist of perfect statues, or statues in the round as they are termed, somewhat smaller than life, of men armed with spears, swords, shields, and bows; the bowmen have quivers of arrows suspended from their waists; most of the figures are helmed or bonneted, some with greaves on the legs, and two or three with armour on the body, or close-fitting garments on the body and limbs; but for the most part they are naked, except the head, and all are either engaged in active combat or have fallen from the effects of it. The female combats. Besides the helm and draped female figure, with a spear and a shield in her hands, and the helmeted head of another, evidently belonged to the groups. These were all so distributed on the ground with reference to the temple, and are of such peculiar sizes and times to the heavy and another, and in the places they occupied, that there appears to have been no great difficulty in determining their original arrangement in groups, after the fragments into which many of the figures were broken, were once brought together; especially as the faces were not enclosed the pictures of the faces of the figures were evidently well-determined, and thus assisted materially in fixing the relative positions of the parts composing the groups. Thus, the perfect female figure, evidently a statue of Minerva, standing upright and in full face, occupied the central portion under the highest part of the tympanum of the western pediment; and the combatting warriors of that end arranged themselves on her right and left, in attitudes upright and advancing, kneeling, stooping and falling, until the inner acute angles terminated in the wounded and recumbent condition of the opposite figures. The whole, however, for action, while the battle, of which she appears to be the umpire, rages around her. Of this picture or group, the arrangement is so fitting and complete, and the action so perfect, that there is no essential portion of it undiscovered. But unfortunately it is not so with the group of the eastern or principal front; a few only of these figures can be restored, and it is only from the analogy afforded by the western group, that their numbers in that group can be ascertained. The faces, however, to which has been made out, the persons seem to be nearly, if not quite, identical, and another period of the same appearance to be represented. The helmeted female head is that of Minerva again, and Mr. Cockrell restores her figure as in the act of raising her spear and extending her vest, as if to stop the contest, or to protect the falling. The exact subject, or subjects intended by these groups, is not known; though all the critics who have offered opinions seem to agree that they represent some actions of the distinguished figures of the Trojan war, Telemachus, the mythological founder of the nation. Colonel Leake's opinion, as given by Mr. Cockrell, Journal of Science and the Arts, [No. 12, p. 334—Note] is that they represent the period of the combat of Bellerophon with the Chimaera, from the Iliad, in which Ajax (one of the Achaians) and Hector were the principal combatants. That something connected with the Trojan war is intended, seems very evident, from the Phrygian bonnet worn by one of the warriors; and the greaves on the legs of those who may be supposed to be Greeks, in the eastern group, especially, and the absence of this covering on the figures of the opposite party, seem to intimate clearly that some national difference is intended. Thiersch's opinion, is that the group on the eastern pediment represents the expedition of Telemacon, son of Aias, and Hercules, against Laomedon, king of Troy. The author considers to be the representation of
Hercules. The other group, he thinks, may represent the death of Achilles, and the struggles of Ajax to save his body from the Trojans. (See Thiersch's History of Greek Sculpture, p. 249, note.)

The difference in the combination of sculpture and architecture more admirable than the manner in which the various actions and attitudes, in the most perfect group of the figures, have been adapted to the situations which they occupied; and this too, without the slightest appearance of confusion; though it is of the same general idea, and in perfect keeping with the design of the subject, and the character of the architecture. The energy of action, the grace of attitude, and the truth of proportion displayed in those works, are also admirable, and the expression of many of the figures is not a little refined. The Parthenon, adorned with the works an architectural character, whilst the countenances, the hair, and the draperies, clearly betoken their near approach to, if not absolute connexion with, the archaic period. The faces are entirely devoid of expression, the hair is formally laid in tiers with convoluted ends, and the draperies, though not devoid of grace, are heavy and monotonous: to use the words of the writer before referred to in the Journal of Science and the Arts, p. 249, describing the sculptures of the Parthenon, "all the features were thick, the nose is short but angular and prominent; the eyes are protruded, the forehead is flat and retreating, and the chin is remarkably long and narrow. The draperies, though rather hollowed, the lips are thick, the mouth is short but angular and prominent; the eyes are protruded, the forehead is flat and retreating, and the chin is remarkably long and narrow."

Now these peculiarities which could not have existed in the works of men whose names are mentioned with those of Phidias and his contemporaries and immediate successors; but they clearly mark a more remote period. This is in the year 1659: a bust of a Jupiter seated, an eagle on a thunder-bolt, with an inscription, COL. AEOL. CAP. (See Vallant's Numismata.)

LIKE A CHILIA, which is one of the names of Hadrian; and Chilias, from the temple of Jupiter Capitolius, which was built on, or near, the Holy Mount.

It would seem, according to some opinions, that the attempt to establish a Roman colony in Jerusalem, and the introduction of heathen rites into the city, was the cause of the disturbances which led the emperor to treat Jerusalem as a conquered city and a new town, or a part of the holy places, led, probably, to the wars in which Baruchusus headed the Jews, and which were as destructive to the nation as their former resistance to Titus. The name of Chilias Capitolina continued in common use among the Greeks and Romans till the time of the Christian Emperors. (See Manner, Syr. p. 216. Schlosser, Universal History, vol. iii. part 1.)

Several coins of Hadrian still exist, which refer to the colony established by the Emperor. They bear on one side the head of Hadrian, and on the other, a Jupiter seated, an eagle on a thunder-bolt, with an inscription, COL. AEOL. CAP. (See Vallant's Numismata.)

CHILIA NUS, CLAUDIUS, a Roman citizen, and a native of Pannonia, and one of the princes of the third generation of the greatest emperors. As Cicerio, Atticus, and many other Romans, he made himself so completely master of the Greek language, as to write it with ease and correctness. There is extant a work of his and fourteen books entitled, Peculiarities of the Greek and Romans, which is a compilation of extracts made by the author in his extensive reading. This work may be considered as one of the earliest collections of ANA. The value of it does not consist in what the compiler has himself written, but in the literary and scientific means of preserving it. An edition of this work was published at Paris in 1805, 8vo. with Herodules of Pontus and Nicolaus of Damascus, by the learned Greek Corly. There is a French translation of Athien's work, by M. B. T. Du Cin, Paris, 1779, 8vo.

Another work of Athien's, in sixteen books, also written in Greek, is entitled On the Peculiarities of Animals. Though the author cannot claim the merit of being a scientific naturalist, like Aristotle, he has collected a number of curious facts, which he had collected from such works as he had read. Each of the sixteen books is subdivided into small chapters or sections, like the Miscellaneous History, Some critics are of opinion that the two works belong to different authors. (See Spott. Lit.) J. G. Schneider published an edition of the work on animals in 1784; but the latest edition of the Greek text is by F. Jacobs, Jena.

We are not aware that there is any English translation of this work. There are also twenty Greek letters extant attributed to a person of the name of Athien.

CHILIA NUS, another person of this name, wrote a book on Tactics, which he dedicated to the Emperor Hadrian. There are several editions and translations of this work. A German translation, by H. Baumgartner, appeared in his complete collection of the Greek writers on military tactics, Frankenthal and Mannheim, 1779, 4to. There is a French translation by B. de Bussy, Paris, 1757, 2 vols. 12mo. (Scrib.)

AMELII, the name of a patrician gens or clan in ancient Rome, who pretended to derive their origin from Mamercus, the son of Pythagoras. Of the different families included in this gens, the most distinguished were the Pauli, or the Paulus, and the Titii, the Lupi, the Lepidii, the Scabinii of the Old Testament, part of which was printed at Oxford, in 1638: 3. A charge to his clergy, in articles, commonly called his Canons, which was published, by Spelman, in the first volume of his English Councils: 4. Two volumes of Saxon Homilies, translated from the Latin fathers: and 5. A Saxon Grammar in Latin. There were, however, other Saxon ecclesiastics of his name, and it has been doubted if all the works enumerated were the productions of the Archbishop of Canterbury.

EUGENIUS. [See EUGENIUS.]

EGYPT. [See EGYPT.]

CHILIA CAPITOLINA, a name given to Jerusalem in the time of the Emperor Hadrian, who, finding the Jews very restless and unruly subjects, treated them as revoluted people, and took possession of the capital, Jerusalem, from the Jews were excluded under pain of death. Some Roman colonists were sent to this new-colonised city, and the name of Chilias Capitolina; Chilia, one of the names of Hadrian; and Capitolius, from the temple of Jupiter Capitolius, which was built on, or near, the Holy Mount.

The name was given by way of contempt, and it would seem, according to some opinions, that the attempt to establish a Roman colony in Jerusalem, and the introduction of heathen rites into the city, was the cause of the disturbances which led the emperor to treat Jerusalem as a conquered city and a new town, or a part of the holy places, led, probably, to the wars in which Barcochbaus headed the Jews, and which were as destructive to the nation as their former resistance to Titus. The name of Chilias Capitolina continued in common use among the Greeks and Romans till the time of the Christian Emperors. (See Manner, Syr. p. 216. Schlosser, Universal History, vol. iii. part 1.) Several coins of Hadrian still exist, which refer to the colony established by the Emperor. They bear on one side the head of Hadrian, and on the other, a Jupiter seated, an eagle on a thunder-bolt, with an inscription, COL. AEOL. CAP. (See Vallant's Numismata.)
public office, was appointed one of three commissioners to conduct a colony to Croton, in the south of Italy, a city with which he might claim some connexion on the ground of his surname and the Ithaka connection. Two years after, at the age of about thirty-six, he was elected a curule aedile in preference, if we may believe Plutarch, to twelve candidates of such merit that every one of them became afterwards consul. His self-interest was distinguished by many innovations and accomplishments into the advantage of the country and its neigh-
bourhood. The following year (191 B.C.) he held the office of praetor, and, in that capacity, was governor of the south-western part of the Spanish peninsula, with a considerable force under his command. The appointment was renewed the following year, by which he acquired power; but we do not find him yet to have procured his consulate, which was accompanied by double the usual number of lictors. In an engagement, however, with the Lus-
tani, 6000 of his men were cut to pieces, and the rest only saved behind the works of the camp. The victory was retrieved in the third year of his government by a signal defeat of the enemy, in which 18,000 of their men were left upon the field. For this success a public thank-
sgiving was voted by the senate in honour of Aemilius. Soon after, he was enrolled among the consuls, and was appointed, in his absence, one of the ten commissioners for regulating affairs in that part of western Asia which had lately been wrested by the two Scipios from Anti-
ochus the Great. Aemilius was a member also of the college of censors. In an early age he had acquired the means of fixing the period of his election. As a candidate for the consulsiphip he met with repeated repulses, and only attained that honour in 182 B.C., nine years after holding the office of praetor. During this and the following year he commanded three armies, and was chosen consul in Lutici, and the complete reduction of a powerful people called the Ingani (who have left their name in the maritime town of Albenga, for-
erly Alibium Inganum). A public thanksgiving of three days was immediately voted, and, on his return to Rome, he had the honour of leading the triumph. Ten years later he lost sight of Aemilius, and at the end of this period he is only mentioned as being selected by the inhabitants of Further Spain to protect their interests at Rome, an honour which he declined, and added to his influence. It is at this period (171) that the last Macedonian war commenced, and though the Romans could scarcely have anticipated a struggle from Perseus, who inherited from his father only the shattered remains of the great Macedonian monarchy, yet three consuls, in three successive years, were more than baffled by his arms. In 168 a second consulsiphip, and with it the command against Perseus, was entrusted to Aemilius. He was now at least sixty years of age, but he was supported by two sons and two sons-in-law, who possessed both wealth and authority. By Papiria, one of the first families in Rome, he had two sons and three daughters. Of the sons, the elder had been adopted into the house of the Fabii by the celebrated opponent of Han-
nibal, and, consequently, bore the name of Quintus Fabius. The name of Julius was prefixed to that of Emilius, to mark the con-
ginonal connexion with the house of the Aemilii. The younger, only seventeen years of age at this period, had been adopted by his own cousin, the son of Scipio Africanus, and was now called by the same name as his grandfather by adoption, viz., P. Cornelius Scipio, with the addition of Aemilius, as in his brother's case. The careless reader of Roman history often confounds these two persons, and the more so, as the younger also eventually acquired the same title of Africanus. By the marriage of Emilius, his eldest daughter was given in law to Marcus Porcius Catus, son of the censor, and to Aemilius Tubero. These four young men accompanied Aemilius to the war in Macedonia, and all contributed in a marked manner to his success. Perseus was strongly posted in the ravine near the town of Pidna, and it was difficult to get at the camp of the enemy. Emilius made good his passage through the mountains, and the two armies were soon in view of each other near Pidna. On the evening before the battle, an officer in the Roman army, named Suspius, obtained the consent of his company to address the troops upon a point which was of no little im-
portance in those ages. An eclipse of the moon, it was known to Sulpicius, would occur that night, and he thought it prudent to prepare the soldiers for it. When the eventful moment arrived the soldiers went out into the fields, and left the moon in her labours with the usual clamour of their kettles and pans, nor omitted to offer her the light of their torches; but the scene was one of amusement rather than fear. In the Macedonian camp, on the other hand, superstition pro-
duced the usual effect of horror and alarm; and on the fol-
lowing day, the two armies, as before, met upon the field. The new-ly formed city of Pidna has been fixed by the eclipse to the 22d of June. Livy, indeed, assigns it to a day in the early part of Sep-
ember; but it is not impossible that the difference may be owing to some irregularity in the Roman calendar, which, by the way, was regulated by the prevention of eclipses, so widely from the present distribution of the year. The Ro-
mans were careful in recording the day of every important battle. After reducing Macedonia to the form of a Roman province, by which this country was returned to Rome. But this did not prevent the Romans, who have never been as free from the feelings of the nights. In a single hour the hopes of Perseus were destroyed for ever. The monarch fled with scarcely a companion, and on the third day reached Amphipolis.

Then he proceeded to Samothrace, where he soon after

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since the Julian family, and among them the imperial house of Caesar, boasted their descent from the former. Such is a sketch of the chief traditions about this reputed Trojan prince and his settlement in Italy. [See Niebuhr's Roman History, vol. i., p. 176, and his Latin translation.]

The only allusion in Homer to the history of Æneas after the Trojan war is, a prediction that he and his children shall reign for centuries over the Trojans: nothing is said of the place of their settlement. Some have supposed that he remained in Italy, and that the Idyll of his emigrating to Italy is entirely destitute of foundation.

ÆNEID. The most celebrated epic poem of antiquity, after the Iliad and Odyssey. It was written by Virgil in the tenth year of Augustus. It is a simple narration of Æneas after the siege of Troy; his arrival in Italy, and his adventures previous to his marriage with Lavinia, with his final establishment in Latium. The poem, however, does not carry its hero so far as this, but closes with a single combat between Æneas and Turnus, and the death of the latter. In some respects Virgil has deviated from the legend related in the article Æneas. He has multiplied the Trojan ships and increased the number of the Trojans; he has carried his hero to Carthage, though we do not know whether Æneas was preceded by the mariners after the battle, or as the result of his adventures through Spain. He has made the death of Turnus precede the marriage of Æneas and the foundation of Latium, and has allowed Lavinus to survive, instead of making his daughter wed Turnus. These changes are due to the necessity of the twelve books, of which the first six are occupied in relating the wanderings of Æneas, and seem to be modelled on the Odyssey; the last six contain his descent into Italy, and the war which ensued between the Trojans and the natives, and are derived from ordinary contemporary records of ornament as well as in the general notions of his work, Virgil has borrowed largely from Homer. This poem was written later than his other works, the Eclogues and Georgics. It was commenced about the year a.d. 724, or a.c. 29, but seems to be something more remote than it.

The Æneid, therefore, may be regarded as one of the complex or ornamented modes of composition, that is to say, one of those which do not merely appeal to the apprehension, but excite and satisfy other and more congenial aspirations.

In very ancient times, accordingly, the Æneid was a common and favourite medium for the conveyance even of truths of the highest importance. Formal composition in the earliest state of society, that it might be the better distinguished, naturalises something of the artificially artificial character; and the Æneid or riddle presented itself among other devices for that end. It had, besides, the peculiar recommendation of giving an air of mystery to the sentiment which it involved, and so making it appear to the observer more remote than it.

The Æneid differs from a definition or other direct statement, not in being false, but only in being obscure and misleading. The one makes something of what is not true, and the other of its application to the purpose of concealing that; but the words of a good Æneid, when properly understood, are as true as those of a good definition. It is also an indispensable quality of the latter, as well as of the former, that it shall be intelligible, in its whole import, only in one sense.

The object of a direct statement is to convey information; that of an Æneid is to exercise the ingenuity. The former, in its simplest and most legitimate form, has only to be conveyed in the latter. The Æneid, therefore, may be regarded as one of the complex or ornamented modes of composition, that is to say, one of those which do not merely appeal to the apprehension, but excite and satisfy other and more congenial aspirations.

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The Æneid was composed for the purpose of entertaining the reader, and the corresponding verb (αἰσθητός) always means to speak aenigmatically, according to our meaning of the word, or to speak with a certain degree of mystery and obscurity. In the progress of civilization and literature, it came to be felt that obscurity and difficulty were qualities, which, whatever pleasure they might convey to those who tried to master them, were inconsistent with all the higher and more appropriate objects of speaking and writing. Whether a Æneid be written in the capacity of the Æneid, whether it be to appeal also to the imagination and the passions, a style is good exactly in proportion as it is expressive, that is to say, as it conveys directly and completely the thoughts of the writer or speaker. The Æneid, therefore, the very end and nature of which is the reverse of this, instead of being an ornament, must be regarded as one of the worst faults of style. Whatever approaches towards the aenigmatic, is, for the same reason, a fault of writing—whatever figure, for example, is introduced in poetry or rhetoric more in order to surprise the reader by its ingenuity than for any other purpose. Amongst those writers who have vitiates their works by what may be called an aenigmatic turn of phraseology, Young is an instance, in The Night Thoughts, is a specific instance.

ÆOLIAN HARP, a musical instrument, the sounds of which are drawn from it by a current of air acting on the strings; hence it is named after Æolus, to whom in the heathen mythology is given the common of the winds. At the close of the last century, the Æolian Harp was brought forward in London as a newly-invented instrument; and Dr. Anderson, in a note to Thomson's Ode on Æolus's Harp, ascribes the invention of it to Mr. Oswald, who, in 1770, a composer of an organ, states that the properties are fully described in 'The Castle of Indolence.' However, it is possible that an instrument of the kind was very anciently known, for the Talmudists say that the Kinnor, or harp of David, sounded like the wind, and the description is thus given: 'The spirit of the invention in the form it now takes, is due to Athanasius Kircher, who, in his Musurgia Universalis, (lib. iii. 352) thus describes it: 'As the instrument is new, so also is it pleasant and easy,
construct, and is heard in my museum to the admiration of every one. It is silent as long as the window in which it is placed is drawn, but when it is opened, a sudden harmonious sound breaks forth which astonishes the hearers, for they neither perceive whence it proceeds, nor what kind of instrument is before them, for the sounds do not resemble that of a single string, and cannot be heard in the instrument, but may be heard some yards off. The instrument is made of pine wood, five palms long, (fifteen inches,) two broad, and one deep: it may contain fifteen or more strings, all equal, and of catgut. The method of tuning it is not, as in other instruments, by 3ds, 4ths, 5ths, &c. &c., but in the strings of the violin or in octaves, and it is wonderful that such different harmony should be produced from strings thus tuned.

A modern writer gives the following more detailed directions for the construction of the Eolian harp, and such as we know, from experiment, are better calculated to produce the intended effects. Let a box be made of as thin deal as possible, of a length exactly answering to the window in which it is intended to be placed, four or five inches in depth, and five or six in width. Glue on it, at the extremities of the top, two pieces of wainscot, about half an inch high, and a quarter of an inch thick, to serve as bridges for the strings; and within, at each end, glue two pieces of beech about an inch square, and of length equal to the width of the box, which is to hold the pegs. Into one of these bridges fasten with many pegs, such as are used in a pianoforte, though not so large, as there are to be strings; and into the other, fasten as many small brass pins, to which attach one end of the strings. Then string the instrument with however many strings of different degrees, fixing one end of them, and twisting the other round the opposite peg. These strings, which should not be too taut, must be tuned in unison. To procure a proper passage for the wind, a thin board, supported by four pegs, is placed over the strings, at about three inches distance from the sounding-board. The instrument must be exposed to the wind at a window partly open; and to increase the force of the current of air, either the door of the room, or an opposite window, should be opened. When the wind blows, the strings begin to sound; and in the sound, the force of the wind causes the changes in tension, which produce the effect.

The learned Matthew Young, B.D., formerly of Trinity College, Dublin, has entered deeply into the nature of the Eolian harp, in his Enquiry into the principal Phenomena of Sounds, &c., and as his work is rare, we shall here avail ourselves of his remarks on this subject:—

' The phenomenon of the Eolian lyre may be accounted for on principles analogous to those by which the phenomenon of sympathetic tones are explained. [See SYMPATHETIC TONES.] To remove all uncertainty in the order of the notes in the lyre, I took off all the strings but one, and on placing the instrument in a due position, was surprised to hear a great variety of notes, and frequently such as were not produced by any aliquot part of the strings: often, too, I heard a sound of two or three notes from this single string. From observing these phenomena, they appeared to me so very complex and extraordinary, that I despised of being able to account for them on the principle of aliquot parts. However, on a second inquiry, they all appear to flow from it naturally and with ease. But let us consider what will be the effect of a current of air rushing against a stretched elastic fibre. The particles which strike against the middle point of the string will move the string in a rectilinear position; and as no blast continues exactly of the same strength for any considerable time, although it be able to remove the string from its rectilinear position, yet, unless it be too rapid and violent, it will not be able to keep it bent: the fibre will, therefore, by its elasticity, return to its former position; and, by an increased velocity, pass it on to the other side, and so continue to vibrate and excite a wave in the air, which will produce the tone of the entire string. But if the current of air be too strong and rapid, when the string is bent from the rectilinear position, it will not be able to recover it, but will continue bent and bulging like the cordegags of a ship in a tempest; but if it can continue to vibrate, it cannot perform its vibrations, the subordinate aliquot parts may, which will be of different lengths in different cases, according to the rapidity of the blast. Thus when the velocity of the current of air increases, so as to prevent the vibration of the entire string, as well as that of the middle point against the middle points of the halves of the string, agitate those halves as in the case of sympathetic and secondary tones; and as these halves vibrate in half the time of the whole string, though the blast may be too rapid to admit of the vibration of the whole, yet it can have no effect on preventing the motion of the halves, than it would have on the whole string were its tension quadrupled; for the times of vibration in strings of different lengths, and agreeing in other circumstances, are directly as the lengths; and in strings differing in tension and agreeing in other circumstances, inversely as the square roots of the tensions: and, therefore, their vibrations may become strong enough to excite such pulses as will affect the drum of the ear; and these waves excite like modes in the air. In the same manner as standing corn is bent by blast; and wind, and if the wind be sufficiently rapid, it will have repeated its blast before the stem of corn can recover its perpendicular position, and therefore will keep it bent. But if the wind be too rapid, it will have no time to perform a vibration before it is again impelled; and thus it will appear to wave backwards and forwards by the impulse of the wind. Those particles which strike against such points of the string as are not in the middle of the string will not part, will not vibrate, and counteract each other's vibrations, as in the case of sympathetic and secondary tones, and, therefore, will not produce a sensible effect. With regard to those notes which cannot be produced by any exact submultiple of the string, but which, notwithstanding, may, in the sound, or apparent length of the instrument, be accounted for, Young observed that they were always transitory, gradually rising or falling to such notes, above or below them, as would be produced by exact aliquot parts of the whole string. Mr. Young follows the principles here laid down, by a series of experiments, which are of a very satisfactory nature, but for these we must refer the reader to the work itself. Eolian Islands, the ancient name of the eleven small islands north of Sicily, now generally called the Lipari Islands. Eolian Modes, in ancient music, one of the five principal modes of the Greeks, which derived its name, not from the Eolian islands, but from Eolus, a country of Asia Minor. When this name was, it is now supposed, by the Ancients determined. Writers of all times and kinds differ most essentially from each other on the subject. Rousseau says it was grave: the Abbé Feytou contradicts him. Sir F. Stiles tells us that this mode was the same as our E flat: Dr. Burney makes it F minor; and Rousseau says F, meaning, of course, F major. See Mode. Eolians, the name of one of those various peoples, whom we are accustomed to class under the general appellation of Greeks. We trace the name of Eolians to Thes- saly, their primitive abode, and it is likely they appear to have been closely related to the Phthiotic Achaeans of the same country. What was the nature of their relationship to the Dorians who dwelt successively in Phthia, in Ossa, in Phocis, in Boeotia and in the Peloponnesus, we cannot determine; but undoubtedly their languages were pretty closely allied. The Achaei of the Peloponnesus (the Achaei of Homer) were also iokma, and, in fact, part of the Eolians; and the great emigration, commonly called the Eolian, which is the emigration of the Achaeans, is probable that the emigration from the Peloponnesus commenced before the Dorian invasion, or return of the Hera- clids, as it is often called, which caused so great a revolution in the Peninsula; but it cannot be doubted that this event contributed still further to the Achaean or Eolian emigration under Penthisius the son of Oreus, and others of Agamemnon’s descendants. This great revolution in the Peloponnesus, caused by an invasion of hardy mountaineers and conquerors from Northern Greece, took
place, as the best-informed Greek historians believed, eighty years after the war of Troy, or B.C. 1104; and apparently caused a retrogression in the condition of southern Greece, and drove out a more civilized race. Strabo says that the Aolian settlements in Asia were four generations prior to those called the Ionians. The Aolian colonies on the Asiatic coast were widely spread, extending as far east from Cyzicus along the shores of the Hellespont and the Aegean to the river Ciusus, and even the Hermus. Many positions in the interior were also occupied by them, as well as the fine island of Lesbos, with Tenedos, and others of the islands of the group. The Aiolians were as a race possessed by a different people; which would be a proof, if any were wanting, that the race of new settlers came after his time. There were twelve cities or states included in the older settlements in that tract of Asia Minor on the Aegean, with their knowledge in Greek speech and by the name of Aol, and formed a part of the subsequent larger division of Mysia. Smyrna, one of them, which early fell into the hands of the Ionians, the neighbours of the Aolians, still exists nearly on the old spot, with exactly the same name, thus adding one to the many instances of the durable impress made by Greek colonizers wherever they settled.

But besides these twelve states, to which we have alluded, (most of which were near the coast,) there were many Aolian towns from the Holy Land to the Gulf of Genoa, and the range of the Ida mountains, and on the coast of Thrace. The name Aol is often applied to a branch or dialect of the Greek language; but as we do not possess any entire work written in this dialect, we cannot satisfactorily comment on it, or on the Greek language in which the tragedies of Aeschylus, Sophocles, and Euripides, the histories of Thucydides and Xenophon, and the orations of Demosthenes and Demades are written. There is no doubt, however, that it approached nearest to the Doric dialect of the Greek language, as it was spoken in most parts of the Peloponnesus after the great Dorian invasion already mentioned.

AOLIPYLE, AOOLIPILE, Aolili piia, the ball of Aol, an instrument made use of formerly in experimenting, composed of a hollow ball, with a slender tube might be screwed. It served to boil water in, for the purpose of creating steam. This instrument is mentioned by Des Cartes, in his treatise on Meteor, chap. iv., as used in his time. It is now entirely out of use, unless we choose to consider the boiler of a steam-engine as an Aol.

This is by no means the first instance in which a philosophical toy has been made of use to the arts.

AERA, a point of time from which subsequent years are counted, and in which there are no instances as in the Christian era. The origin of the word era is very doubtful. All nations who have any history to record have fixed their era at some remote period, in order to embrace in their annals as large an extent of time as practicable. The era is, however, so much less than the correct period to those who might have any means of ascertaining the time of its occurrence, and the Bible would be the source from whence the information might be obtained. But, unfortunately for chronology, the Bible is not sufficiently explicit on this subject; and, although the Jews and some Christian nations do date from the Creation, their computations of the period at which this event took place differ to the extent of nearly two thousand years. Those whom this uncertainty has deterred, or who have had no knowledge of the Scriptures, have contrived to themselves more recent periods. The ancient Romans adopted the epoch of their first supposed political existence, and the Greeks that of the first celebration or revival of the Olympic Games, which were with them an important national festival. Many nations have assumed some event closely connected with their religious faith; thus, the early Christians of the East dated from the persecution under the Emperor Diocletian, and those of Europe and America, at the present day from the birth of Christ. It is ever so in the common practice. All the followers of Christ who have adopted, as an era, the retreat of their prophet from Mecca to Medina, which they call the Hegira.

Many of these sras are arbitrarily and incorrectly fixed, and even our own is erroneous by four years. But an error at the commencement will invalidate that of events recorded subsequently, as any era once assumed will be sufficient to show the succession of time, however incorrectly assigned to the period whose name it bears.

With one or two exceptions, all nations have reckoned time in accordance with the course of the seasons; they have always begun their year at the same season, sometimes perhaps a little earlier, and sometimes later, but invariably keeping near the original commencement.

Here follows a list of the eras which have been or are most in use among the civilized nations of the world, with the year of the Christian era in which they began:

1. The year of the world according to the reckoning of Constantineople, which was used in Russia until the beginning of the eighteenth century, and is still employed by the Greek Church.

2. The year of the world as reckoned at Antioch, now used in the Abyssinian church.

3. The year of the world used by the Jews.

4. The Calyju, employed by the learned throughout India, may be called an era of the Christian era, being considered by the Hindoos as the commencement of the present state of the world, or 'Iron Age'.

5. The Olympiads; the era of the victory of Cononius at the Olympic games, used chiefly by the Greek historians after the age of Alexander.

6. The building of Rome: this is generally called 753 B.C.

7. The Catonian era of the building of Rome is.

8. The era of Vicramaditya, in common use throughout India.

9. The Spanish era, from the conquest of Spain by Augustus, who was employed in Spain, Portugal, Africa, and the South of France. In some provinces this era was in use until the middle of the fifteenth century.

10. The era of Salivahans, in common use throughout the world.

11. The era of Martyrs, or of Diocletian, so called from the persecution of the Christians in the reign of that emperor, was much used by the early Christians, and is still employed in the churches of the East.

12. The Hegira, used by all Mohammedans, dates from the flight of Mohammed to Medina.

13. The Christian era dates from the birth of Christ; the year in which he was (erroneously) supposed to be born is called 1 B.C., the following year 1 A.D. Many authors call the year of our Lord's birth 0, and consequently make the dates of all preceding events one less than is the common practice.

The following rules will serve to show the year of the Christian era corresponding with that of any given era:

1. When the commencement of the given era precedes the birth of Christ, subtract from the given year the number affixed to the era in the above list, and the remainder will be the year of Christ in which the given year began.

2. If the given year be less than the affixed number, subtract it from that number, adding one; the result will be the date before Christ.

Examples.—Required the Christian date answering to the year of Rome 1754.

From 1754
Deduct 753
The year 1001 A.D. corresponds with the year 1754 A.U.C.

Required the year B.C. answering to 707 A.U.C.

From 753
Deduct 707

Add 1

46

The year 47 B.C. coincides with 707 A.U.C.

The reason is this: A.U.C. 707 means that an event took place in that year; and therefore 753—706 or 47 years B.C. remain, and as all the years B.C. before B.C. 47 have expired, the event must take place in the year B.C. 47.

* See Water's Chronology, p. 234.
The year A.D. 1314 answers to the year 1031.

The year A.D. 1315 began in the year 1829 A.D.

AERIAL PERSPECTIVE, a term in painting, implies, in its simple definition, the receding of objects into distance, as seen through the medium of air. In its general application, however, it is to be understood in a more enlarged sense. Linear perspective may be considered the material guide of the artist, originating in, and governed by, mathematical science; but aerial perspective is, in whatever relates to effect, amenable to no positive law or established rule. Of its influence on the perception and capacity of the artist. Although entering into every variety of subject, in graphic representation, it is in open scenery that aerial perspective is exhibited in its proper sphere.

To feel this, it will only be necessary to recall in how different an aspect the same scenery may present itself under different modifications of the atmosphere. A prospect, which at noon day, or in a clear and bleak morning, appears tame and uninteresting, shall assume an ideal character, and start into combinations of beauty, if seen at sunset or at sunrise, or under any temperature of the sky favourable to the development of picturesque effect.

It is, of course, in those schools of painting, wherein the study of external nature, especially of landscape, has been most cultivated, that there are to be looked for the finest examples of aerial perspective. The Roman and Florentine masters, whose object, almost exclusively, was human form and character, seem to have felt or understood but little of it. The Dutch and Flemish painters exhibit high excellence in this particular, as is shown in the works of Rubens, Rembrandt, Teniers, Ostade, Cuyp, Ruydschael, Wouwermans, Vanderveelt, &c. France, however, has the glory of having produced the artist Claude Lorrainne, who, in this great quality of art, has borne off the palm from all competitors. He rarely painted any other effects than those of the rising or setting sun, well knowing their picturesque superiority; but whatever be his subject, an ancient port, or ruins, or temples, the great and presiding charm of Claude as his consummate skill in aerial perspective, can compete with Claude, that competitor, perhaps, is Cuyp.

AERODYNAMICS, signifies the science which treats of the motion of the air, or of the mechanical effects of air put in motion. In its widest sense, it might be taken to include the phenomena of the atmosphere substance or vapour; and even the properties of steam might be considered as a part of the science. We shall, however, confine ourselves to the explanation of the few general principles which can be relied upon; the applications and after effects of the subject, therefore, might be a subject for another and more voluminous work.

The word air, as we have noticed, is, in the language of mechanics, applied to that portion of the atmosphere which is usually between twenty-eight and thirty-one inches in height, that is, the flat bottom of any vessel is pressed by a weight, arising from the air, as such would be obtained by filling it with mercury to a height of from twenty-eight to thirty-one inches. This pressure is estimated as from fourteen to fifteen pounds afoead upon every square inch. [See Air.]

As soon as we begin to move, we feel, more or less, the resistance of the air. At an ordinary rate of motion, this resistance is not very sensible, but at the rate of thirty to forty miles an hour, it feels so sensibly, and is obliged to wear a cap which may cut the wind, as the bow of a ship cuts the water, or otherwise it would be blown off his head, though, in this case, the sense of the wind, there might be as no other stirring at the time.

Whenever we attempt to put any matter in motion, we feel what is denominated pressure or resistance, which is the greater the greater the quantity of matter we attempt to move, and the velocity with which we bring it to motion. Thus, two violent pressures, of equal force, applied for an instant to weights of ten and twenty pounds, will make the weight of ten pounds move twice as fast as that of twenty; or, if we would have the two move equally fast, we must apply twice as much pressure, or to four times as much as we do to that of ten pounds. If we now conceive a number of equal balls placed in a line, along which we move the hand uniformly, so as to set them all in motion one after the other, we might at first imagine that if we move them at the rate of two feet in a second, and afterwards at the rate of four feet in a second, that we exert twice as much force, and encounter twice as much resistance, in the second case, as in the first. Because, we say, we move each ball in the second twice as fast as in the first. But this is another consideration: we not only move each ball twice as fast, but we meet with twice as many balls in a second, so that not only the velocity we communicate in a second is doubled, but also the quantity of matter to which we communicate the velocity is multiplied by two, and as much as much to twice the velocity, as there was to the single velocity. Similarly, at three times the rate of motion, we meet with three times as much matter, and communicate to each portion three times the velocity: which at three feet would be nine; and so on, in as much as the resistance is made up of so many times as great. And this, which was the first theory proposed on the subject, is sufficiently near the truth for practical purposes, when the velocities are not very great; for example, up to eight or nine hundred feet in a second.

But one circumstance has been neglected. The success...
The surface of the second being twice that of the first, the resistance to the larger sphere is a little more than twice that of the smaller, the velocities being the same in both.

2. The round ends and sharp ends of solids suffer less resistance than the flat ends of the same. Thus, the sharp end or vertex of a cone is less resisted than the flat end or base.

3. Two solids, having the parts presented to, or which push the air, the same, are not equally resisted unless the hinder parts are also the same.

Though we have hitherto considered the resistance offered to a body moving against still air, and the pressure which is necessary to maintain it at a given velocity, yet the problem is exactly the same, if we suppose the body to remain still, and the air, or as we now call it, the wind, to move against it with the same velocity. Suppose the body to move 10 feet in a second, and that the spectator is carried along without his knowledge at the same rate. He will, therefore, always be in the same position as when the wind is moving; he will at the same time imagine that the air or wind is coming towards him at the rate of 100 feet per second. The force which, when he imagined the body moving, he called the pressure necessary to maintain its velocity, he will now say is the pressure necessary to keep it at rest.

If we suppose both the wind and the body in motion, the resistance is variously modified, according to the direction of the motions of the two. If the wind and the body move in the same direction, the same resistance, for no air is displaced by the body. If the wind move 50 feet per second, and the body 100 feet per second, the resistance is that of a wind 200 feet per second; and so on. If the spectator move with the body unknowingly, the magnitude and direction which he will assign to the wind is that which will produce such a pressure on the body at rest, as it really sustains when in motion.

The following well-known table, first given by Mr. Steward in the Philosophical Transactions for 1759, and confirmed by the experiments of Mr. Hutton, shows, in pounds avoirdupois, the pressure which different winds will exert on a square foot of a smooth exposed horizontal plane, from a distance of 100 feet.

<table>
<thead>
<tr>
<th>Velocity of Wind</th>
<th>Miles per Hour</th>
<th>Feet per second</th>
<th>Force on one square foot in pounds avoirdupois</th>
<th>Character of the Wind</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>147</td>
<td>.005</td>
<td></td>
<td>Hardly perceptible</td>
</tr>
<tr>
<td>2</td>
<td>2.93</td>
<td>.020</td>
<td></td>
<td>Just perceptible</td>
</tr>
<tr>
<td>5</td>
<td>4.40</td>
<td>.041</td>
<td></td>
<td>Gentle, pleasant wind</td>
</tr>
<tr>
<td>10</td>
<td>14.67</td>
<td>.092</td>
<td></td>
<td>Pleasant, brisk gale</td>
</tr>
<tr>
<td>15</td>
<td>22.00</td>
<td>1.077</td>
<td></td>
<td>Very brisk.</td>
</tr>
<tr>
<td>20</td>
<td>29.34</td>
<td>1.968</td>
<td></td>
<td>Very high.</td>
</tr>
<tr>
<td>30</td>
<td>36.67</td>
<td>3.075</td>
<td></td>
<td>Storm or tempest.</td>
</tr>
<tr>
<td>40</td>
<td>44.01</td>
<td>4.289</td>
<td></td>
<td>Great storm.</td>
</tr>
<tr>
<td>50</td>
<td>51.34</td>
<td>5.027</td>
<td></td>
<td>Hurricane.</td>
</tr>
<tr>
<td>60</td>
<td>58.68</td>
<td>5.783</td>
<td></td>
<td>Destructive hurricane</td>
</tr>
</tbody>
</table>

For the method of obtaining these results see Anemometer.

Let us suppose the square foot of surface placed obliquely, so as to make an angle A B C, with the direction A B of the wind. Let D B represent the velocity of the wind per second. Then, if D E be drawn perpendicular to B C (see Composition of Velocities) the wind which strikes the plane at B will not strike the whole velocity, but only with the velocity D E; it being the same thing as if we supposed the wind to be carried direct against the plane with the velocity D E, and at the same time shifted on the surface from C towards B with the velocity E B. This last will only make different pressures at the point B, but not with different forces. This line D E is in
trigonometry proportional to the sine of the angle $DBE$. Again, if we draw $EF$ perpendicular to $DB$, the whole of the velocity $DE$ is not in the direction of the wind, $E$, but only the part of it $DF$; the other component, $FE$, being employed in moving the plane in a direction perpendicular to that of the wind. This line, $DF$, which represents the effective velocity of the wind in the direction $AB$, is, as the square of the sine of the angle $ACB$. The line, $DF$, is a third proportional to $DB$ and $DE$, so that if we suppose the wind to move at the rate of 100 feet in a second, and the plane to be so inclined that it strikes the plane directly with only eighty feet of velocity, we have, for the real effective velocity of the wind, $\sin \theta \cdot 80 \div 64$, or a plane as resisting a wind of only 64 feet of velocity. This theory is liable to the objections of the former one, as it does not allow for any condensation, but supposes the particles to disappear after they have struck the plane. Nevertheless, it is found in practice to answer well enough when the plane is not very oblique to the wind. For the mathematician, we may state that the following empirical formula is found from Smeltson's experiments to be much nearer the truth, which, as he will see, is nearly equal to the square of the sine of the angle of inclination, when the latter is nearly a right angle.

Let the angle of inclination of the surface be $\theta$, and the velocity of the wind $V$, then the effective velocity is $\sin \theta \cdot V$ nearly.

For further information, we should recommend the treatise on Pneumatics, written for the Encyclopedia Metropoli-
tana, by Professor Barlow, in which the experiments re-
ferred to in this article will be found clearly detailed; and
also to the articles RESISTANCE, WIND, ANEMOMETER, in
DIDEROT's Political and Philosophical Dictionary.

AEROLITES, called also METEORIC STONES, are bodies which have fallen on the earth from the atmosphere, and are
named from $\alpha$ $eir (aer),$ atmosphere, and $\lambda \delta \theta\iota\sigma\varsigma$ (lithos), a stone. They are generally observed in very uncommon
places, and numerous writers in all ages have mentioned
instances, of the remarkable phenomenon of stony bodies
having been seen to fall from the sky; yet, till within the last thirty years, all such accounts were treated as tales of
fairy-land and superstitions. The following is a statement
of a most useful lesson how cautious we ought to be not to
reject too hastily the narratives either of early authors or of
living witnesses, however extraordinary they may be, solely
on the ground that they are inconsistent with our experience
of the laws of nature. When the official notice from the
local authorities, of the shower of stones at L'Aigle in Nor-
mandy, in 1803, was received at Paris, it afforded a subject
of merriment to the wise of that day; and the newspapers
expressed their compassion for the good people of L'Aigle,
who, they supposed, had been threatened with a new and
unnatural phenomenon, as much as gives an opportunity to
such nonsense as that stones had fallen from the clouds.
The first man of science who directed attention to the
subject of aerolites was Chladni, a German philosopher,
who, in a treatise, published in 1790, gave the first accurate
description of them. It is upon the mass of native iron found by Pallas in Siberia, that the credibility of the traditions of that and other stony bodies having fallen from the air. His sagacious
inductions, although they failed at the time to make any
great impression, prepared philosophers for a more willing
reception of the evidence as to the existence of such events.

One of the most extraordinary events, which were shortly afterwards brought under their notice. In 1798, a stone was exhibited in London, weighing fifty-six pounds, which was said to have fallen on the roof of the house of Mr. Bishop, in December, and the preceding night there had not been any
precipitation, but, although the fact was attested by several credible witnesses, the possibility of such an occurrence was still
In 1798, it was remarked, however, by Sir Joseph Banks,
that there was a great resemblance between the York-
shire stone and one in his possession, sent to him from
Italy, with an account of its having fallen from the clouds,
along with many others of a similar nature, near Sienna, in
July, 1794. In the year 1799, Sir Joseph Banks received a
similar report, accompanied by specimens of the stones from the atmosphere, which was said to have fallen near Bona, in the East Indies, in the previous December; and as these specimens were also nearly identical with the Yorkshire stone, incredulity began to give
way. It was, however, until the appearance of the celebrated paper of Howard, in the Philosophical Transactions
for 1802, giving an account of his analysis of the Benares stone, that men of science declared their belief in the pheno-
momenon, supported, as the evidence then was, by the
researches and opinion of so cautious and accurate an
inquirer; and the fall of stones at L'Aigle, above alluded to,
which took place in the autumn of the year, at the time the
rhetoric of Howard was in the hands of the public, removed
all doubt. The Institute of France deputed the celebrated
Biot to examine, on the spot, the whole circumstances at-
tending this remarkable event; and the result of his labours
will be found in his report, in the seventh volume of the
Memoires de l'Institut. He satisfied himself of the authen-
ticity of the facts which had been narrated; and the spec-
mens he collected on the ground, being analysed by Va-
quelin and Thenard, yielded the same result as the analysis
of the stone from L'Aigle. This stone, however, must be
treated with the greatest caution in its interpretation, as
it had been only established as truths in physical science, during that period, by the conjectures of Chladni, the analyses of
Howard, Vaquelin, and Laugier, and the researches of
Chladni. The fall of stones in Asia then given no more honourable mention than to have his sound inductions designated as conjectures.

By this series of observation and experiment, not only
was the truth of the recent occurrences established, but the
instances recorded by the writers of past times, which had
remained unexplained, were also explained. In 1794, Howard,
aged 64, during the summer, at the age of 64, received so high a degree of probability, as to entitle them to be classed among the authentic documents of past events in the physical history of the earth.

An account of the circumstances that attended the fall
of stones at Benares and L'Aigle will convey the best idea of the phenomenon, not only as it occurred in these two
cases, but in most other instances of which a circumstantial
description has been preserved. They are always accom-
dpanied by an explosion, which, according to the testimony of a skilful eye, was a powerful explosion, seems to burst and scatter its contents.

At a short distance from Benares, on the 10th of Decem-
ber, 1798, a very luminous meteor was observed in the heavens, about eight o'clock in the evening, in the form of
a large ball of fire resembling that of thunder, which
was immediately followed by the sound of the fall of heavy bodies. On examining the ground, it was observed to have been newly torn up in many places, and in these stones were found of a similar
character. Thus, the first modern instance of a meteor,
which, according to the testimony of a skilful eye, was a
powerful explosion, seems to burst and scatter its contents.

The light from it was so great, as to cast strong shadows
from the bar of a window upon a dark carpet, and it appeared
luminous as the brightest moonlight. Many of the stones
were collected, and some of them weighed two pounds each.

On the 26th of April, 1803, at one o'clock in the after-
noon, the sky being clear, with the exception of a few light
clouds, a ball of fire was observed in Normandy, in many
places far distant from each other—namely, Caen, Falaise,
and Cherbourg. The next morning, they moved rapidly from
south-east to north-west; and about the same time, in the
district of L'Aigle, loud explosions were heard, which lasted from five to six minutes, resembling the sound of
cannon and musketry, and were followed by a long-continued
noisy, like that of many drums. The meteor from which the noise proceeded appeared not so much like a ball of
fire, but rather like a small rectangular cloud, which, during
the phenomenon, seemed not to move; but the vapour from
which it proceeded, by specimen, clouded over the earth in
all directions. It seemed to be about half a league north-west
from L'Aigle, and must have been at a very considerable
elevation, at it appeared to the inhabitants of two villages
more than a league distant from each other, and they
were completely overpowered by the appearance of the
sound. Throughout the whole district over which the cloud hung, there was heard a hissing noise, like that of a stone from a sling, and a vast number of stones fell to the ground. The space
over which they fell formed an ellipse of two leagues and a
half
long by one broad, the larger diameters being from south-east to north-west, the direction in which the meteor moved: the largest stones were found at the south-east end of the slipse, and the smallest at the opposite extremity. Above two thousand were collected, and they varied in weight from small stones to boulders between 2 and 4 tons. 

If, when taken up soon after their fall, are extremely hot. They are generally angular, of prismatic and pyramidal forms, the angles being rounded; their broken irregular surface is coated with a fixed black crust, like varnish, or, except where exposed to the unshielded sun, is but slightly affected. When broken, they display a little in appearance; but they are, for the most part, composed of a collection of small spherical bodies, of a grey colour, imbedded in a gritty substance, and often interspersed with yellow spots. One of the most extraordinary features of these stones is that they are about the same size, whatever part of the earth they have fallen. Iron is found in all, and in a considerable proportion, partly in a malleable state, partly in the form of friable meteoric iron, often of vast sizes, and either of a greater or less proportion of the rare metal called nickel; the earths silica and magnesia and sulphure constitute the other chief ingredients; but the earths alumina and lime, the metals manganese, manganese, chrome and cobalt, together with carbon, soda, and chlorides, are found in this mixture, but not in the same specimens. The variations discovered by analysis are never, however, sufficient to destroy that affinity of external character by which they are instantly recognized. No new substances, nothing with which we were not acquainted before, have been found in these specimens. But, although all the constituent elements are found in different mineral substances, no combination of them, similar to that in meteoric stones, has ever been met with, either among the stratified rocks of any period of formation, or extracted from the unstratified rocks, or among the products of any volcano, extinct or in activity. Their specific gravity is about 3.50, but varies according to the proportion of iron which they contain. They are sometimes very friable, sometimes very hard; and some are friable which have been exposed to the sun in veneration, and others, which have been exposed, vary from two drams to three pounds. One of the stones which fell at L'Aigle yielded by the analysis of Thenard,—

Sillia..... 46 per cent
Magnesia  7
Iron..... 45
Nickel..... 2
Sulphure..... 8

and Laugier afterwards discovered the presence of chrome in it. Frequently small detached portions of malleable iron are disseminated through the mass, and the black crust acts powerfully on the magnet.

The appearance of these bodies is not periodical, nor connected with any particular period of the atmosphere, nor the weather; and they have fallen in all climates, on every part of the earth, at all seasons, in the night and in the day.  

Chladni has compiled a very copious catalogue of all recorded instances, from the earliest times: of which twenty-two are previous to the Christian era: thirty-three from the beginning of the first to the end of the fourteenth century; eighty-nine from the beginning of the fifteenth to the date of the fall at L'Aigle at the beginning of the present century; and it appears from Chladni's list, and Van Hoff's catalogue, that during the last centuries of observation, the attention of scientific men has been directed to the subject, above sixty different cases have been recorded. Numerous as these may appear, they can form but a small proportion of the whole amount, when we compare the small extent of surfaces occupied by those capable of keeping a record of such events, with the wide expanse of the ocean, the vast unhabited deserts, mountains, and forests, and the countries possessed by savage nations. Many of those which occur in the night must also escape observation even in civilized regions.

Among the more remarkable instances to be met with in ancient authors, the following may be mentioned. Livy states, that, in the reign of Tullus Hostilius (about 634 yrs. B.C.), a shower of stones fell on the Alban Mount, not far distant from Rome, in the life of Livy,eller, describes: stone that fell at Aegos Potami, in the Hellespont, near the modern Gallici-a, about 484 B.C., which is also mentioned by the elder Pliny (Book II.), who says that it was to be seen in his time, that is, five hundred years afterwards, and that it was as large as a waggon, of a burnt colour, and its fall was accompanied by a meteor. It is also recorded in the Parian Chronicle. The mother of the gods was worshipped at Peiius, in Galatia, under the form of a stone, which was said to have fallen from heaven; and that it is worshiped, in consequence of this treaty with about 480 miles north. Pergamus, was solemnly brought to Rome by Publius Scipio Nasica, about 264 yrs. B.C., and placed in the Temple of Cybele. The sun was worshipped at Emea, in Sylia, under the form of a large, conical, black stone, which, when broken, would give out a sound, like the report of a gun. 

It was afterwards brought with great pomp to Rome by Elagabalus, who had been high-priest of the temple; and the description of it, given by Herodian, (Book V.) accords with the appearance of a meteoric stone.

One of the cases of more modern date, most circumstantially described, is that of the stone which fell at Ensisheim, inAlsace, in 1492. The Emperor Maximilian being there at the time, ordered an account of the event to be drawn up. It weighed 270 pounds; and was afterwards suspended by a chain in the church at Ensisheim for three centuries. During the French revolution, it was carried off to Colmar, and many pieces were broken from it. One of these is in the museum at the Jardin des Plantes, near Paris; it is identical in composition with the other stones, and contains native or malleable iron. What remained of the precious relic has since been restored to the good people of Ensisheim, and it now stands near the great altar in their church.

Besides chalcedony properly so called, masses of malleable iron have been found Fund, together with their composition, leave no doubt as to their being of meteoric origin. An immense mass, seen by Pallas in Siberia, which forms the subject of Chladni's tract in 1794 above alluded to, was found quite insalubrity, at a great elevation on a mountain of slate near the river Jeneset, removed from everything that could excite suspicion of its being a production of art, and totally different from any ore of iron seen either before or since that time. The tradition was, that it had fallen from heaven, and, as such, was worshipped by the Chaldeans, under the name of the sun, one of the Celestial Gods; and was in 1749 to the neighbouring town of Krasnojarck by the inspector of the iron mines there. The mass, which weighed about 1400 lbs., was of an irregular form, not solid, but cellular like a sponge, the cells containing small granular bodies of a glassy nature; afterwards found to be a mixture of malleable olivine, so common in basalt. The iron was tough and malleable, and, according to the analysis of Howard, yielded 17 per cent. of nickel, but Klaproth and John found a much smaller proportion of nickel, and Laugier found by another analysis a much smaller amount of nickel. The disagreement of such skilful operators shows that the mass was not uniform in its composition. Another vast mass of meteoric iron was found in South America, in the province of Santa Cruz, in the valley of the river San Juan, and was purchased by the iron works at Ensisheim, and are in the collection of the British Museum. A mass of meteoric iron at the Cape of Good Hope, mentioned by Barrow in his Travels in Africa, as an artificial production, is described by Van Marum in the Haarlem Museum transactions, a large piece has been sent to the public museum there by the governor of the colony. The mass, when found, was equal to about 177 lbs., but much had been carried away. The specific gravity is 7.60. Tennant found it to contain 1.01 per cent. of nickel. A small piece of the mass, containing 7 per cent. of nickel, was purchased by a Mr. Wollaston, and was analysed by Dr. Wollaston, yielded 4 per cent. of nickel. Many other instances of similar masses of iron might be mentioned, which are evidently of meteoric origin; but the only instance on record of iron having been actually seen to fall from the atmosphere, is that which took place at Agram,
in Croatia, in 1731. On the 25th of May, about six o'clock in the evening, the sky being quite clear, there was seen a ball of fire, which shot along with a hollow noise from W. to E., and after a loud explosion, accompanied by a great smoke, two masses of iron fell from it, in the form of chains welded together.

Addresses and meteoric iron are not the only products of meteors which have fallen upon the earth after explosion. Numerous instances are mentioned of black and red dust, which has covered great tracts of land; and it is remarkable that this dust has generally contained small hard angular grains resembling augite. There have also been cases of the fall of a soft gelatinous matter of a red colour like coagulated blood, which have given rise to the stories of the sky having rained blood. Such appearances have not been frequently accompanied by the fall of stones. On the 15th November, 1755, rain of a red dust fell around Ulm and the Lake of Constance, and on the same day in Russia and Sweden. The red water was of an acid taste, probably from the presence of sulphuric acid; and the precipitate, which was flaky like snow, when dried, was attracted by the magnet. In the night of the 5th March, 1803, a red dust, in some places accompanied by rain, fell in different parts of Italy. In Apulia, there was first a very high wind bringing much noise, and then a cloud appeared coming from the S.E., from which there fell a yellowish-red rain, and afterwards a quantity of red dust. It continued the whole of the following day and part of the succeeding; the dust was examined, and was not to be volatilized. In the Annals of Chimie, tom. iv, Paul Bert says, that near Aruzzo, in March, 1813, the ground being then covered with snow, there was a shower of fresh snow of a red colour, which continued for many hours, accompanied the whole time with a shower rain of the same colour, at a distance; the greatest fall was accompanied with two or three explosions like thunder. The red snow being melted, a precipitate was obtained of a maroon colour, which yielded silica, lime, alumina, iron, and manganese.

The origin of this remarkable class of natural phenomena is involved in great obscurity, and many different theories have been proposed to account for them. By some they have been supposed to be bodies ejected from distant volcanos belonging to our earth, and at so great a distance from it as to be ejected by every circumstance connected with them. No substance in the least resembling aerolites has ever been found in or near any volcano; they fall from a height to which no volcano can be supposed to have projected them, far less to have given them a velocity to move in a straight direction in which they might move for a considerable part of their course. Another hypothesis is, that meteoric bodies are formed in the atmosphere, which is equally untenable; for, in the first place, there is no ground, for supposing, that any discoverer made it up, that the elements of which they are composed exist in the atmosphere; and even if they did, the enormity of the volume of the atmosphere, attested as it is at the great height from which the meteors fall, which would be required to produce a solid mass of iron of thirteen tons weight, places the conjecture beyond all credibility. But even granting so extravagant a proposition, and supposing the mass to be formed, what force could exist in the atmosphere to project it with the velocity with which meteors move, which has been calculated to be often greater than that of the earth in its orbit? A third hypothesis is, that they are bodies thrown out by the volcanos which are known to exist in the moon, with such force as to bring them within the sphere of the earth's attraction. This hypothesis was so far considered by Laplace, that he calculated the degree of lunar volcanic force that would be necessary for this purpose. He calculated that a body projected from the moon with a velocity of 7771 feet in the first second would reach our earth in about two days and a half, but Olbers asserts, that if this be true, one of these hypotheses can be of opinion that the velocity of the meteors, which has been estimated in some cases to be at first equal to some miles in a second, is too great to admit of the possibility of their having come from the moon. The opinion which is most convincing with all known facts and laws of nature is that proposed by Chladni, viz., that the meteors are bodies moving in space, either accumulations of matter as originally created, or fragments separated from a larger mass of a similar nature. This opinion has been advanced by Sir Humphry Davy, at the conclusion of one of his papers in the Philosophical Transactions for 1817, giving an account of his researches on flame. The luminous appearances of shooting stars and meteors cannot, he says, be owing to any inflammation of elastic fluids, but must depend upon the ignition of solid bodies. Dr. Halley calculated the height of a meteor at ninety miles, and the great American meteor which threw down showers of stones was estimated at seventeen miles high. The velocity of motion of these bodies must, in all cases, be immensely great, and the heat produced by the compression of the most rarefied air from the vast vacuum of space is obviated by the mass; and all the phenomena may be explained, if falling stars be supposed to be small solid bodies moving round the earth in very excentric orbits, which become ignited only when they pass with immense velocity through the layers of a denser atmosphere. The meteoric bodies which throw down stones with explosions be supposed to be similar bodies which contain either combustible or elastic matter.

Those who wish to investigate this curious subject will find it most ably and copiously treated in Chladni's work, "Uber Feuer-Meteor, und über die mit dem herabfallen Massen," Vienna, 1819. He continued his researches to the time of his death, and published them in "Gibert's Annalen der Physik, since which time the subject has been treated by a redish black and white scholar, the continuation of Gilbert. The "Lithologie Atmosphérique" of Izarn may also be consulted; and there is a good compilation by Bigot de Morogues, entitled "Mémoire historique de l'atmosphère des Châteaux des Pierres," Orleans, 1812.

AERONAUTICS. From two Greek words, signifying sailing in air. [See BALLOON.]

AEROSTATICS, AEROSTATION, derived from two Greek words signifying, standing in air, is the science of the application of the principle of buoyancy to the construction of instruments for ascending in air, gas, or vapour. For every essential point not explained in HYDROSTATICS, refer to BAROMETER, and BALLOON.

ÆSCHINES, commonly called the Orator, to distinguish him from another of the same name, was born at Athens A.C. 393. At this period of a nation which is now no longer in its prime, statesmen may be considered as almost synonynous terms, for, without some superiority in the art of speaking, it was impossible to attain any great eminence in political life. In all communities of a democratic character, the power of the orator is immense, and a man who can include the secrets of political science, and, from a knowledge of the existing state of the world, can draw from every incident, which is seemingly trivial, the true principles of an extensive nature, and, from the knowledge of the past, can predict the probable consequences of events which are going on around him, may, by his oratory, command the minds of men, and rouse them to a spirit of vigorous action when the argument is strong, or to an intermediate state of inaction by a voice of firmness and authority. The man who can, by his oratory, influence the minds of men, and rouse them to a spirit of vigorous action when the argument is strong, or to an intermediate state of inaction by a voice of firmness and authority, is called an orator. The imputations which this great proficient in the art of oratory was supposed to have committed against the Athenian democracy, and which he treated with the greatest contempt of those who, from the admiration of the ancient orators, cast groundless imputations on the character of each other, or of their friends, have been so fortunate as to be considered and rejected by the well-grounded suspicion of political, if not private, dishonesty.

The name of Æschines' father was Atrometus. According to Arnold, he was born in the year 393, and his parents had obtained his freedom, but his son asserts that he was a true-born Athenian. However this may be, he was poor enough to be a schoolmaster, with which Demosthenes upheld his rival as it were a low and sordid profession. A boy, while a young Demosthenes was roused up in great poverty, attending thy father in the school, making ink, cleaning the benches, and sweeping the school,—occupations such as beft a slave, and not a free-born youth.

The imputations which he was so great as to commit the orators, and which the orators were supposed to be as well as to find in the character of the Æschines, when he was a boy, or if we trust the testimony of Demosthenes, became a kind of a clerk to some of the inferior magistrates, an occupation in which he continued till at least thirty, when he was brought up in great poverty, attending thy father in the school, making ink, cleaning the benches, and sweeping the school,—occupations such as beft a slave, and fine person, his trial for the cause, that his success was probably not great. Whether he stepped from the stage direct into the more busy theatre of public life, we do not know; but at least he seems to have been a man of spirit, and perhaps a man of some power, though not at an early age, as a public man. Æschines, when he was a boy, two brothers, one of whom, Philocles, like himself, had been a clerk or secretary; the other, Aphobetus, is said by Demosthenes to have got his living by painting alabaster vases or other curious works. At the conclusion of one of his papers he asserts that Æschines and Philocles served also as public
clerks for two years. By having discharged his functions as a clerk, and having been in the service of the orators Aristophon and Eubulus in some similar capacity, he had acquired some knowledge of the laws of his country. In short, he was a bold adventurer, gifted with many of those qualities that are calculated to ensure success in the dubious game of political warfare.

Only three orations of Aeschines are extant, all of which relate to important events in his public life. He was accused by Demosthenes, one of his fellow ambassadors, of malversation on public accounts in his consulship to King Philip, the object of which was to obtain Philip's ratification of the treaty of peace, and to this attack he replied in his oration entitled "On Malversation in his Embassy." Timarchus, a friend of Demosthenes, had joined in the conspiracy against Agis, in this respect, he had composed himself of this adversary by prosecuting him for a disreputable course of life. Aeschines gained his cause, and Timarchus, according to some accounts, concluded the affair by hanging himself. The oration on this subject is called "Against Timarchus." and correctness of the prosecution of Timarchus deferred the prosecution of Aeschines till about three years after his return from the second embassy, which was no doubt favourable to the accused, as it tended to reduce the popular feeling against Aeschines, who finally escaped from the charge on the plea of his health. An oration is entitled "Against Ctesiphus," but is, in fact, an attack on Demosthenes, who replied in his famous oration called "The Crown." The preface on which Aeschines attacked Ctesiphus was to set forth the services which Demosthenes had rendered to the state, it was proved that this Ctesiphus should receive a golden crown, but this proposition was considered by Aeschines to contain clauses contrary to existing laws. He also denied the claim of Demosthenes on the ground of the early or n.c. 338, Aeschines had declared his intention to prosecute Ctesiphus, but the cause was not tried till n.c. 330, after the death of Philip, while Alexander was in the midst of his Asiatic conquests. Aeschines lost his case, and not having obtained one-fifth part of the facts, he was compelled to leave Athens, being unable to pay the penalty, that of a public prosecutor, as required by the law. He retreated to the island of Rhodes, where, it is said, he resumed the profession of his earlier days, by opening classes for instruction in eloquence, and became the teacher of Thucydides, of whom Aeschines was the reputed founder, to be characterized by a happy mean between the florid Asiatic and the dry and more sententious Athenian style. To us, of the present day, the style of Aeschines appears distinguished by great perspicuity. His narrative and descriptive powers deserve high praise, nor are we disposed to undervalue his powers of abuse, though in this he falls far below his great rival. We have the strong, the weighty, and the significant, as an orator, in the reluctant, but unambiguous manner in which Demosthenes acknowledges his own inferiority.

There are numerous editions of Aeschines: the latest and best, as far as the mere text is concerned, is included in the "Gottschedische" of the best editions of Aeschines alone by J. H. Breinl, 1824, 2 vols. 8vo. The Abbé Auger translated the orations and letters of Aeschines into French, and inserted them in the second volume of his Demosthenes. The oration of Aeschines is translated, with some difficulty, into the modern language of Greek literature, for rhetoric masters to employ themselves on fictions of this kind. [For a specimen of the style of Aeschines, see the Penny Magazine, No. 63, p. 117.]

"Aeschines" the Philosopher was one of the scholars of Socrates, and, as the story goes, the son of a sausage-maker. Three dialogues, still extant, that have usually gone under his name, after passing through the furnace of modern criticism, have been declared not to be written by him. The language of these dialogues proves them, however, to belong to the same age when Socrates was still alive. This great orator

Aeschylus, the son of Euphorion, and a native of Eleusis in Attica, was born about b.c. 525, and died in Sicily probably about b.c. 456. As the great father of the Athenian drama, Aeschylus occupies one of the most prominent places in the history of the literature of his country. Like most of the great writers of antiquity, however, the particulars of his life that have come down to us are few and unimportant, with the exception that the warrior-poet fought bravely in the great struggles against the power of Persia. He occupied one of the most polished parts of his life he visited the court of Hiero, king of Syracuse in Sicily, who, bearing a patron of poets and learned men, had collected around him the most illustrous writers of that day, such as Pindar and Simonides. An odd story is told of the death of the poet's death: an eagle that was carrying off a tortoise let it fall on the great dramatist's head, mistaking the bald pate, as the story rather humorously concludes, for a stone.

Seven tragedies of Aeschylus, out of a very large number, that he wrote, were performed or, in other words, entailed, respectively, The Prometheus Bound; The Seven against Thebes; The Persians; The Female Suppliants; The Agamemnon; Choephoroi (libation-bearers); and Eumenesides, or Purges. The three last form a continuous drama or action, which is still known as Aeschylus's great work. Aegisthus was murdered by his wife Clytemnestra: (2) the revenge of Orestes, the son of Agamemnon, who kills his mother and the adulterer Aegisthus; and (3) the persecution of Orestes by the Furies, and his release therefrom by the sentence of the court of Minerva. It was usual with the candidates for the dramatic prize at Athens to write three tragedies on some connected subject, to which they added a fourth, called a satyr-drama, on some subject treated in a tragi-comic style. The Prometheus Bound of Aeschylus belongs, or, in its description, for we know that there was a play entitled Prometheus the Fire-stealer, and a third named Prometheus Losed.

The Greek drama, in its origin, consisted simply of a chorus or company of actors. A chorus is a body of persons playing the parts of deities or heroes by appropriate songs and dances. The introduction of a personage to tell some story or history was an innovation, and the connecting this narrator more closely with the chorus was a still further step towards the drama, the Greek word for the chorus was koré or, in its more technical sense, the representation of a series of events ending in some striking catastrophe. But Aeschylus carried improvement still further, by introducing a second speaker, and thus making the dialogue, as it really is, the essential part of the play. To the present day the Rhodians are so offended by the great degree of importance, as we may see from his extant plays, in which the chorals occupy a large part. He added also to stage effect by improving the dress of the actors, and giving them masks: in this latter respect our notice of good, which requires the expression of the countenance to be seen, is at variance with the usage of the Athenian stage. Our practice of painting faces comes nearer to that for which the invention of Aeschylus was a great step. The architects set about the country in a wagon, and daubed the faces of his company with less of wine.

It is difficult to convey an exact idea of the character of Aeschylus as a dramatist, to those who have not read the plays. The plays of Aeschylus are few in number, and the events follow one another without any complexity or occupying any great surprise. His language is always forceful, and the dialogue is more or less clear where the Greek text has escaped defacement. In clear where the works of ancient writers have been subjected, they have often suffered serious injury, and few have sustained more corruption than the plays of Aeschylus. In consequence of this, the chorals are often exceedingly obscure, and the obscurity is increased by the wild, unrestrained, and gigantic conceptions of the poet, which seem as if they often strove with the imperfections of language, and endeavored to find utterance by a superfluity of expression, a heaping together of strong epithets, and the use of long compounded words. In spite of
these defects, which often make the poetry of Aeschylus border on bombast, and afforded a fair subject of ridicule to Aristophanes in his play called the Frogs, we may often adduce this treble writer a real sublimity of conception, a boldness of imagination, and a power to paint what is grand and terrible in language, that for force, simplicity, and truth, we can venture to say has never been surpassed. The reader may form an idea from the play of Prometheus in the Panny Magazine, No. 49, p. 2, and another from the Persians, in No. 51, p. 18.

The play of the Persians derives a peculiar interest from being the only extant Greek tragedy which treats of a subject peculiar to the Persians with the air of gravity, which was written or acted probably about eight years after the battle of Salamis, and may be considered as the most durable monument, created by Greek genius, to commemorate the defeat of the Asiatic invader. The poet writes as he fought, with a noble spirit of patriotism, such as animates every brave man when he sees an invader dare to tread on the heath of his beloved home. Aeschybus is one of those brilliant examples from antiquity, in modern times but rarely seen, of a man whose greatness in action was accompanied by an equal greatness of intellectual powers.

There are numerous editions of the works of Aeschylus. The first was printed at Venice in 1518, 8vo., in the press of Aldus; after his death: but the Ateummon and Choephor is both involved in that in which the text of the Ateummon is sufficiently corrected by the Choephoris, which has lost its beginning; consequently this edition contains only six plays. Perhaps the best edition of the text of Aeschylus is by Wellenar, 2 vols. 8vo. 1823. The two largest poets of the Aeschylean period are Aeschylus and Sophocles; and also several poetic versions of the Ateummon, the Germans have several poetic translations of Aeschylus; the latest is by Voss, 1826. William Humboldt's translation of the Ateummon (1816) is highly spoken of.

Aeschylus, or more properly, according to the Greek form of his name, Asclepius, was the god of medicine in ancient mythology. Agreeably to the intrigue and confusion which prevails on that subject, several Asclepiai are said to have existed; and it would not be easy to determine which invention really received the approbation of persons, or had merely handed down different versions of the parentage of the same man. Cicero mentions three: the first, son of Apollo, invented the cube, and the art of binding up wounds; the second, son of Mercury, was struck dead by lightning; the third was of mortal parentage, son of Asopus and Arsinoe, and first practiced piercing and tooth-drawing. The Egyptians also had their Asclepius (as the Greeks call him), the son of Hermes. Of these the son of Apollo was by far the most celebrated. It is he who was the founder of the first temple, and it is to him that the tales current amongst the poets and mythologists refer. Of the most important of these we proceed to give a brief sketch.

Asclepius was the son of Apollo by Coronis, daughter of Pilegus. His mother, having succeeded in concealing her pregnancy, exposed the child upon Mount Myrrha, afterwards called Thithum, in Arcolis, near Epidauros. A shepherd, missing his dog and one of his goats, sought the wanderers throughout the country; and at last found them, the dog keeping watch over a child enveloped in flames, which the goat was snuffing. The herdsman, thinking that it was something divine, and being frightened, went away; but he spread the maraud abroad, and it was soon noted over all the Ambracian country, which could heal every disease, and, besides, bring the dead to life.

Another version of the story says, that Apollo, in a fit of jealousy, having caused the mother's death, the un-born child was snatched by Mercury (or if Mercury to Pindar, by Apollo himself) from her funeral pile. The story of him may be connected with the other story, which assigns the parentage of Asclepius to Mercury.

According to Pindar, Apollo sent the child to be educated by Centaur, who, when he found him in medicine, as at an after-period of his Achilles. Having reached manhood, he went with Castor and Pollux on the Argonautic expedition. Returning to Greece he practised with eminent success, withstanding all diseases, but recalling the dead to life. Among others, he cured Marsyas, who, having meddled with the Muses, went to Mount Parnassus, and was killed. This Muses, son of Theon, * the gods regarded this act as an invasion of their privileges, and at last Zeus (or Jupiter) struck the bold practitioner dead with lightning, in consequence of a complaint lodged by Pluto, that the infernal regions were entirely depopulated by these new procedures. Apollo revenged the death of his son by killing all the Cyclopes who forged thunderbolts for Zeus. Finally Asclepius was raised to heaven, and made a constellation, under the name of Ophiuchus, the serpent-holder; thou some say that Ophiuchus is Hercules.

In the time of Homer, liberal secedism was very prevalent, and it was the fashion to see allegory in every mythological story, the whole was thus explained: Aesculapius signified the air, the medium of health and life. The son was his father, because the sun, slumber his curse, and so Aesculapius. He properly told, which mentioned the temple, and the state of the atmosphere. The same spirit is visible in the names given to his daughters, which all but one bear reference to the father's art: Hygeia, health; Panakiea, universal remedy; Iaso, healing; Aigle, splendour.

In Gaul, at the original secedism. Asclepius worship was in the neighbourhood of his birth-place, at Epidauros: where a splendid temple was erected to his honour, adorned with a chryselephantine (gold and ivory) statue, half the size of the statue of Olympian Jupiter at Athens. He was represented sitting on one hand, the bow resting on a serpent's head; a dog crouched at his feet. In other and ancient remains, he is commonly seen with a long beard, holding a staff with a serpent uncoiled about it. Other emblems were the roll of parchment, or the owl. The cock was commonly sacrificed to him, as is familiarly known from the last words of Socrates, as reported by Plato, * Criton, we owe a cock to Asclepius. These animals seem meant to typify the qualities which he signified in his father; the ox and the cock, wisdom, the cock of vigilance, the serpent of sagacity, and, besides, of long life. The latter was especially sacred to Asclepius. At Epidauros there was a peculiar breed of yellowish-brown snakes, of large size, harmless, and easily caught, which frequented the temple, and in the form of which the god was supposed to manifest himself. In this shape he was conveyed to Sicyon, and at a later period, A. about 400, to Rome, when that city, being afflicted by pestilence, sent an embassy, at the command of an oracle, to the temple of Asclepius, with instructions for ambassadors being introduced into the temple, a serpent came from under the statue, and glided through the city, and on board their ship. This was the god, who, in this billy shape, signified his willingness to accompany them, as representing the sea, when he swam up the island on which his temple afterwards was built. A few inscriptions have been found in this island relating cures, and the means employed. The means are of such a nature that the cures must have been impostures, or have been wrought by means external to the god. It was customary to place similar inscriptions in all temples of Asclepius. At Epidauros, there were stones in the sacred precinct, erected in commemoration of cures performed by the god, recording, in the Doric dialect, the number and species of cures, and the number of days employed. Six of these remained when Pausanias visited the place; and, besides, an ancient pillar, commemorating the gift of twenty horses by Hippolytus, in gratitude for his restoration to life. Similar temples of superstition may still be seen even in our own country. At least such did exist, a few years ago, at the well of Holywell, in Flintshire.

Of the extent of Asclepius's knowledge, and of his method of practice, or rather of that which prevailed before him, we have no direct information. His sons, Melanion and Polidario, who fought before Troy and are often mentioned in Homer, seem only to have meddled with external injuries. Pindar, in a passage of rather doubtful meaning, seems to define the father's skill within the sphere of his practice, which was self-produced ulcers, wounds from brass or stone, or injuries from summer heat, or cold. His remedies, on the same authority, were incantations, soothing drinks, external applications, and the knife. There is a remarkable passage in which Plato (Rep. i. 314) mentions against the efficacy of his own times, contrasts the attention of physicians to diet, exercise, &c., with the negligence of the sons of Asclepius in these respects, quoting a passage from Homer, wherein, on the contrary, he says that Asclepius is so perfectly acquainted with all complicated diseases, that he can immediately mark the source of all ulcers, and from a wound in the flesh, can at once pronounce the nature of the ulcer.
through ignorance to teach his sons gymnastic medicine, by which he means diet, exercise, and every sort of care by which a weak constitution can be strengthened; but rather that the god meant medicine to profit those only who had some accidental ailment, but sound constitutions. This was the reason that Maesa and Podalirius paid no attention to their patients, except to dress their wounds; if the men were sound, wine and cheese would not hurt them; if not, let them die, and make room for better men. The argument is well suited to the general tenor of Plato's book: a simpler inference is, that Asclepius does not give prescriptions relative to diet, and the treatment of internal diseases, because he knew nothing about the matter. The passage is, at least, good evidence as to what the Asclepiad practice was supposed to be in Plato's age. Gymnastic medicine was introduced by Herodotus about 460.

For some centuries after the Trojan war, medical science, if it deserves that name, seems to have been confined to the temples of Asclepius, in which his descendants, the Asclepiads, who formed the priesthood, were alone allowed to practice. They were marked as the beauty of their flowers and leaves, and for their forming in some sort a type of tropical vegetation in northern latitudes. It must not be confounded with the Asclepius of the Romans, which was a kind of oak. See Quercus. The best known species is the common horse-chestnut, Aesculus hippocastanum, a handsome tree, formerly much used for avenues, and still extensively planted wherever round masses of wood, or gay flowering trees, are required. Its bark and its nuts are also among the more useful products that the hardy trees of this climate yield. A horse may be very healthy, as in the Regent's Park; in rich alluvial soil, it acquires its greatest beauty. The timber is soft and spongy, and therefore of little value. There are no very old specimens in this country, the species having been introduced, as it is said, only in 1683; one of the most ancient is now growing opposite the Roebeck Inn, in the village of Lewisham, in Kent, of which the following is a view.

Aesculus, or the Horse-Chestnut, is a genus of plants belonging to the natural order Hippocastanaceae. It consists of trees found in the temperate parts of America and Asia, in markings for the beauty of their flowers and leaves, and for their forming in some sort a type of tropical vegetation in northern latitudes. It must not be confounded with the Aesculus of the Romans, which was a kind of oak. See Quercus. The best known species is the common horse-chestnut, Aesculus hippocastanum, a handsome tree, formerly much used for avenues, and still extensively planted wherever round masses of wood, or gay flowering trees, are required. Its bark and its nuts are also among the more useful products that the hardy trees of this climate yield. A horse may be very healthy, as in the Regent's Park; in rich alluvial soil, it acquires its greatest beauty. The timber is soft and spongy, and therefore of little value. There are no very old specimens in this country, the species having been introduced, as it is said, only in 1683; one of the most ancient is now growing opposite the Roebeck Inn, in the village of Lewisham, in Kent, of which the following is a view.

Aesculus, or the Horse-Chestnut.

Two varieties of the horse-chestnut are cultivated by gardeners; namely, the gold-striped and the silver-striped, but they are mere curiosities.

A second species, the Aesculus oblonga, is found wild in North America, on the banks of the Ohio, between Pittsburgh and Marietta. In stature it varies from ten to thirty-five feet; and differs from the common kind in having larger and much more undulated leaves. In America, it flowers very early in the spring, producing large bunches of blossoms of a pure white. It has been cultivated for some years in this country, but has never flowered. Besides these, a third species, Aesculus cornuta—or, as it is sometimes called, Aesculus rubricauda, or rowan—is occasionally met with in gardens. Its origin is unknown; it differs from the common horse-chestnut in not attaining so large a size, and in having deep rose-coloured blossoms of striking beauty. For all purposes of ornament, this is much superior to the common kind.

Under the genus Aesculus it is customary to include the buck's-eye chestnuts of North America; but, as these species have a peculiar habit, and a fruit the surface of which is destitute of the spine with which the shell of the horse-chestnut is armed, they are now distinguished by the generic name of Pavia, which see.

The two first species of horse-chestnut are propagated by sowing their seeds either in the autumn at such a depth below the surface as to be secure from the attacks of mice, or else in the spring; but in the latter case they must be preserved during the winter in heaps of sand. The seeds should not be placed less than six inches apart in the beds, because the leaves are so large as to require more than usual space to expose themselves to light.

The last species, and the varieties of the first, not yielding seeds, are multiplied by budding upon the common horse-chestnut.
n. c., contemporary with Solon and Pissistratus. He is usually acknowledged as the inventor of those short moral fictions to which we especially appropriate the name of fables. The popular stories of him are derived from a Life, written and preserved to a collection of Fables, bearing the name of Aesop, by Maximus Planudes, a Constantinopolitan monk, about the middle of the fourteenth century. This contains a distorted view of the few incidents in his history which can be said to be known, mixed with a collection of impossible adventures, and represents Aesop himself as a monster of personal deformity, apparently for the sake of contrasting his wit and acuteness with his bodily defects. This Life is now given up, by general consent, as totally unworthy of credence. His ugliness is still commemorated in almost every account of him, although it depends for its acceptation solely, as we believe, on the justly-contended authority of Planudes, and probably was devised to attract readers by a strong desire to construct a monster capable of the capacity of the slave may be set off by the insecurity of the master; and Tadmon, or Idmon, another Samian, by whom he was enfranchised. He acquired a high reputation in Greece for that species of composition which, after him, was called Aesopical. The reason of this consequence was sought by Crusus to take up his abode at the Lydian court. Here he is said to have met Solon, and to have rebuked the sage for his un- considerate way of implicating moral lessons.

In a visit to Athens during the usurpation of Pissistratus, and to have composed the fable of Jupiter and the Frogs for the instruction of the citizens (Phæbus, 1. 2). Being charged by Crusus with an embassy to Delphi, in the course of which he was to distribute a sum of money to every Delphian: a quarrel arose between him and the citizens, in consequence of which he returned the money to his patron, alleging that those for whom it was meant were unworthy of it. The disappointed party, in return, got up a charge of sacrilege, upon which they put him to death. A peculiar sensation of this fact was attributed to this crime, in consequence they made proclamation at all the public assemblies of the Grecian nation, of their willingness to make compensation for Aesop's death, to any one who should appear to claim it. A grandson of his master, Lason, turned into verse 'those that he knew,' and Plato, who abounds the fictions of Homer from his ideal republic, speaks with high praise of the tendency of those of Aesop. Demetrius Philerus made a collection of Aesopian fables, and we hear of two metrical versions of them, of still later date, one by an Athenian author, the other by Bathyllus. Philemon published a collection of fables in Latin verse, in the time of Tiberius, the materials of which he professes to have taken from Aesop; and it is not improbable that the nearest approach to the substance of the original apologies may have been imitated from these. The fables of Aesop are generally said to be the same with the fables of Philemon, the oldest to which we can assign a certain date, may be, believed, for the reason already assigned, to have originally emanated from the Grecian author. The total number of them is about 290, one by an anonymous author, the other by Bathyllus, those published by Planudes, in number 144, which contain internal evidence that, as far as composition is concerned, they are of late date, and probably written by Planudes himself; and a second collection, of 156, first published in 1473, and resembling the MSS. of the MSS. B, C, and E, to be observed that not one of these MSS. contains the fables published by Planudes; and that the editor expresses his belief that they are the work of different hands. Some of the characteristics which he attributes to the models by which he has been influenced to estimate his works are, in at least sufficient evidence of their late date. This edition, which is a sort of copia fabularum, contains 297 fables ascribed to Aesop, and are the rhetorician Aphantus, who lived in the third century, besides various metrical versions.

The Greek philosopher and fabulist Lokman is supposed by many to have been the same person as Aesop. He, the former, by the Mohammedan authorities, is made contemporary with David and Solomon; but his history is too uncertain a fact for us to speculate upon it. It is, however, certain that the same fables are to be found current under the names of each, and that the correspondence between their personal histories, as commonly told, is too close to be entirely accidental. [See BABRIUS, LOKMAN.]

EST. 

ÆSTHETICS (Esthetics) are the sciences of beauty, its properties, and the sense of it. Its earliest development is given by German writers to a branch of philosophical inquiry, the object of which is a philosophical theory of the beautiful, or, more definitely expressed, a philosophy of poetry and the fine arts, and which has by them been raised to the rank of a separate science from word Esthetic. [This derived from the Greek verb ἔσοπον, (I feel, or I am sensible), and was first used as a scientific term by Alexander Baumgarten, a disciple of Christian Wolf, who in his Æsthetics (Frankfurt. 1750-58, 2 vols. 8vo.) considered beauty as a given property of objects, and its perception as an act of the mind, and beauty, says Baumgarten, wherever we meet with perfect manifested in reality, and a thing is perfect if it is adequate to its notion: beauty, accordingly, is the perfectness of an object manifested in its appearance. The importance of beauty, in fact, the laws of conscious beauty must be inferred from the Winkelmann, who, without emboldening his views in a regular system, developed them chiefly in reviewing and appreciating the remains of ancient sculpture. He adopted neither Baumgarten's 'adequateness of an object to its notion, nor the Edmond Burke as the criterion of beauty; but considered the idea of beauty as dwelling in the divine mind, and as passing over from that source into individual objects. Kant denies the possibility of a strict scientific definition of beauty; according to him, beauty is not a property of objects, but has its origin in the disposition of our mental faculties. We presuppose, says he, that some notion is contained in the apparent object, though we are unable abstractedly to express it; but not that notion it is a true notion. Our notion has no power to transform the formation of the manifold displayed before us, though we cannot precisely define that purpose,—and this supposition or assumption forms the basis of our perception of beauty. Schelling's view of beauty and art is difficult to state concisely. He calls the transcendental idealism' establishes the principle, that mind and nature, or conscious and unconscious existence, are primarily identical; that the laws discoverable in nature must accordingly be the laws of consciousness, which is the reason, the laws of consciousness must be recognized as being likewise the laws of nature in the divine mind.
both exist in absolute identity. The artist is to produce in his mind an intellectual intuition analogous to this identity, and the expression which he gives to the identity thus arrived at is the work to be sold. The relation to Schelling, a transcendental philosophy of the principle of art where the infinite appears contained in, or represented by the finite, or where, in the very object, the difference between the conscious and the unconscious (mind and nature) is annulled.

The three times into which men may be led, allow some measure to characterize the points from which some of the principal German philosophers have started in their respective systems of aesthetics. We think it not irrelevant to remind our readers that it is almost impossible to condense within a few words the density of the subject. We have seen Schelling's plain and to discuss; and also, that the opinions of any philo-

sopher reported in a foreign language are always apt to appear to disadvantage, but more particularly so when the language in which they were originally expressed affords such wonderful facilities for the utterance of speculative thought than the German.

Most German writers, who have published systematic treatises on aesthetics, have, with greater or less independ-

ence, been the preachers of Baumgarten, Kant, and Schelling. They commonly divide their productions into a general part, or a discussion of the essence of beauty and art, and a special one, or an inquiry into the peculiar character and predominant principles of the several branches of the art of beautifying the objects of sense. Thus Grundrisse der Ästhetik, Landshut, 1807, and Grundlinien der Ästhetik, Landshut, 1813, by the same author. Jean Paul's ('F. Richter's) Vorlesungen über Ästhetik, in his System der theoretischen Philosophie, Königsberg, 1816, in 8vo, and his System der ästhetischen Vorschule, Grundriss der Ästhetik, Landshut, 1813, by the same author. Jean Paul's ('F. Richter's) Vorlesungen über Ästhetik, in his System der theoretischen Philosophie, Königsberg, 1816, in 8vo, and his System der ästhetischen Vorschule, Grundriss der Ästhetik, Landshut, 1813, by the same author. Jean Paul's ('F. Richter's) Vorlesungen über Ästhetik, in his System der theoretischen Philosophie, Königsberg, 1816, in 8vo, and his System der ästhetischen Vorschule, Grundriss der Ästhetik, Landshut, 1813, by the same author. Jean Paul's ('F. Richter's) Vorlesungen über Ästhetik, in his System der theoretischen Philosophie, Königsberg, 1816, in 8vo, and his System der ästhetischen Vorschule, Grundriss der Ästhetik, Landshut, 1813, by the same author. Jean Paul's ('F. Richter's) Vorlesungen über Ästhetik, in his System der theoretischen Philosophie, Königsberg, 1816, in 8vo, and his System der ästhetischen Vorschule, Grundriss der Ästhetik, Landshut, 1813, by the same author. Jean Paul's ('F. Richter's) Vorlesungen über Ästhetik, in his System der theoretischen Philosophie, Königsberg, 1816, in 8vo, and his System der ästhetischen Vorschule, Grundriss der Ästhetik, Landshut, 1813, by the same author. Jean Paul's ('F. Richter's) Vorlesungen über Ästhetik, in his System der theoretischen Philosophie, Königsberg, 1816, in 8vo, and his System der ästhetischen Vorschule, Grundriss der Ästhetik, Landshut, 1813, by the same author. Jean Paul's ('F. Richter's) Vorlesungen über Ästhetik, in his System der theoretischen Philosophie, Königsberg, 1816, in 8vo, and his System der ästhetischen Vorschule, Grundriss der Ästhetik, Landshut, 1813, by the same author. Jean Paul's ('F. Richter's) Vorlesungen über Ästhetik, in his System der theoretischen Philosophie, Königsberg, 1816, in 8vo, and his System der ästhetischen Vorschule, Grundriss der Ästhetik, Landshut, 1813, by the same author. Jean Paul's ('F. Richter's) Vorlesungen über Ästhetik, in his System der theoretischen Philosophie, Königsberg, 1816, in 8vo, and his System der ästhetischen Vorschule, Grundriss der Ästhetik, Landshu...
It will appear, from the annexed statement, that the formation of sulphuric acid is necessarily attended with that of water, thus —

Alcohol

Carbon, Hydrogen, Oxygen

24 + 6 + 16 = 46

Sulphuric acid 80 + 20 + 4 = 104 sulphuric acid.

Consequently there remain

2 + 16 = 18 two atoms water.

When the sulphuric acid is heated, decomposition ensues, and the sulphuric acid in its original state remains in the retort, while the carbon and hydrogen with which it constituted sulphuric acid, combine with the elements of one of the other formed from the alcohol, and other results from their union, thus:

Four atoms of carbon 6 x 4 = 24 from the sulphuric acid
Four atoms of hydrogen 1 x 4 = 4 decomposed
One atom of oxygen 1
One atom of oxygen 1
5 atoms water.

One atom of ether 37

One atom of water, formed from the oxygen and hydrogen of the alcohol, remains in the retort after the sulphuric acid, which, although unchanged in its nature, is so weakened by this addition, that it cannot, in the second operation, form as much ether as in the first; on this account it will be observed that we have directed only half a pint of alcohol in the second, instead of a pint, as in the first distillation.

The elements which form ether may be regarded as existing in two modes of combination—first, as constituting a ternary compound of oxygen, hydrogen, and carbon; and secondly, as forming the union of two binary compounds, viz., water and bicarburet of hydrogen (obtained gas): thus 8 parts of oxygen and 10 of hydrogen form 9 of water, and 24 of carbon + 4 of hydrogen constitute 28 of oxygen gas. Although it is entirely hypothetical, yet some plausible view will be given to the value of the subject by comparing the specific gravity of the vapour of ether (which, as has been already stated, is nearly 2.544), with that which would result from the condensation of one volume of the vapour of water and two volumes of theficient gas into one volume; the specific gravity of this compound would by calculation be 2.569, which certainly comes very near the experimental specific gravity of the vapour of ether.

Sulphuric acid has been mentioned as arising during the action of the sulphuric acid on alcohol in the retort; and as its production is not accounted for in the explanation which has been given of the formation of ether, it is proper to state that it is an accidental and not a necessary result. When more sulphuric acid is used than is required to convert the alcohol into ether, the excess becomes decomposed, and is decomposed by the alcohol, so as to leave unchanged in the retort, and to evolve sulphuric acid. Mr. Henndall found, after an operation in which the proportions of acid and alcohol had been nicely adjusted, that only 1.75th part of the sulphuric acid was lost, no colored gas being deposited in the retort, nor was any sulphuric acid evolved. Mr. Henndall also proved that sulphurate of potash and sulphuric acid, if but little water was present, yielded ether, without using any alcohol: but if more water was employed, then the product was alcohol, without any ether.

Phosphoric ether is prepared by the action of phosphoric acid upon alcohol; the phosphoric acid appears to be converted into phosphoric acid, as the sulphuric acid is into sulphuric acid; the product produced is precisely similar to sulphuric acid.

Arsenic acid also forms ether when distilled with alcohol; the acid probably undergoes changes similar to the sulphuric and phosphoric acids, and the resulting ether is of the same kind. (Lassagne, Annales de Chemie et de Phys. t. xiii. p. 291.)

Therand and Gay-Lussac (Recherches Physico-Chimiques, ii. 39) discovered that phosphine and alcohol produced ether by their mutual action: the product is of the same nature as that just mentioned, but those authors did not extract the elements of water from the alcohol by direct action, and without undergoing the changes suffered by the sulphuric, phosphoric, and arsenic acids; this, therefore, must be considered as the simplest case of the formation of ether.

It will be observed, that the acids which occasion the formation of the ethers already described do not enter at all into their composition; but in these now to be mentioned, the aethereal medium generally forms a part of the product.

Chlorine ether may be obtained by heating in a retort a mixture of 10 parts of alcohol, 16 of sulphuric acid, 13 of common salt, and 6 of peroxide of manganese; the distilled product is to be mixed with water, and the ether which floats on it is first to be washed with a weak solution of potash, and then with water. Chlorine ether is, from a taste, colourless, of an agreeable smell, and an acid taste. Its specific gravity is 1.134. It boils at a lower temperature than water, is very combustible, burns with a green flame, yields muratic acid during combustion, and leaves a green ash. It is composed of 55.45 parts of chlorine, and 44.55 of bicarburet of hydrogen in 100 parts.

Muriatic ether is prepared by distilling a mixture of sulphurous acid and alcohol. It is colourless, and has a strong penetrating acrid smell; its taste is slightly sweet: its specific gravity is 77.4, according to Thenard, but other authorities make it heavier. It is extremely volatile, and consists of muriatic acid and the elements of olefain.

One atom of of sulphurous acid + 1 atom of formaldehyde gives 2 atoms of hydrogen, 1 atom of carbon, 4 atoms of oxygen, and 1 atom of sulphur.

One atom of sulphuric acid + 1 atom of aether gives 3 atoms of carbon, 4 atoms of hydrogen, 2 atoms of oxygen.

One atom of nitrous acid + 1 atom of alcohol gives 1 atom of carbon, 3 atoms of hydrogen, 2 atoms of oxygen.

One atom of nitrous acid + 1 atom of alcohol gives 1 atom of carbon, 3 atoms of hydrogen, 2 atoms of oxygen.

It is sometimes, though rarely, used in medicine.

ETIOPIA. [See Ethiopia.]

ÆTHIUSA. is a genus belonging to the natural order Umbellifere, which includes among its species one of the most poisonous plants known to Europe. As many fatal accidents have occurred from the incautious use of its leaves, we shall give a minute description of it, for the purpose of enabling our readers to recognise it with certainty.

Æthusa cynapium is a little annual plant, found commonly in sandy or gravelly places, but also in arable and common fields, and in the borders of roads. The leaves are divided into a deep green, much branched, and serrated lobes. The flowers are white or pink, and it is found in the Æthiopian Desert, on the other hand, the
leaves are three pinnate, and the leaflets are narrow, sharper, and jagged; besides which, the leaves of Fool's Parsley have a disagreeable nauseous smell, instead of the fine aromatic odour of Common Parsley. When in flower, 

\[
\text{Athousa} \text{ has its principal umbels destitute of involucres, while the partial umbels are furnished with an involucrum, consisting of four or five narrow, sharp leaves, hanging down from one side only of the common stalk; this last circumstance will distinguish it when in flower, not only from parsley, but from all other British umbelliferous plants.}
\]

[ Athousa Cymapum. ]

Many dangerous accidents have occurred from mistaking this plant for parsley. In one case, a person, who had eaten it with salad, died in little less than an hour; and in another of recent occurrence, the patient, although the stomach was emptied at a very early period, sank gradually, and died at the end of a few days. The symptoms attendant upon poisoning by \text{Athousa} are, swimming of the head, nausea, cold perspiration, and chilliness at the extremities.

To counteract its effects, emetics are recommended, and the immediate use of weak vegetable acids, such as lemon-juice, vinegar, or sour wine.

\[\text{ETN} \text{, a celebrated burning mountain, or volcano, in Sicily; it is situated in the north-eastern part of the island, close to the sea-coast, between the towns of Taormina and Catania, distant from one another twenty-five English miles, and is encircled on the north, west, and south by the rivers Alcantara and Simeto. It was called by the Arabs, after the conquest of the island, Jebel en nar, or 'Mountain of Fire': the modern Sicilians call it Mongibello, which is evidently derived from the Italian \text{Monte} and the Arabic \text{ Jebel}, both signifying mountain. Those approach the mountain from the north, and mount to a height of nearly 4000 feet above the sea; and then on the summit of the mountain, which is divided into various branches, and has an area of about 1400 acres, there is a large and deep crater, in which \text{ETN} is situated, called Val Demone, in allusion to the popular notion that the mountain fires issue from the region of demons. It is the greatest volcano in southern Europe, and affords not only a most instructive field for studying that remarkable class of geological phenomena, but exhibits some of the most striking instances of the later revolutions which the crust of the earth has undergone, previous to the historical era; as well as of those changes which are in a constant state of progress, to a greater or less extent, on every part of the earth's surface. To convey a just idea of the structure of this remarkable mountain, it is necessary to begin with a brief sketch of the geological formation of the adjoining country. Sicily, and especially \text{ETN}, has been described by many naturalists, but we are indebted to Mr. Lyell for the most comprehensive general views respecting this volcano, and his observations, from having been recently made, are more in accordance with the present state of science.\]

The Val di Noto, or southern division of Sicily, is composed of a series of strata, belonging to what geologists term the tertiary period; that is, such as have been deposited while some of the species of animals now found in our seas were in existence; all the animal remains occurring in the strata that lie under the tertiary rocks belong to species of which there are no living analogues; the strata in Sicily are associated with lavas and other volcanic products, but these last are not visibly connected with any source, as no volcanic vent exists in any part of the Val di Noto. The uppermost of the strata consist of limestones, full of shells, these united strata are known as the Mediterranean, belonging to a species inhabiting that sea; at this moment, it follows, that those parts of Sicily must have been raised from the deep to that great elevation after the time when the Mediterranean became inhabited by many of the same species occurring in it. During the time that these strata were in the course of being deposited at the bottom of the sea, there must have been considerable volcanic activity in the same region, for layers of hard compact laves, and of that mixture of ashes and limestone called by the Italians \text{peperino}, are interposed between the calcareous and clay strata; and after the whole series had been consolidated, the mass must have been violently rent asunder, for there are cracks that traverse all the beds, and these are filled with hard lavas, containing foliaceous limestone, as described by geologists. That these strata were deposited gradually, and that long intervals occurred between the volcanic eruptions, is proved by the following remarkable fact. In the neighbourhood of Vizzini, which is twenty-five miles in the north of the island, Mr. Lyell observed a species of \text{ETN} and \text{peperino}, and two other species of similar age, also identified by our common gregarious species, no less than twenty feet in thickness, resting on a current of lava, and covered by a second mass of lava and peperino.

The Val di Noto is separated from the Grande Demone and the region of the extinct plain of Catania, which is watered by the Simeto and its tributary streams. On the northern side of the plain, as we approach \text{ETN}, we discover a low line of hills, which are composed of the \text{inferior} clay stratum of the Val di Noto, and the same argillaceous formation may be traced round the base of the mountain on the south and east, the strata dipping in various directions, sometimes towards the mountain, so that, in their prolongation, they would lie under the volcano. These sub- \text{ETN}ean strata do not rise in any part to a greater elevation than 1000 feet above the sea, and are usually much lower; in some places they are 300 feet thick without any mixture of volcanic matter; in others, as in the vicinity of Catania, they are composed of volcanic tuff, thinly laminated, and form there a steep inclined cliff, from 500 feet to 600 feet high, that descends from the sea by a low flat, composed of recent lava and volcanic sand. The sea-cliffs, northward of Catania, are formed of the same sub- \text{ETN}ean marine strata, as are the rocky islands lying off this coast, the Faraglioni, the column-like strata, on the island of Faraglioni, or Fingal's Cave in Staffa. This lava appears to have heaved up the stratified marly clay, for it is contorted in the most extraordinary manner, and is in some places...
hardened by the action of heat. These islands, therefore, have not been formed, as has been sometimes supposed, by a stream of lava from Etna, for the lakes of the islands underlie a stratum which underlies the volcano.

Such, therefore, is the nature of the soil from out of which the stupendous volcano has arisen. Whether it has been formed by successive eruptions subsequently to the elevation of Sicily above the level of the sea, the observations hitherto made do not enable us to decide; it is more probable that it was partly formed prior to that elevation, and rose at the same time; and it may have projected as a cone from the surface of the water, vomiting forth volcanic matter, as Stromboli now does. But this will be better understood when we have described the structure of the volcano as it now presents itself, and have given an account of some of the most remarkable eruptions.

[Plan of Etna, from Captain Smyth's survey.]

The base of Etna covers an area of nearly ninety miles in circumference, and, according to the late measurement of Captain Smyth, the highest point is 10,374 feet above the level of the sea. Owing to this great elevation, the higher parts of the mountain have a climate almost as different from the valleys at its foot, as are the polar from the equatorial regions; and from this cause, together with the difference in the nature of the soil, there are three great natural divisions or zones in the mountain, the fertile, the woody, and the desert. The lowest is called the Parle Pimentone, merely expressing that it lies at the foot of the mountain; it is a beautiful, rich, and populous country, covered with luxuriant fields of corn, vines, and fruit trees. The limit cannot be very well defined, as it insensibly blends with the next, the Regione Selvosa, or the woody, which is covered by immense forests of chestnuts, oaks, beeches, and pines, forming a zone six or seven miles in width, the superior limit being about 6300 feet above the sea. The third and highest region, called the Parle Scoperta, the bare or desert, rises nearly 4600 feet higher. About 1100 feet from the summit there is an irregular plain, which, when Sir W. Hamilton visited it, about sixty years ago, was estimated to be nine miles in circumference, and from this plain rises the steep terminating cone, at the summit of which is the great crater or opening, continually throwing out sulphurous vapours. The dimensions of the crater have been variously stated by different travellers, the circumference from two and a half to four miles, and the depth from 600 to 800 feet; but the height of the cone, the diameter of the crater and its depth, are liable to constant change from the eruptions. The cone has more than once fallen in and been reproduced; in the year 1444 it was 320 feet high, and fell in after the earthquake of 1357. In 1693, when a violent earthquake shook the whole of Sicily and killed 60,000 persons, the cone lost so much of its height, that it could not be seen from several places in Val Demone, where it was before visible. Although, taken as a whole, the cone forms a cone with a general profile of a very symmetrical form, when examined in detail it is found to be studded on its flanks, and particularly in the woody region, with numerous minor cones; small when compared with the great mass, but of a magnitude that would make them rank among the most enormous detached cones of the earth. One near Minardo, near Bronte, is upwards of 700 feet in height, and the Monti Rossi near Nicolosi are 450 feet high, and have a base of two miles in circumference, although ranked among the cones of the second magnitude. There are about eighty of these considerable cones, and they have all been produced by lateral eruptions of lava and ashes. By subsequent eruptions a cone is often surrounded by a lava stream or ashes, and thus its height is diminished: a repetition of the process often causes its entire disappearance. The sections exposed to view in many parts of the mountain show that the greater part of it has been formed in this way. The eastern side is broken by a deep valley of colossal dimensions, called the Vai di Bove. This is a vast amphitheatre four or five miles in diameter, surrounded by vertical precipices, varying from 1000 to 3000 feet in height, and which, taken in connexion with other valleys that lead into it and each other, descend from near the summit to the confines of the fertile region, and exhibits a vast part of the interior cone of the mountain, to the depth of from 4000 to 5000 feet. In these sections are seen layers of tufa interstratified with lava, and, towards the summit, these layers are broken up by fresh eruptions of lava from below, and are disturbed by the successive intrusion of lateral cones. In the Vai di Bove the beds of lava traversed in all directions by enormous dykes: they project from the precipices, towering vertically to a great height, and varying from two to twenty feet in breadth. The Vai di Bove forms one of the grandest features of Etna to the eye. An unusual beauty accompanies the action of the mountain, where the black outline may often be seen relieved by clouds of fleshy vapour which settle behind them, and do not disperse until mid-day, continuing to fill the valley while the sun is shining on every other part of Sicily, and on the higher regions of Etna. The forest of the Vai di Bove is perhaps the most celebrated in the world; the water is clear and cold, no torrents dashing from the rocks, nor any movement of running water in this valley, such as may almost invariably be heard in mountainous regions. Every drop of water that falls from the heavens, or flows from the melting snow and ice, is instantly absorbed by the porous lava, and such is the depth of springs, that the herdsman is obliged to supply his flocks during the hot season from masses of snow laid up in hollows of the mountain during winter. The strips of green herbage and forest land, which have here and there been depredated by erupting lava, nowhere suffer the desolation of the scene. When I visited the valley, nine years after the eruption of 1819, I saw hundreds of trees, or rather the white skeletons of trees, on the borders of the black lava, the trunks and branches being all completely deprived of their bark, by the scorching heat emitted from the melted rock. This vast cavity in the mountain has none of the characters of a crater, but has probably been produced by a combination of different causes: great inundation by lateral explosions, and by the great number of lateral fissures, which, even in historical times, it has been known to have been devastated, when a fiery torrent of lava had suddenly overflowed a great depth of snow in winter. The phenomena of the Vai di Bove, as well as the peculiarities of the sub-Etna strata, are quite at variance with Von Buch's theory of the elevation of volcanoes from craters of elevation; a theory which, like another of that celebrated geologist, has not stood the test of rigid examination, and which has been too hastily adopted by many eminent naturalists, from the faith we are naturally inclined to
repose in an authority, which we know to be entitled to great respect.

The records of history supply no materials from which we can arrive at any knowledge of the gradual growth of the mountain, for the additions to it from the accumulated products of the eruptions that have taken place in the period of history, great as they are, become quite insignificant when contrasted with the entire mass of the volcano. But if we compare the time that has elapsed since that comparatively thin covering began to be formed, with that which has in reality in the period of the four centuries, the remaining part, we shall form the most exalted notions of its remote antiquity. We have no ground for supposing that the altitude of Etna has materially varied within the last 3000 years. Of the eighty most conspicuous lateral eruptions, there are recorded with precision within the period of authentic history. Every eruption does not produce a lateral cone, for in one three takes place from the crater at the summit; also when an opening is made in the flanks, a cone is not always produced, and many eruptions must have taken place from the sides, besides those which raised the eighty cones above-mentioned. We know, also, that there have been great intervals of rest between the eruptions, almost a century in some instances; so that, except in the cases of those eruptions it amongst the earliest of these cones, some thousand years prior to the his- torical era. But we may reasonably carry our views of the antiquity of the volcano much beyond even that remote date. If, indeed, our memory fails us in the case of the earliest times, the entire matter which has been ejected from them and from the highest crater during the period of their growth, we should cut off several miles of the diameter of Etna at its base, and diminish its elevation by some hundreds feet; but we know that the most part of this avalanche must remain in Sicily. That stupendous mass of volcanic matter must have been ejected subsequently to the formation of stratified rocks containing the remains of animals identificable with those now living in the adjoining seas; rocks, be it remembered, that were raised from the floor of the ocean, and which are occasionally seen, by the English ships, near theosaic. It is about 450 feet high, and two miles in circumference.

In the plain of S. Lio, a fissure six feet broad and of an unknown depth opened with a loud crash, and ran in a some-what tortuous course to within a mile of the summit of Etna, traversing a length of two miles, and with a vivid gleam of a vivid light. Five other parallel fissures of considerable length opened one after the other, and sent forth smoke and bel- lowing sounds, which were heard at the distance of forty miles. The light glowed from the reflection of the gathering cloud. There are indications that it fell to a certain elevation with incandescent lava, probably to the height of an orifice not far distant from Monti Rossi, which at that time opened and poured out a lava current. This stream, after over- flowing the thirteen towns, some of which were between 3000 and 4000 inhabitants, at last reached the walls of Catania, which had been purposely raised to protect the city; but the burning flood accumulated till it rose to the top of the rampart, which was sixty feet in height, and then thence down this barrier, over an extent of ten miles. The wall, however, was not thrown down, and the solid lava may still be seen curling over the top of the rampart like a cascade in the act of falling. This great current had performed a course of fifteen miles before it entered the sea, where it was still 600 yards broad and forty feet deep.

The eruption of 1792 is thus described by Ferrara:—On the first days of March the mountain emitted thick clouds of smoke, and at night flames were seen to rise to a consid- erable height. On the 6th it shook violently, and for several days awful roarings were heard, which appeared to proceed from the innermost cavities of Etna. During April the mountain was tolerably quiet, except that smoke and flames were occasionally seen issuing through the north and the beginning of May immense masses of smoke rose in perpendicular columns, and on the 11th lava was seen to flow from the great crater. Meantime shocks of an earthquake were felt at Messina; and on the morning of the 12th the internal road was interrupted, the black smoke rose in the air in the shape of a gigantic tree, spreading its top to an immense extent around, and in the midst of these dense masses of black smoke were seen numerous globes of white smoke as fleecy as cotton. Towards eleven o'clock A.M. of the 13th, another and a larger shower of these globes of white smoke was heard and felt all around the base of Etna, followed by a hollow rumbling noise, and the black smoke arose with fresh violence. In the evening the lava flowed down the slopes of the mountain, and, after some intervals, another stream poured towards Aderno, and another ran to the south-east into the valley of Triviglieto, and stopped at Zoccolaro, ten miles from the crater. On the 13th, the mountain became more
quiet, and remained so till the 23d, only sending forth a shower of ashes and hot sand, which fell all around its sides. On the 23rd the black smoke reappeared; and the next day a new month opened itself in the plain Del Lago, about three miles south-east of the great crater, and to the west of it, a large mass of lava and scoriae were thrown to a great height, as well as masses of clay, moist and soft. On the 26th, another month opened in the same direction, and vomited a stream of lava which fell into the valley of Triglifletto, and on the following day nearly filled the valley. On the 1st of June, a large month opened itself half-way up the southern side of the cone of the mount, on the heights called Del Solitario, facing Catania, and from it a large torrent of lava issued forth over the immediate slopes of the mountain, reaching the town of Mounte Argano, one of the numerous conical hills which rise round Etuna. The stream was then forced round into a valley 400 feet deep, which had been formed by a crater, and which sloped down to the eastward into the cultivated plain and the vineyards. The lava soon filled up the valley, where it began to harden; but the liquid stream from the heights still pouring in pressed against it, so that now and then an enormous umbrella formed by the molten lava would be thrown itself, and shattered; some distance down the declivity it would break up with a tremendous crash into a thousand fragments, and cover a fresh extent of ground. The lava stream entered, in this manner, the vineyards of Zaffara, and approached the village of Filicudi. When it entered the village, it was represented as a huge column, or cones which were hurled over the houses from where the inhabitants were all ready to fly. The sight is described by Ferrara as extremely awful and grand, especially by night. The eruption continued for a whole year, till May, 1792. The torrent of lava, in its descent, at first overflowed the fields itself, and became condensed at a certain distance, and thus formed a dyke against the current of fresh lava which swelled up and overflowed its own bed, increasing in height at every fresh earthquake. The current of lava, and the molten avalanche of lava, have been more than 300 feet high. The stream of lava sweeps the ground on which it flows, carrying with it the earth, stones, trees, and other substances which it finds in its passage. At a short distance from the town, the lava becomes covered with a crust of cinders, which increases in thickness progressively, the lower part of the stream remaining to flow underneath like a liquid paste. The torrent sometimes forms bridges over the fiery stream usually strong to bear a person.

In 1819, three large mouths or craters opened very near those formed in an eruption eight years before, from which flames, red-hot cinders, and sand were thrown up, with loud explosions. A few minutes afterwards another mouth opened itself, from which the same effects were produced, and finally, a third, lower still, from which a current of lava flowed, which spread itself with great violence over the Val di Bove. The five original mouths united into one large crater, and sent forth lava, as did the interior apertures, so that an enormous torrent poured down the great valley. When it arrived at a vast, and almost perpendicular precipice, at the head of the valley of Catania, it poured over in a cascade, and, being hardened in its descent, made a tremendous crash, as it was dashed against the bottom. So immense was the column of dust raised by the abrasion of the turbulent fall over which the hardened mass descended, that the Catanienses were in great alarm, supposing a new eruption to have burst forth in the south-east of the island. Some people even endeavored to extinguish the flames by throwing water and sand upon them. The following account of the eruption in the beginning of November, 1812, is by Professor Gemmellaro, of Catania, whose letter is dated the 15th of November. *On the 31st of October, at half past two in the afternoon, several tremblings of the earth, accompanied by the most terrific subterranean noises in the woody region of Etuna, announced an eruption; but as the mountain was enveloped in clouds, the place could not be exactly ascertained. In the middle of the night the clouds gradually cleared off, and the appearance appeared to the eye of a person that the volcano had broken out in two places, one of which was at the foot of the highest cone towards the S.W., at a height of 9,600 feet. From several small orifices of the crater, ashes, sand, and cinders were thrown out; and one of them poured forth a small stream of lava, in the direction of Gemmellaro, but the old stream of 1787 served as a dyke, and caused it to change its direction. The lava now flowed into the valley of Triglifletto, towards the Cone San Simone (eruption of 1811), the distance it had travelled from its source being about two miles. But these appearances were of minor importance, in comparison with an eruption which took place in the neighbourhood of Monte Grande, near the town of Bronte, and at an elevation of 6200 feet in the upper part of the woody region, near where it ends. Here four months of fire were opened, out of which not only ashes, sand, and cinders, were projected to a vast height, but also two tremendous rivers of lava, with frightful conflagrations, without ceasing, and the subterranean noises were fearful. The explosions from the highest of the openings were very powerful, and continued without intermission. A pillar of flame rose to the height of 1200 feet, and which, far beyond this, was observable to the eye; and what was particularly remarkable, there was a dark blue stripe which rose upwards to a great height, and was a constant accompaniment of the eruption for several days. The four torrents were not, however, a stream of lava hurled forth from the lowest of them, which now threatens to be fearfully destructive: in five days it extended to the distance of four miles; it threatened first the woods of Marretto, but turned afterwards to those of Bronte, and, having been poured into the sea, it did considerable damage; it is at this time only three miles distant from Bronte, a town of 13,000 inhabitants, which it threatens with destruction. The terrific eruption still continues, and has caused the greatest desolation, others have been endeavoring, like the people of Catania at the time of the terrible explosion of 1669, to make the lava stream take another direction, but it is impossible. The volume of lava thrown out was enormous; the finest ashes have been carried as far as this place. The lava is agitated, and contains very few cinders, and it is both crusted and half-buried. The distance of Catania from Bronte is twenty-five miles in a direct line. Happily, the destruction of Bronte has, for the present, been averted, for we learn by a letter dated the 22nd of November, the following further particulars. *On the 14th, the alarm of the inhabitants began to diminish. Nothing could be more terrific than the first appearance. A stream of lava, dividing itself into two branches, eighteen miles long, including all its tributaries, would have overwhelmed the defenceless land. There was also a great amount of sand which fell into the bed of the Simeto, and caused a frightful inundation of the neighbouring country. The greater part of the lava has poured into a large gulf previously opened, and the earthquakes have ceased. A new cone has been thrown up, similar to those around the hills of Etuna, which attest its former eruptions. The town of Bronte has been saved, no lives have been lost, and the damage done is less than was at first apprehended. For more than half the year, the upper part of the mountain is covered with snow; and it forms the great store from whence Sicily and Malta are supplied in summer with water and ice. In the spring it gives the celebrated Hockey to the bishop of the diocese, and constitutes a great article of commerce. 'A remarkable discovery,' says Mr. Lyell, 'has lately been made on Etuna, of a great mass of ice preserved for many years, perhaps for centuries, by being surrounded by sand during the summer and autumn of 1828 caused the supply of snow and ice which had been preserved in the spring of that year, for the use of Catania and the adjoining parts of Sicily, and the island of Malta, to fail entirely. The month of June is the most productive season in those countries, and the increase of snow and ice is felt here as an article of luxury, and on the abundance of which, in the large cities of Sicily, the salubrity of the water, and the
general health of the community, are said in some degree to depend. The magistrates of Catania applied to Signor M. Gemmellaro, in the hope that his local knowledge of Aetna might enable him to point out some crevice or natural grotto on the mountain, which might be used for the purpose. Nor were they disappointed; for he had long suspected that a mass of perennial ice at the foot of the highest cone was part of a large and continuous glacier covered by a lava current, and that it was constantly quitted into this lava, and proved the superposition of the lava for several hundred years, so as completely to satisfy himself that nothing but the subsequent flow of the lava over the ice could account for the position of the glacier. Mr. Lyell supposes that the remains of this immense deposit of ice may be seen at the base of one of the large vents of Vesuvius. We may suppose that, at the commencement of the eruption, a deep mass of drift snow had been covered by volcanic sand, showered down upon it before the descent of the lava. A dense stratum of this fine dust, mixed with snow, is well known to be an excellent non-conductor of heat: the shepherds in the higher regions of Aetna are accustomed to provide water for their flocks during summer, by strewing a layer of volcanic sand a few inches thick over the snow, which effectually prevents the snow from melting. Suppose the mass of snow to have been preserved from liquefaction until the lower part of the lava had consolidated, we may then readily conceive, that a glacier thus protected at the height of 10,000 feet above the level of the sea, on the slopes of Mont Blanc, unless melted by volcanic heat from below. Every one is aware that, in lofty mountains, the temperature of the air diminishes as the elevation increases, and that even in the higher regions of eternal snow. So in Aetna, he ascends from the plains by two coaches to mark the transitions, but the botanist can trace the lines of separation, drawn by the hand of nature, without any accuracy. We have said that Aetna is divided into three regions, the fertile, the woody, and the desert; these zones are defined by the presence or absence of certain great classes of the vegetable kingdom, but each of them is susceptible of subdivisions, determined by the constitutions of certain families of plants, which can only thrive within certain limited ranges of temperature, and thus the mountain is divisible into seven distinct botanical regions. We can mention several, whose plants are characteristic of each, and must refer the reader for fuller details to special works on the subject. The first, or what may be termed the sub-tropical region, does not exist in Mexico, where the elevation of the sea. Here grow the palm-tree (Phormia), the banana (Musa), the Indian fig, or prickly-pear (Cactus opuntia), and the sugar-cane; and there may be seen in open gardens tree-cacti, and euphorbias, together with varieties of mimosa and various other plants often grown in hot-houses and conservatories. The second, or hilly region, extends to the height of about 2000 feet, where the culture of the vine ceases. Here we find many plants of the South of France, Spain, and Italy, and cotton, maize, the orange, the lemon, and theashboard. From the great dryness of the atmosphere, mosches and lichens are extremely rare, and the mushroom tribe (fungi) are very rare with in winter. The third, or woody zone, lies between the others, and is divided into two sub-regions: the cork-tree (Quercus suber), and other kinds of oak (Q. pedunculata, Q. robur, Q. congeata), the maple (Acer), and, especially on the eastern side, of luxuriant chestnut-trees, often of extraordinary size. The fourth region, which lies between the woody and the desert regions, is still characterized by the presence of the beech (Fagus sylvatica), Scotch fir (Pinus sylvestris), birch (Betula alba), and, among small plants, clover (Trifolium repens), sandwort (Arenaria cicutaria), the apple-tree (Malus pumila), and the hawthorn (Crataegus monogyna). The fifth, or sub-alpine region, lies between the elevations of 6000 and 7000 feet, and produces the barberry (Berberis alpina), soap-wort (Saponaria officinalis), toad-flax (Linaria vulgaris), hare's-foot clover (Trifolium arvense), and the meadow-grass. The sixth region lies between the elevations of 7000 and 9000 feet. With the exception of Berberis alpina, Astragalus odoratus, and Jasminum humifusum, almost all the plants of the fifth region are also found in this; but the Saponaria depressa, the Rumex acetosella, and the flashy and jagged groundsel (Senecio cavanum and S. incius), are characteristic of it. The seventh region is very narrow, its upper limit not rising above 9200 feet; and it only produces a few herbaceous plants, among which we find the Stellaria media, and the evening primrose (Oenothera biennis). Nor were we disappointed; for he had long suspected that a mass of perennial ice at the foot of the highest cone was part of a large and continuous glacier covered by a lava current, and that it was constantly quitted into this lava, and proved the superposition of the lava for several hundred years, so as completely to satisfy himself that nothing but the subsequent flow of the lava over the ice could account for the position of the glacier. Mr. Lyell supposes that the remains of this immense deposit of ice may be seen at the base of one of the large vents of Vesuvius. We may suppose that, at the commencement of the eruption, a deep mass of drift snow had been covered by volcanic sand, showered down upon it before the descent of the lava. 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jecting point to another. If the great recesses of the sea about Aetolus and Mesolonghi were included, the distance would be much greater. The south-eastern boundary of Aetolia, which separated the province from that of the Locris, contained, according to Pausanias, in its north-eastern course, taking the name of Corax. The north and extreme north-eastern boundaries of Aetolia were the small territory of Doris, the branches of Findus, and part of the western line of the mountains. The southern boundary, as we may infer from anything like a definite boundary to Aetolia, and as we are still only imperfectly acquainted with the mountains of northern Greece, any further description is impossible. The western boundary was the Achelous. [81 &c., &c., &c., &c., &c., &c.]

The only considerable river of Aetolia, besides the Achelous, is the Fedon, formerly the Evenus, which rises in the N.E. part of Aetolia, in the range of Corax, which is some distance south of the great chain of Findus. Its course is south, inclining in its lower course considerably to the west. Aetolia contains several lakes in the interior, two of which, as they are marked in our maps, communicate with one another and with the Achelous; but there is some difficulty in identifying these with the lakes mentioned by the ancient geographers and historians. Indeed, nearly the whole ancient and modern geography of central Aetolia is one heap of confusion. One of the lakes is called in our maps Angelus Castro, and the other Frachori.

Definite positions in Aetolia were, Thermum, in the interior; Trichonium, on the lake Trichon, now Vrachori; Calydon, the oldest establishment of the Aetolians, and Anthrithum, at the entrance of the Corinthian Gulf.

The Leleges in the north, and the Curetes, probably a kindred race, in the level plains of the south, are the oldest inhabitants of this country that we can trace. The name of Aetolia and Aetolians was introduced, according to tradition, by Aetolus and his followers from Thessaly; a third generation afterwards, however, is said to have been made captive by the Persians, and to have returned after the battle of Troy. In course of time the original inhabitants and the strangers formed one people, and increased by the mixture of Aetolians and Beothuks from Thessaly, they became in part, though not altogether, a Greek people. In the time of Thucydides, one of the most numerous divisions of the Aetolian nation was characterized by that writer as speaking a language not understood, and being in the habit of eating raw flesh. [Thucyd. iii. 94.]

The history of the Aetolians, as a nation, is closely connected with that of the Acarnanians, but, like the latter, they were a people of little importance during the most flourishing periods of the commonwealths of European Greece. After the death of Alexander the Great, the Aetolians came into notice by their contests with the Macedonian princes, who allied themselves with the Acarnanians. In the reign of Philip II. of Macedon, (which commenced b.c. 323,) the Aetolians, after seeing their chief town, Thermum, plundered and burnt, and their king, Adrastos, killed, were on the point of being reduced to slavery. The Romans, at the instance of Valerius Larinum, (b.c. 210.) Through this produced no beneficial effects, they formed a second treaty with the Romans (about b.c. 198) after the end of the second Punic war. The immediate effect of the Roman conquest was the conquest of Macedonia, but it proved eventually that this fatal alliance of the Aetolians was the first step that led to the complete subjugation of all Greece by the Romans as a whole. Annual and decreed the way of the occupation of all Aetolia, when it was made part of the Roman province of Achaea. Under Roman dominion, the few towns of Aetolia almost disappeared: many of the inhabitants were transplanted to people the city of Nicopolis, which Augustus built at the entrance of the Adriatic gulf, opposite Actium, where he had defeated Antony. Since the time of the Romans it is probable that the face of this country has undergone as few alterations, or received as few benefits, as any part of Greece, except the most remote parts of the globe. The Romans themselves under their successors had not even a road through Acarnania and Aetolia, but followed the coast from Nicopolis to the mouth of the Aetolian Gulf.

The earliest traditions of Aetolia, properly known by that name, speak of a monarchal form of government under Aetolus and his successors; but this form of government ceased at a period earlier than any to which historical notices extend, and we may therefore exist in a kind of democracy, at least during the time of their greatest political importance. This period extended from about B.C. 234, to their complete conquest by the Romans, b.c. 158, a period of two centuries, during which we find the Aetolians banded the whole country of Aetolia, part of Acarnania and of South Thessaly, with the Cephallenian isles; and it had besides, close alliances with other places in the Peloponesus, especially Elis, and even with towns on the Hellespont, and the sea coast, of Asia Minor. If we would point the formation of the early connexion already alluded to. Following, probably, the example of the Achaean league, the different parts of Aetolia formed a federal union, in which each community was a general or president, a master of the horse, a kind of special council called Aenpaeotolion (the council, and a secretary, in the national congress held at Thermum about the autumnal equinox. Such scattered notices as we possess about their history and constitutional forms are found principally in the Greek writer Polybius (books ii. iv. xvii. &c.) Though the Aetolian confederation, such as it was in its earlier times, was anterior to the Achaean union of Dyne, Patree, &c., yet its more complete organization was most probably an imitation of the Achaean league. This would be little more than conjecture, is not within our plan. [See Schlosser, Univ. Hist. vol. ii. p. 1. Nero, Lehrbuch, &c.]

AFFIDAVIT OF (Iat. affectatione) in music, signifies a tender, expressive style; and slowness is invariably implied. In regard to movement it may be considered as equal in degree to larghetto. See LARGHETTO.

AFFIDAVIT, in Law, is a statement of facts in writing, on oath, to a court of law; and the words are generally introduced by the Roman Latin word afido, to pledge faith to, and is taken from the old Latin form of a declaration on oath, which commenced thus: 'Avidavit J. S. 'J. S. hath sworn, &c.' By the law of England affidavits are necessary in a variety of cases; in order to bring facts under the cognizance of courts of justice all evidence of facts must be given on oath, either by oral testimony or by affidavit. Where evidence is to be acted upon by juries, it is given as oral testimony; where it is to inform a court or judge, it is usually reduced into the form of an affidavit. In point of form, an affidavit is usually made as follows: if made in a cause, the name of the court in which the cause is pending, and the names of the plaintiff and defendant, are written at the foot of the paper. The name, description and residence of the deponent, and the person making the affidavit, are written at length, and the individual making the affidavit signs his name at the foot of the paper. The paper is then shown to him, and he is requested to swear to his name and to the truth of the within writ, and sign it. And, lastly, the jurat (a term derived from the Latin word juratum, 'sworn') expressing the officer before whom, and where, and when, the affidavit is made, is signed by such officer. If the affidavit or sworn in open court, that circumstance is mentioned in the jurat, and no officer is named.

AFFINITY. Chemical affinity, sometimes called chemical attraction, is that power by which bodies combine and form compounds always possessing some properties very different from those of their constituents, and frequently diametrically opposite to them. It differs from association in not acting on masses, and only at sensibly distant distances. In this last property it resembles cohesive affinity, but is distinguished from it by occurring only between the particles of dissimilar bodies. Thus a mass of sulphur are held together by cohesive affinity, and so also the bodies of a mass of copper; but if a particle of sulphur be brought into contact with a particle of copper, the two particles being different, and possessing chemical affinity for each other, unite, under this power, to form a compound.

Chemical affinity, then, can be exerted only between the particles of dissimilar bodies; and when these are placed in contact, the proportions in which they combine are fixed by the definition of the arrangement. If A and B are only the part east of the Achael and south of the two great lakes, was to belong to the new kingdom of Greece, but these boundaries are now extended towards the north and west, as far as the Gulf of Arta.
probable that they combine chemically only in definite quantities. When common salt is added to water a certain portion of it is dissolved, dependent upon the affinity existing between the solid and the fluid. The solution of salt is said to be saturated when the water refuses to dissolve more of it; but with this exception the combination will mix to any extent, for no repulsive power exists between them as between oil and water: we may, however, consider the water which is so added as merely in a state of mixture, and not of chemical combination.

Although none but dissimilar bodies unite by chemical affinity, mere dissimilarity will not of itself ensure combination: thus, water and mercury, water and oil, mercury and oil, though very different fluids, cannot be made to unite; and yet it has been concluded that they have no chemical affinity for each other.

The simplest cases of chemical affinity are those in which two elementary bodies unite into a binary compound, as when iron combines with oxygen to form oxide of iron. This is the result of what is termed single affinity, and this power may be exerted between two elementary or two compound substances. For example, sulphur and copper, both elementary bodies, readily unite when heated; but copper oxide and sulphur unite with great readiness; but no combination of sulphur and oxide of copper, or of sulphuric acid and copper, is at present known. There is then a greater disposition to combination between an element and a compound than between an element and a compound: the rule is, however, by no means without exception, for cyanogen, a compound body, combines with mercury, an elementary one, to form cyanuret of mercury.

It has been observed that, when bodies combine by chemical affinity, they undergo great change of properties: it might, however, be supposed that a compound would possess qualities intermediate between those of its constituents. This, however, is by no means the case; nor, even though we may be able to collect within the column of the elements, are we at all told, d'apres, what kind of a compound they will form: sulphur is yellow, copper is red, but the sulphuret of copper, resulting from their union, is black. Again, sulphuric acid has great affinity for water, and, when diluted, turns vegetable matter black; potash has an almost general affinity for water, and renders vegetable blues green. The acid and potash are also both extremely acid, and they have great affinity for each other; but combine them by single affinity, and a salt, called sulphate of potash, which has very slight affinity for water, does not act as a potash. Thus, the colour of being acid to the taste, like both its constituents, is merely bitter and saline. In this case of chemical affinity there is no total reversal of properties has occurred; but those of the combination are different from those of the bodies from which it has originated. Sulphuret of copper, as already noticed, differs in colour from both its elements, yet it resembles both in being solid; but there are numerous cases in which the form, colour, smell, taste, density, and other physical qualities, and the chemical properties of fusibility, volatility, solubility, and tenacity to combination in the compound, bear no resemblance to its constituent parts.

Although, in speaking of the action which is induced by chemical affinity, chemists are frequently in the habit of stating merely that one substance has affinity for another, yet it is to be understood that the force with which bodies unite arises from mutual and equal affinity: thus, sulphuric acid and potash combine, not merely on account of the affinity of the acid for the alkali, but of the alkali equally for the acid. Chemical affinity, then, is mutual and equal between those substances which combine by its power.

Many different compounds may be formed by uniting one substance, an acid, for example, with various others, as with the alkalis, earths, and metallic oxides; these are called bases; and the force of affinity of any acid for any base differs in every instance. Now, this difference constitutes what has been termed elective affinity,—the existence of which is easily proved, and the results of its action are of the highest importance, both in a scientific point of view, and with regard to chemical agency as connected with the most common processes in the chemical arts and manufactures.

Nitric acid is capable of combining by single affinity with lime or with magnesia; and if some dilute nitric acid, containing 14 parts of the acid, be mixed with 10 parts of the earth, the latter will be dissolved in the acid, and a neutral solution of nitrate of lime is obtained. A similar quantity of this acid forms a neutral solution of nitrate of magnesia by combining with 20 parts of that earth. Now, if we mix together 54 parts of nitric acid, 28 of lime, and 20 of magnesia, it might be supposed that the acid—which is of course incapable of dissolving the whole of both of the earths—would dissolve them in the proportions of 14 of lime and 10 of magnesia: it is found, however, that this is not the case, for the whole of the lime is dissolved and the magnesia entirely left.

It appears, then, a greater mutual affinity, or an elective affinity, exists between nitric acid and lime, than between nitric acid and magnesia. This is another mode in which the elective affinity acts, and is employed in a vast number of chemical processes. It has been just stated that 54 parts of nitric acid combine with 20 of magnesia by single affinity. Now, if to the solution of nitrate of magnesia thus obtained we add 26 parts of lime, and mix the mixture, the lime separates the magnesia from the nitric acid; and being dissolved instead of it, we procure a solution of nitrate of lime, instead of nitrate of magnesia: this operation is termed single decomposition, and it is produced by single elective affinity. It is therefore evident, that this power may not only prevent one substance from combining with another when three are mixed, but supposing two to have been previously combined, it is capable of effecting a separation between them.

On the action of single elective affinity producing single decomposition, depends the process of preparing acetic acid from acetate of soda by means of sulphuric acid; and the production of ammoniacal gas by distilling a mixture of lime and sulphate of ammonia. To exhibit the degrees of elective affinity, tables were constructed by Geoffrey, a French chemist, about a century ago. In these the substance whose affinities are to be expressed is placed at the head of a column, and is separated from the rest by a horizontal line; beneath this line are arranged the bodies with which it is capable of uniting in the order of their respective forces of affinity; the substance which it attracts most strongly being placed nearest to it, and that for which it has the least affinity at the bottom of the column; thus, in the case of sulphuric acid, the affinities are exhibited in the following order:

**Sulphuric Acid.**

<table>
<thead>
<tr>
<th>Barytes</th>
<th>Strontia</th>
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<tbody>
<tr>
<td>Potash</td>
<td>Soda</td>
</tr>
<tr>
<td>Lime</td>
<td>Magnesia</td>
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</table>

It would appear from this table, that barytes separates sulphuric acid from combination with all the substances placed below it, and that magnesia is separated from sulphuric acid by all that are above it. There are, however, many circumstances which interfere with the accuracy of tables thus constructed, and diminish their utility, since affinity is not an absolute force, but subject to anomalies and to modifications from various disturbing causes.

In the above table, and in many similar tables, the affinity of an acid for different bases is expressed; but on other occasions, the affinity of the same bases for different acids is required. In this case the alkali, earth, or metallic oxide, is placed at the head of the column, and the various acids are arranged according to their affinity for it.

There is yet another mode in which elective affinity is exerted. Certain compounds can scarcely be obtained at all,
or with great difficulty, either by single affinity or single elective affinity; but are readily obtained by what is termed double elective affinity. There is a well-known mineral body called sulphate of strontia, which consists of sulphuric acid and the earthy base (or strictly speaking, metallic oxide) strontia, and they are combined by single affinity. Now potash has great affinity for the sulphuric acid of the sulphate of strontia; but if we mix them, no decomposition takes place, the potash being incapable, by single elective affinity, of taking the sulphuric acid from the strontia. Again, carbonic acid and strontia have great affinity for each other, but if carbonic acid gas be passed through water in which powdered sulphate of strontia is diffused, it does not by single elective affinity separate the strontia from the sulphuric acid.

That decomposition, however, which single elective affinity cannot in this case perform, may be effected by double elective affinity, producing double decomposition. If, instead of acting upon the sulphate of strontia with the carbonic acid and potash separately, we combine them and boil the powdered sulphate of strontia in a solution of the carbonate of potash thus formed, double elective affinity ensues, and two new compounds are formed,—namely, sulphate of potash, which remains in solution, and carbonate of strontia, which, being insoluble in water, is precipitated in the state of a white powder. The double elective affinity which produces double decomposition will be illustrated by the annexed diagram.

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<tbody>
<tr>
<td>Potacl.</td>
<td>Sulphuric Acid.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Carbonate of Strontia.</td>
<td></td>
</tr>
</tbody>
</table>

Double elective affinity and decomposition are extensively employed in chemical operations; the preparation of various acids, such as the nitric and muriatic, and of a great number of saline compounds, depends upon the application of these modifications of chemical affinity. We shall now illustrate a position already stated, viz., that chemical affinity is not to be considered as an invariable power, but subject to causes which prevent, increase, or reverse its action; and it is on this account that tables of affinity express merely the order of decompositions, and not that of combination under every circumstance. The causes now alluded to may be comprehended under form and proportion, and the modifying effects of heat, electricity, and light.

With respect to form, it may be observed, that the solid state is unfavourable to the exertion of chemical affinity; and it was once supposed that two solid bodies could not act chemically upon each other. That this is not the case may be proved by adding lime to muratic of ammonia, for by their mutual action ammonical gas is plentifully evolved. Division is, however, in all cases favourable to chemical affinity: thus, a mass of marble dissolves slowly in muriatic acid, but when reduced to powders the action is extremely rapid. In some cases mechanical division, however minute, is insufficient to allow combination; thus, if finely powdered pipe-clay be added to dilute sulphuric acid, no chemical affinity is exerted between them, the cohesive affinity of the particles of clay exceeding that of their chemical affinity for the sulphuric acid. If, however, we take a solution of alum and add amonia to it, the clay is precipitated from it in so minutely divided a state that the acid immediately dissolves it.

When a jet of hydrogen gas is thrown upon a mass of platinum, what ever is produced, but when the platinum is very minutely divided, then chemical affinity is excited; the platina becomes first red-hot, then inflames the hydrogen, and water is formed during its combustion.

Minute division, then, so as to reduce the cohesion of a body, is in many cases necessary; the exertion of chemical affinity, and in all cases it increases the rapidity of its action.

Fluidity is always favourable to chemical action, and in most cases it is requisite that one body, at least, should be in that form. Thus galls and sulphate of iron, though both are reduced to fine powder, do not act upon each other; dissolve either of them and add the other in powder to the solution, and chemical affinity will take place; but if they are both dissolved, then the action is instantaneous.

There are some instances in which affinity is but feebly, if at all, exerted, unless both bodies be so finely divided as to be exposed to each other in the aërial form: thus sulphuric acid is incapable of uniting with strontia. Little or no change takes place, but if the strontia be heated to a white heat, and dissolved by the spirit when it is merely powdered; but if the sulphur and alcohol be heated in separate vessels, and their vapours be suffered to mix, they then unite.

The nature of the compounds which are formed in these cases is extremely favourable to the action of chemical affinity. Chlorine has affinity for silver, and the compound which they form, called chloride of silver, is white and insoluble in water; hydrogen has great affinity for chlorine, and they combine to form mutatis mutandis. Thus, if hydrogen gas be passed into a vessel containing chloride of silver in suspension, no change occurs, for the hydrogen has not, under these circumstances, the power of separating the chlorine from the silver.

If the hydrogen be evolved in the vessel which contains a saline solution of chloride of silver, the hydrogen gas is freed and its holding chloride of silver in suspension, no change occurs, for the hydrogen has not under these circumstances, the power of separating the chlorine from the silver.

The nature of the compounds, arising from the chemical affinity and action of their elements, is greatly influenced by the proportion of the substances employed to produce them. When equal weights of the elements are subjected to distillation, the product is sulphuric ether; double the quantity of ether, and oil of wine is obtained; use ten parts of acid to one of alcohol, and oleofant gas is formed by their mutual action. Again: if a mixture of two parts of nitre and one part of sulphuric acid be distilled, there are produced nitric acid and sulphate of potash; but if a part of the sulphate of potash be dissolved in the nitric acid, nitrate of potash will be again formed, accompanied with biautrophite or sulphate of potash.

There are several other cases which prove that the proportions of the substances which act chemically upon each other, greatly influence the nature and proportions of the new compounds formed: thus, when 100 parts of sulphate of barytes are boiled in a solution of 29 parts of carbonate of potash, 23 of the sulphate are decomposed and converted into 193 of carbonate. When also 85 parts of carbonate of barytes are boiled in a solution of 74 of sulphate of potash, decomposition also takes place, and there are formed 47 of sulphate of barytes, and 40 of carbonate of potash. In these experiments, then, it appears that decomposition cannot in either case be entirely effected, while the new compounds formed remain in mixture with the portions of the original substances; and in these cases when there takes place a partition of bodies between the acids whose action is opposed to each other.

Heat, according to its degree and under various circumstances, produces very different effects on chemical affinity, in some cases it produces increases, in others decreases; but if we mix oxygen and hydrogen gases, they will remain in a state of mixture for an indefinite period without combining; but if flame be applied to them they combine with explosion, and water is formed; now heat is the most powerful of all agents, for a very limited extent only when cold; boil it and the solvent power is greatly increased. When mercury is moderately heated in atmospheric air it is converted into peroxide, by combining with the oxygen of the air; heat the compound thus formed and it is converted into the oxide of mercury; but if it be heated still more, the oxide is decomposed, and the affinity is destroyed; oxygen gas is given out, and the mercury returns to its metallic state. Mix solutions of chloride of calcium and carbonate of ammonia; double
decomposition ensues; carbonate of lime and muriate of ammonia result. Evaporate the mixture to dryness, and heat the residue; the order of affinities is reversed, and chloride of calcium and carbonate of ammonia are reproduced: in this case, heat reverses the order of affinities. There is one instance however, in which heat produces effects that are quite anomalous and irreducible to any idea of their dependence upon degree of temperature; it is this:—when the vapour of boiling water is passed over ignited iron, the oxide of iron and hydrogen, one of the elements, is evolved in the state of gas; and oxygen, the other combining with the iron and converts it into oxide. Now if we ignite this oxide of iron and pass hydrogen gas over it, the oxide is decomposed, its oxygen combines with the hydrogen, and water is formed by their union. It is, however, probable that this and some similar effects are produced by the heat which accompanies the electrical spark; but there are other cases of combination which must perhaps be attributed to atomic action, as, for example, when nitric acid is formed by the agency of electricity upon atmospheric air.

Electricity possesses remarkable power over chemical affinity; if the electric spark be passed through a mixture of gases, it will cause compounds to decompose, and water is formed by their union. It is, however, probable that this and some similar effects are produced by the heat which accompanies the electrical spark; but there are other cases of combination which must perhaps be attributed to atomic action, as, for example, when nitric acid is formed by the agency of electricity upon atmospheric air.

The action of electricity is much more remarkable in cases of combination than those of decomposition, especially in cases in which the form of its action is termed voltaic electricity, or galvanism; the first substance decomposed by it was water. When two platinum wires are connected with the poles of a voltaic trough, and their unconnected ends are immersed in water, hydrogen-gas is evolved at the negative, and oxygen-gas at the positive wire. Many other compound bodies have been similarly decomposed: their elements separate at the opposite poles, and the same body always appears at the same pole: thus in all decompositions, oxygen, chlorine, and the like are said to separate under the electric current, while hydrogcn, the metals, inoffensive substances in general, and the alkalis, are found at the negative surface.

In common electrical attraction, the bodies attract each other, and separate on the same side of an equation in the same manner, in the electro-chemical theory proposed by Sir H. Davy, it is supposed that acids and other substances which are attracted in electrical decompositions to the positive pole, are negatively electrical at the moment of their separation from combination; and on the contrary, the alkalis, which are found at the negative extremity, are positively electrical.

It has, however, by no means been proved that chemical affinity is identical with electrical attraction; and we must yet consider it as a peculiar species of action, subject indeed to the control of electrical agency, which is capable, not merely of decomposing compounds, but of suspending chemical action and reversing the order of affinities.

The simplest facts relative to soluble vegetable infusion subjected to voltaic electricity in a glass tube, it is soon found that the fluid at the positive pole becomes red, indicating the presence of an acid, while at the negative it is green, showing the action of an alkali. In this case the sulphate of soda is only decomposed, but its constituents, while under electrical influence, appear to be incapable of recombining; for, by reversing the position of the tube, or the places of the wires, the fluid which was red will become green, and the green become red; thus showing that, while the principle of chemical affinity is maintained, the chemical combination depended, for the acid and the alkali have must have passed through the same solution without combining.

That affinity may be controlled by altering the electrical current, was first proposed by Sir H. Davy. He has made curious experiments on copper-sheathing which, though they failed from unforeseen causes, are worthy of his genius. It appeared to Sir H. Davy that the copper was oxidized by the atmospheric air in the sea-water, and that then it took on a muriatic acid from muriate of magnesia and formed with it a substance of copper, and hence ensued the destruction of the metal. Now, as metals combine with acids only when oxidized, it occurred to Sir H. Davy, that if he could reduce the copper to the metallic state of the oxygen, they would not combine. This he effected by bringing the copper into contact with zinc or iron; these being rendered positive, the copper became negative, and remained combined with all at oxygen, and was so readily acted upon the metallic state of the oxygen, that when protected by only 1-100th part of iron, oxidization and conversion into submuriate were, to a certain extent, prevented.

The following will also serve as an example of the reversal of chemical affinity by electricity. Immers a piece of copper in a solution of nitrate of silver; the copper is dissolved and the silver precipitated; if we reverse the experiment, and put a piece of silver into a solution of nitrate of copper, no change is effected; if, however, the silver while immersed be touched by a piece of iron, a voltaic circuit is formed, the order of affinity is reversed, the copper is precipitated, and the silver dissolved.

Light is capable of controlling chemical affinity both with respect to decomposition and combination. If a mixture of hydrogen and chlorine gases be exposed to the sun's rays, they combine with explosion, and form muriatic acid; this effect does not appear to be produced by the heat which accompanies it; as a consideration, that heat is not capable of producing the combination. With respect to the decomposing agency of light, it is well known that if pale nitric acid be subjected to it, it suffers decomposition to a certain extent, oxygen gas being evolved: it is seen, that, so far as our knowledge now extends, the oxygen with but slight force of affinity, evolve it, and are reduced to the metallic state by the agency of light.

In concluding the subject of chemical affinity it is to be observed, that such combinations between substances, in more than one proportion of each, and the quantities are governed by certain laws, which will be considered under Atomic Theory.

Affinity, in Law, means a relationship by marriage. The husband and wife being considered, in law, as one person, that are related to the one by blood are related to the other in the same degree by affinity. This relationship not being the effect of nature, but the result of civil institution, the persons between whom it exists are said to be related in law; the father of a man's wife is here the brother of his wife's father. This is the only point of view in which affinity is a subject of any importance in the English law is, as an impediment to matrimony;—persons related by affinity being forbidden to marry; whereas persons related by blood may (with some restrictions) marry. As affinity is no impediment to the marriage of persons of different sexes (see Marriage). It is in consequence of this rule that a man is not permitted, by our law, after his wife's death to marry her sister, aunt, or niece,—those relations being all within the prohibited degrees of consanguinity; and therefore, according to the principle just laid down, the prohibition extends to the same relations by affinity also. This rule, which excludes from marriage relations by affinity within certain degrees, is founded upon the Levitical law; and doubts have been entertained by very learned writers, whether its introduction into the municipal laws of modern countries is necessary or useful. [See Michaeis, Mosaisches Recht. b. iii. c. 7.]

Affirmation, in Law, is the solemn assurance made by individuals belonging to the class of Witnesses called Quakers, in cases where an oath is required from others. This indulgence was first introduced by the statute 7 and 8 Will. III. ch. 34, which enacted that the solemn affirmation of Quakers in courts of justice shall have the same effect as an oath taken in the usual form. The provisions of this statute are explained and extended by 8 Geo. I., ch. 6, and 22 Geo. II. ch. 46. sect. 36; but in all these statutes there is a clause expressly restraining Quakers from making evidence in penal or criminal cases. This absurd exception, which Lord Mansfield called 'a strong prejudice in the minds of the great men who introduced the original statute' (Cowper's Reports, p. 390), has been entirely removed by a recent enactment of the legislature: the same persons are now entitled to give evidence in all cases, criminal as well as civil, upon their solemn affirmation. A curious question arose during the present session of parliament (1833), re-
specting the sufficiency of the affirmation of a Quaker, in stead of the customary oath, on his taking his seat in the House of Commons: the subject was referred to a committee, upon whose report the House resolved that the affirmation be the only possible.

AFFIX, a term in Grammar, to which the name of suffix is sometimes given. It signifies a syllable attached to the end of a word by which the form and signification of the word are altered. This will be best explained by some examples.

The words weight, bulk, and in good, odd, &c., the syllables y and ly are the affixes, which qualify the meanings of the words to which they are attached, and fit them for a new and different use. This may be shown by "The man had wealth." That he was a merchant. Verbs are in this way made from adjectives, as from the adjectives sharp, quick, thick, we have sharpened, quicken, thickened respectively: and adjectives and verbs from nouns, as in the examples just given. The sign marks our possessive case, is an affix, having originally been a distinct syllable, as we see from our old books in such expressions as Goddes will: mannes duty. Some persons are of opinion that this y has arisen from the possessive pronoun his, as in such a phrase God his will, man his business. This may be shown by the German and Anglo-Saxon genitive termination es. When we hear people vulgarly say horn,ieren, for his, her, the n is the remnants of the syllable en, which in these instances marks a kind of pronominal adjective, akin to the genitive possessive case as we may still observe in the German forms dessen, se...
smell, on perceiving which, every living being runs to seek shelter. It is conjectured that the hydrophobia, which atta-
ccks dogs, wolves, and jackals, is caused by the simoom.

The season of rains, called in India the south-west mon-
soon, is felt in the eastern parts of Afghanistan, though not so violently as in India. It commences about the end of July, when the earth, which has been parched by the sum-
ner heat, resumes the appearance of spring with miraculous rapidity. There is little rain, fogs and clouds are rare, and the air is usually dry. The average heat is less in India; and the difference of temperature between
day and night, and winter and summer, is much greater than either in India or England. The climate generally is healthy; but the most common diseases are fevers, cholera, and ophthalmia; and occasionally the small-pox is very fatal, in
spite of inoculation, which has been long practised.

The mineral resources of Afghanistan are not much de-
veloped. No gold is found, with the exception of some grains in the mountains near the great northern mountains, but little silver; mines of lead and iron are wrought, and fine rock salt is dug in the north-west. Whole cliffs of lapis lazuli exist in the mountains.

The western country is mostly high and bleak, much fitter for garden vegetables in general, and is generally inhabited by shepherds who dwell in tents.

The animals of Afghanistan are like those of India; the
lion is small and very rare. Tigers and leopards are found in the wilder parts, as well as the bear, the wolf, and the fox, everywhere. There are many bears, but they rarely descend into the plains. Horses are common, and in some parts very fine. Asses are much used in the labours of agricul-
ture; but the chief beast of burden is the camel, the same long-headed, swelling-eyed brute, that is in India, but with two humps, is sometimes used, but more rarely. The principal stock of the rural population consists of sheep; a fine handsome animal, with tails of solid fat a foot broad. Goats, dogs, and cats, with long silky hair, are all in abun-
dance.

Two or three sorts of eagles frequent the mountains, and several species of falcons, many of which are used in hawk-
ing, to which the Afghans are much addicted; their game is chiefly the same as in Europe: wild ducks, swans, quails, pheasants, geese, and partridges.

The trees are generally the same as in Europe, and our
finest fruits grow wild in the plains and valleys. The pro-
ducts of agriculture are wheat, barley, rice, Indian corn, millet, pulse, tobacco, &c., &c., carrots, turnips, cabbages, and cucumbers, just as in Europe. The dates, ginger, turmeric, tomato, and sugar-cane, are cultivated in favourable situations.

In a government so unsettled as that of Afghanistan, the political position of the British legation and the British
embassy was at Peshawer, in 1809, the kingdom was divided into twenty-seven provinces or governments, the eighteen most important of which were superintended by resident
hakims, who collected the revenue and commanded the troops of the country. These provinces, however, were in
some measure, &c., &c., are now quite independent; others, as
Balik, Herat, Seestan, &c., though nominally connected with the government, do not come within our object, which is only to describe Afghanistan, and not its dependencies.

On crossing the Indus at Attock, the first province is Pesh-
awer, in the valley of the Cabul river; the provinces of Jal-
lalabad, Lughman, and Cabul, follow in regular succession westward along the same river, and at its sources is the united province of Bamiyan and Ghoreband. All these
provinces are inhabited by Hindoo Koosh, and though small, they are the most important of the kingdom, by their fertility and population. South of Cabul is Ghizni; Candahar lies considerably to the south-
west of Ghizni; and Farah, which is the easternmost, is at the
mouth of Khorassan. In all these the chief towns have the
same name with the province.

The remaining nine divisions are composed of countries
almost wholly inhabited by Afghans, or pastoral tribes, who,
where there are few towns, live in a manner we have al
ready noticed. These nine provinces comprise almost the whole surface of the kingdom. In the north, being only small populous districts, chiefly inhabited by people of foreign origin, and intersecting the nine large divi-
sions. The most important of these divisions are the tribes of Damaun, inhabiting the countries between the right bank of the Indus and the Soliman mountains; the Ghujies, stretching over the centre of the country, from the neighbour-
hood of Candahar to the Indus; the Bannu, inhabiting that part of the country, including the south-western part of the
province of Ghizni, Cabul, Bughmam, and Jel-
lalabad; the Eimauks form a province in the west of the
Parompanian mountains; and the eastern part of the same
range is the province of the Huzarela. The remaining
nine include all the Afghan tribes subject to the government
of the king.

The capital is Cabul, the chief city of the province of the
same name, which forms the eastern half of Afghanistan. Cabul is situated in a large plain, filled with villages. The town is surrounded on the sides by low hills, on one of which, to the north, is the king's pa-
lace. The tomb of the Emperor Baber, on a hill near the
city, surrounded by large beds of flowers, commands a noble prospect. The town is not set in the hands of a city, and is
compact; and the houses are mostly built of wood, to avoid the consequences of the frequent earthquakes. Beautiful gardens surround the town, which is celebrated for its fine
climate, though the proximity of the mountains causes great
variability of temperature. N. lat. 31° 10', E. long. 71° 40'.

Peshawer is situated in a plain nearly circular, about
thirty-five miles in diameter, and surrounded by mountains
on every side, except a slip of fifteen miles width to the
west. The plain is watered by the Cabul river, which is green; it is in high cultivation, and produces plums, peaches, cherries, pears, pomegranates, and mulberries, with a few dates. The city is about five miles round, and contains 100,000 in-
habitants. The houses are built of brick, about three storeys high, with flat roofs, are not very large, well built, and paved, and have a gutter in the centre. Part of the town is
flooded during the spring rains, which make it then an unwholesome residence.

Ghizni was once the capital of an empire reaching from
the Tigris to the Indus, and was a really splendid city. The
site of an ancient city, conjectured to have been one of those founded by Alexander the Great. The present city is quite modern, and was founded by Ahmed Shah in 1754. That king made it the capital of his dominions; but on the accession of Timour Shah in 1774, that seat of government was removed to Dowlatabad, which is large and populous, supposed to contain 100,000 inhabitants. Its form is oblong, and its plan perfectly regular; four streets meet in the centre, in a circular place, fifty yards in diameter, surrounded by a domes. This is called the Chau- rassah, and is a public market place, surrounded by shops;
the four principal streets are fifty yards in width, are lined
with shops, and extend to the gates of the city. The smaller streets are narrow, but straight, and all cross at right angles. The government house, which is on the N. bank of the Urgundan, a tributary of the Helmand; and a small stream runs through almost every street. The tomb of Ahmed Shah, covered by a gilt cupola, stands near the
king's palace, and is held as a sacred asylum, the king himself not daring to touch it. Within the walls of the palace, unlike any other city, is chiefly inhabited by Afghans, who have
conformed externally to the habits of Persians. Its
situation is in 32° 10' N. lat., 66° 30' E. long.

All the large towns are inhabited chiefly by Persians and
Indians; an Afghan is an apppellative, and exercises no trade.
The only Afghans found in towns are the officers of
government and their followers, soldiers, priests, and per-
haps, a few labourers. The houses of the rich are inclosed by high walls, with a gateway, three or four courts, with gardens and fountains. Each court contains a small apartment, and three or four large halls, reaching to the roof, supported by wooden pillars, carved and painted,
The apartments open on the halls, and are fitted up with paintings and looking-glasses. One room at least has glazed windows, and several have fire-places. The doors are carved, and covered in winter with velvet or brocade. The floors are covered with handsome carpets, and thick felt seats go round the room close to the wall, covered with silk or velvet. The houses of the common people are of one story, and usually of a single room, about twenty feet long by twelve broad: they have little ornament and scarcely any furniture. Neither tables nor chairs are fixed; their places are marked by small square or circular cushions.

The Afghans, who compose little more than a third of the dwellers in Afghanistan, are of moderate stature, but remarkably hardy and athletic. Their high cheek bones and prominent noses distinguish them from their family pride, and few of them have confounded them. Their complexion is various; men as fair as Europeans being found in the same places with others dark as Indians. The western tribes are fairer than those of the east. Their hair and beard is mostly black; occasionally brown or red. The usual dress is a sort of frock, reaching below the knee, and loose dark cotton trousers. The head is covered with a low flat-sided cap of black silk, with a coloured or brocaded top. They wear half boots, laced in front. The dress of the women is as laborious, by the perfecting of the art, and the people of the cast imitate their neighbours of India.

The manners of the Afghans are frank and open; they pay little respect to rank, but show great reverence for old age. They are very sociable, and give frequent dinner parties, which are conducted with as much daintiness and music. Any game of chance or skill, however childish, that may lead to a dinner, is played with great zest; marbles, prison-bars, hunt-the-slipper, hopping, &c. &c. and the loser treated his opponent. They are all fond of sitting in a circle, and conversing, to story-tellers. They are as quick as the east notice the attachment of the Afghans to truth, in which they are much superior to their neighbours of India and Persia, though Europeans will not rank them very high in that respect. They are filled with the idea of preventing lies and story-telling, scarcely allowing a man to be a genuine Afghan who cannot prove six descents. They are very jealous of attentions paid to others, and can be more easily wrought upon by kindness than threats.

Another characteristic of the Afghans is; it is with them a point of honour; and a greater affront cannot be given to an Afghan than by inviting his guest to another dwelling. A man may travel without money from one end of the country to the other, and the bitterest enemy is safe if he has the respect of hospitable Afghans, who have a wish to ask of any person goes to his house, and refuses to sit down or partake of food until the boon be granted. This custom is called nananaeate, and it brings disgrace on a man to reject a petition under such circumstances.

The cost was to the west; and, so celebrated for their hospitality, is the practice of robbery by the rubbed tribes of Afghans. A traveller passing through certain districts must expect to be plundered, if not under strong protection, while a stranger coming to settle amidst them is protected. These robberies are never committed by murder, and where the government is powerful the traveller is safe.

The good qualities of the Afghans have been summed up, by stating that they are faithful, brave, frugal, laborious, and prudent. Their bad qualities are revenge, avarice, envy, rapacity, and obstinacy.

Among the western tribes, the pastoral character is much retained; many tribes live entirely in black coarse woolen tents, and appoint one of their family as the representative of the council. But although the larger extent of ground is occupied by the dwellers in tents, the dwellers in houses are the more numerous body. Agriculture is very generally on the increase: many parts of Afghanistan are hopped, and the produce of their districts is more convenient and lucrative. But although the larger extent of ground is occupied by the dwellers in tents, the dwellers in houses are the more numerous body. Agriculture is very generally on the increase: many parts of Afghanistan are hopped, and the produce of their districts is more convenient and lucrative. But although the larger extent of ground is occupied by the dwellers in tents, the dwellers in houses are the more numerous body. Agriculture is very generally on the increase: many parts of Afghanistan are hopped, and the produce of their districts is more convenient and lucrative. But although the larger extent of ground is occupied by the dwellers in tents, the dwellers in houses are the more numerous body. Agriculture is very generally on the increase: many parts of Afghanistan are hopped, and the produce of their districts is more convenient and lucrative. But although the larger extent of ground is occupied by the dwellers in tents, the dwellers in houses are the more numerous body. Agriculture is very generally on the increase: many parts of Afghanistan are hopped, and the produce of their districts is more convenient and lucrative. But although the larger extent of ground is occupied by the dwellers in tents, the dwellers in houses are the more numerous body. Agriculture is very generally on the increase: many parts of Afghanistan are hopped, and the produce of their districts is more convenient and lucrative. But although the larger extent of ground is occupied by the dwellers in tents, the dwellers in houses are the more numerous body. Agriculture is very generally on the increase: many parts of Afghanistan are hopped, and the produce of their districts is more convenient and lucrative. But although the larger extent of ground is occupied by the dwellers in tents, the dwellers in houses are the more numerous body. Agriculture is very generally on the increase: many parts of Afghanistan are hopped, and the produce of their districts is more convenient and lucrative. But although the larger extent of ground is occupied by the dwellers in tents, the dwellers in houses are the more numerous body. Agriculture is very generally on the increase: many parts of Afghanistan are hopped, and the produce of their districts is more convenient and lucrative.

The religion of the Afghans is the Mohammedan of the Sunnite sect, though accompanied with less bigotry than usual. Hindoos and Christians live peaceably and respected among them; and even Persians, who are of the dissenting Shiites sect, and, therefore, more abominated by the orthodox than even infidels, hold high official stations among them, upon the simple condition of abstaining from curses on the three first caliphs, the denial of whose right to the commandery over the Faithful forms the chief reason of their dissent.

Social intercourse with women is less restrained than among other Mohammedans, though in towns the females of the upper ranks live secluded, and never go out without a covering from head to foot. In the country, women go out unveiled. In the lower ranks, they do the work of the house, and in some of the interior tribes assist the men in the labours of agriculture. Their marriage ceremonies are like those of the Persians.

The language of the Afghans is called Pushoto; half the western language is Persian, but almost all the articles and singular words of the language. Many words have been said to be identical with those of the Zend and Pehlevi, the ancient languages of Persia, and with those of the Sanscrit, the ancient language of India; and this in its modern dialects is spoken among the Persians and Hindoos. This, however, is done by some. The language of the Pushoto refutes the old opinion that the Afghans are descended from the Jews. The sound of the language is rough, but not disagreeable to persons accustomed to other languages. They use the Arabic alphabet, with points over and under certain letters to represent sounds unknown to Arabic. The only original Pushoto authors are poets; their compositions are chiefly lyrics, of a spirited and bold cast, breathing a strong spirit of independence. Not less than a century and a half old; but Persian works are as familiar to the educated Afghans as their own, and the Persian language is that chiefly used in composition.

The education of the Afghans is not neglected; every village has its school, and the sons of the poor are educated by their parents, and almost every boy attends it. In some tribes, boys are sent to a distant village, where they live in the mosque, and are under the sole guidance of their schoolmaster. The most celebrated university is at Peshawar.

Many facts are accredited with Persian literature, and almost all those of a certain rank can read; but writing is not commonly taught there.

The whole nation is divided into tribes, which continue much unmixed; each consists of a peculiar government, with little interference from the royal house. The government of the tribes is republican; they are divided into separate clans, and each clan has its chief or khan, chosen from the oldest family. The khan administers justice in most cases, but rarely by a cadi. The khan is assisted by a council of the heads of families. The clans are eminently exclusive, and are often at feud with each other. They appear to be little attached to their chiefs, but very strongly to their tribe. They are very jealous of interference, and their resistance to the attacks of the government is almost unanswerable. These are the result of the ordinary oriental despotism. The reply made to an English traveller, who expatiate on the freedom from alarm, blood, and discord, which must ensue from a more steady government, was: 'We are content with discord, we demand no more'...
herid mutilations so common in Persia are unknown. The
rudi never interferes unless called upon; most cases are
decided by the heads of tribes, as the Afghans dislike all
application to law; and even a murder, if in retaliation, is
rarely reported. If the head of the tribe, the Protective
watchman, is killed, another is appointed in all large towns, paid
by the inhabitants of the different wards. Parties are stationed in
dangerous places for the protection of travellers, who find,
however, that the purchase of security from the clans a more
efficient guard.

The military may be about thirty thousand. One-third of
these are Gholams, or military adventurers, who enlist for
life; about ten thousand are furnished by land-owners at a
stated price, or, if strangers, by persons who maintain
Durranee clan, as the condition on which they hold their
lands. Their soldiers are chiefly horsemen, and their arms are
swords and matchlocks.

The history of the Afghans cannot be traced to a remote
depth. In the 18th century they were possessed of the
north-eastern part of their present empire, and at the close
of the tenth a chief of Khorsassan conquered the country,
and made Ghizni his metropolis. For two hundred years
his family governed the empire; but although the plains were
occasionally taken by the Afghans, they maintained their
inhabitants in the mountains. At last, under the conduct of Moham-
med of Ghore, a descendant of their ancient princes, they
conquered the king of Ghizni, and burned his capital, A.D. 1197.
These parties frequently made war with the Egyptians, from
Tigris to the Ganges; but while making conquests abroad,
their own territories became the prey of a stranger; and
while Afghans were seated on the throne of India, Jenghis
Khan and his descendants ruled in Afghanistan. The Mount
of the castle was captured about fifty A.H. or Afghan
dwelt in the mountains. After the death of Tamer-
lane, in 1405, the country appears to have been inde-
pendent for a century. In 1506, the Emperor Baber, a
descendant of Tamerlane, conquered Cabul, and made it the
seat of his empire, which he divided into twelve (oushans)
between India and Persia, but the Afghans still preserved
their precarious independence. At the death of Aurungzeg,
1677, when the Mogul empire lost its power, the Afghan
tribe of Ghulji grew strong, conquered Persia, and founded
an empire; and the plains of Afghans is now their divided
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given a proof of his limited acquaintance with it by the very simple division which he makes of its inhabitants. All the native tribes in the northern part he calls by the general name of Libyans, and those in the south Ethiopia, which he proves to be Egypt, according to his system, hardly belongs to Africa, but lies like an isolated slip between the two adjoining continents. He was evidently puzzled about assigning a boundary to Asia and Africa, and he is often led, almost unconsciously, into a practice which persons of perception, and particularly the ancients, name of Arabia to the part immediately east of the Delta and the Nile. Herodotus asserts that Africa is surrounded with water, except at the narrow neck now called the Isthmus of Suez; and one reason was assigned, it would seem, for the name of Africa being circumnavigated by the Phoenicians in the reign of Pharaoh Necho, (as he is called in Kings ii. chap. 23,) King of Egypt, and between the years a.c. 610 and 594. The circumstances of the voyage as reported by Herodotus are very vague, and when faithfully presented will enable the reader to form his own opinion of the probability of the voyage having been made. Necchos, King of Egypt, (Herod. iv. 42.) despatched some Phoenicians in vessels, with instructions to sail round Libya and through the pillars of Hercules (strait of Gibraltar) into the northern (Mediterranean) sea, and so to return to Egypt. The Phoenicians set out from the Red Sea, and navigated the southern ocean. When the autumn came on, it was their practice to lay part of their canoes to the coast and to be, to sow the ground and wait for the harvest. After repeating it, they would again put to sea; and thus after two years they elapsed, in the third they passed through the pillars of Hercules and arrived at Egypt. And thus, it may be said, I do but narrate, though others may, that in their voyage round Libya they had the sun on their right hand.

This Phenician voyage is the only direct statement as to the ancient circumnavigation of Africa that deserves a particular examination, and the best critics are divided in opinion upon it. We do not believe the circumnavigation was effected, and for the following reasons. Herodotus visits Egypt about 150 years after the event, a time long enough to allow the original story (for we believe the whole to be true, as it has been transmitted) to have been perverted from the truth. The phenomenon of the sun being to the right hand, or to the north of the voyagers, would be observed during part of the year, if they never went beyond the straits of Bab el Mandeb. The time allowed for the circumnavigation is too short; and the difficulty of rowing and reaping on an unknown coast, to say nothing of the opposition which the natives might offer, and the dangers of the voyage itself, are serious objections: and, finally, the navigation which Herodotus had at heart, the prevailing one, that Africa did not extend so far south as the real equator, is decisive against the truth of the voyage. If it ever had been made, it is impossible that so erroneous a notion as to the southern extent of Africa would have been correct. This has been established by Professor Munnart's Geography of the Greeks and Romans, vol. i., for further examination of this question, and other supposed circumnavigations. Compare also Gesselin, Géographie des Grecs Analyzée, p. 106, 8vo.

Another ancient voyage is somewhat better authenticated. Hanno, one of the ruling men of Carthage, or king, as he is termed, sailed from that city through the straits of Gibraltar, to establish some colonies along the Atlantic coast of Africa south of Morocco. His fleet consisted of 50 vessels, and 30,000 settlers, whom he left at various places, and then bent his course further south. He passed a river with crocodiles and river-horses in it, and it has, therefore, been concluded that he went at least beyond the Senegal; but it is not certain whether it was so far south. It is evident, though it must have been considerably to the south of the Senegal, according to the statement of the voyager. Yet it could hardly be farther than the Sierra Leone coast, and it seems more probable that the Senegal, and not so far south, is entitiled to the greatest respect, gives this extent to what the Phenician circumnavigation of Africa, which makes us esteem so much and so many scurrilous than we otherwise would be in reviewing the story of this voyage. It is singular, however, that the Phoenician circumnavigation of Africa, which makes us esteem so much the Phoenicians, does not carry Hanno farther than the latitude of the Canaries. Polybius, the Greek historian, was sent by Seipio Amilinus to explore the same coast, (Pliny, v. 1,) but it is impossible to state how far he went, from so defective an extract as that contained in Pliny. The time at which this voyage of Hanno was made is uncertain, though we are inclined to place it before n.c. 450. Herodotus, however, who lived after this date, says nothing about it; yet this is not so strong an objection as it might appear at first, since Herodotus, consistently with the plan of his history, never mentions the Carthaginians, except incidentally, and then not without a kind of reproach; though we are not certain of the correctness of this objection about them than he has told us. The voyage of Hanno, which was originally written in the Punic language, has come down to us in a Greek translation, though probably not very authentic; it is contained in Hudson's Collection of the Minor Greek Geographers, vol. i.

When the Greeks were settled in Egypt under Ptolemy, the son of Lagus, one of Alexander's captains, (a.c. 333,) they necessarily became better acquainted with the Red Sea and the course of the Nile, and in the Roman epoch we may date the extension of that trade with India, by which the products of the great Asiatic peninsula and of Ceylon were more generally diffused over the western world. This trade existed in great vigour under the Roman emperors, and we have an example of it as late as the sixth century of our era, in the work of Cosmas. Indeed the origin of the trade between the Indian peninsula and Arabia, and Eastern Africa, belongs to a period anterior to any history; and this commerce has probably been totally interrupted at any time from the commencement.

One of the most curious documents with respect to ancient navigation on the east coast of Africa, is contained in the Periplus of the Erythraean Sea, which goes under the name of the Periplus of Hanno. As we have already stated, the compiler has carefully mentioned the articles of export at each place of importance, and also has informed his readers what kind of commodities would meet with the readiest sale.

From the tables of Ptolemy, the Greek geographer, it appears that the coast of western Africa was known, probably though the navigation of the Carthaginians and the Romans, as far as to 11° north of the line. It is a curious coincidence that Hanno, who sailed under Sichorias, was an adventurer of the Carthaginians, and accompanied with the countries south of the Great Desert, and with the upper part of the river Quorra, commonly called the Niger. Herodotus tells a story, which he heard from some people of Cyrene, of some young men of the Nasamones, a tribe of Libya, who set out for the Sclater (river) and came to the Niger in a westerly direction, and coming to a great river which ran towards the rising sun, and had crocodiles in it, and black men living on its banks. It is very hard to give implicit credit to all the circumstances of this narrative; and yet it deserves great respect, because there are real facts corresponding to the description. The nature of the narrative, however, is such as to render it impossible to demonstrate satisfactorily either the truth or falsehood of this early discovered navigation. For the period with which we are dealing, many of the facts which appear in the records of that time may be omitted in forming an opinion as to the knowledge which the ancients had of central Africa. It can hardly be imagined that the powerful state of Carthage, which employed so many elephants in war, and carried on so extensive a commerce, could be ignorant of the coast of central Africa; while the articles of commerce, which the interior now furnishes to the coast of Tripoli, were commodities in which the Carthaginians used to deal, such as slaves, ivory, gold, &c. As to any objections raised to this statement, the discovery of the Punic king of Hanno, who was found in Mauritania, we well know how to estimate that writer's evidence on such points; it is indeed of very little value, even though supported by Strabo, and the Periplus of Hanno. Seleucus Nicator kept a stud of 500 elephants
commonly called the Niger, might have been thus known to the Romans. In examining the tables of Ptolemy, in which the positions of places are laid down according to their latitude and longitude, we find no reason to doubt their general accuracy along the western coast as far as N. lat. 11°. He has also given the position of a number of places in the interior, on a river which he calls Nigir; and the direction thus assigned to the river will come as near the truth as we could expect it to be, even if we knew Ptolemy’s tables to be constructed upon real observation, such as was practicable at that time. A complete discussion of this question is given in the second Number of the Journal of the Royal Geographical Society of London, by Col. Leake, who is in favour of the opinion that the Joliba of Park, commonly called the Niger, was known to the Romans, and to Ptolemy, who constructed his tables from all the materials accessible to him in the rich commercial city of Alexandria, where he lived.

The Fortunate Islands (now the Canaries) were known to Ptolemy, and he reckons all his eastward distances or longitudes from them, or from some one point in them; for he does not appear to have known anything accurate as to the relative position of these islands. And as coasting voyages had considerably extended the knowledge of the east coast of Africa, without however showing any termination of the land, Ptolemy concluded that the southern parts of Africa joined the eastern parts of Asia, and thus he converted the Indian Ocean into an inland sea.

The Greek and Roman writers mention the following remarkable African animals with which they were acquainted:—the crocodile and the hippopotamus, both in the Nile and the rivers of western Africa; the giraffe, or camelopard; the elephant; the two-horned rhinoceros; and the ostrich. With the exception of the hippopotamus, all these animals were at different times seen in the Roman capital. The camel is not mentioned as being found in
Africa by any ancient writer, we believe, except Herodotus (vii. 69, 86, ii. 9), and it is therefore concluded that it was introduced into this continent by the Arabs: this opinion was to be borne in mind before the head of Abraham was quoted.

On the occupation of Egypt by the Arabs in the seventh century of our era, and the spreading of this conquering people through Africa, the regions south of the Sahara soon became known to them, and felt the influence of their religion and manners. The Moors, therefore, it has been inferred, were in the habit of sending caravans across the Desert to Sudan, as the country south of the Sahara is often called, and they accordingly possessed some knowledge of these central regions long before they were visited by any Europeans. Ibn Batuta, the Arab traveller, could not be said to add much to the information contained in the Greek and Roman writers, if we admit that the evidence is satisfactory as to the acquaintance of the latter with the regions south of the Great Desert. With the exception of Leo Africanus and Ibn Batuta, the latter of whom, in the fourteenth century, visited the banks of the Joliba, it does not appear that any of the extant Mohammedan writers were personally acquainted with Sudan; and their accounts must therefore have been derived from the merchants who accompanied the caravans.

Edrisi, who studied in Cordova, and wrote his book in Sicily (about A.D. 1153), can only be considered as a geography, and not a discoverer. He was a native of Ceuta in the north of Africa, and the Arab travellers cannot be said to have travelled much in the south, unless we know. Ibn Batuta, who was a wanderer for thirty years in Asia and Africa, crossed the Sahara from Segelmessa, and visited Sego and Timbuctoo. The work of Ibn Batuta, which has been translated by John of Bohemia, and is known as the Book of the Life of Lee of Cambridge. John Leo, an Arab of Granada, commonly known by the name of Leo Africanus, also crossed the Desert in the early part of the sixteenth century, and visited the cities on the banks of that great river which has given its name to so many conjectures. Leo wrote his work on Africa at Rome, during the pontificate of Leo X. According to some accounts, it was already written in Arabic when he was taken prisoner by the Christian corsairs and presented to Leo, at whose request he translated it into Italian, and thus became accessible to the nations.

Though the descriptions of the Arab geographers are often vague and unsatisfactory, they still show in some directions a more extensive knowledge of Africa than the Greeks and Romans have left on record; and indeed their accounts have been sometimes singularly confirmed by the inquiries of our own age. As an example, we mention the description given by Ibn-el-Wardi of the natives on the east coast of Africa, of their selling their children for slaves, their hating their children born of Moors, and how among the people of that coast. [See Sa'di's Abyrnisin, p. 56.]

II. The only portion of the west coast of Africa with which European navigators were acquainted at the beginning of the fifteenth century was that between the Senegal and the Cape of Good Hope. It was, as we have seen, 28° 40' south, an extent of not much more than six hundred miles. From this point commenced that career of discovery, by the Portuguese, by which the entire coast of Africa has been made known to the modern world. The history of the Portuguese navigation has been written by various authorities of that nation, whose accounts do not perfectly agree in all particulars. The most voluminous and elaborate work on the subject is the Asia (otherwise entitled the Decades) of Jolin de Barros, which has never been translated either into English or French, although a very brief abstract of part of it in the latter language, professing to be a translation, is to be found in the Collection of Voyages by Melchisedech Thevenot. The other principal authorities are Ozorio's History of the Portuguese in the Indies, or the History of Emanuel (of which there is an English translation), the Asia Portuguesa of Manuel de Faria y Sousa (also translated into English, as well as into Italian and French), the History of the Discovery and Conquest of the East Indies, by João de Barros, and the Hindu-Canaeas (or De Indiis, as we publish), and the Tratados of Antonio Galvao, of which there is an English version in Hakluyt.

The original promoter and for a long time the director of these expeditions was Prince Henry, called John I, commonly called the Bastard, King of Portugal, and of his wife Philippa, daughter of John of Gaunt, and sister to Henry IV. of England. The curiosity of Prince Henry had been first excited about the unexplored parts of Africa, by the accounts of the country of Guinea, and the kingdoms in its neighbourhood, which he had received from the Moors. Animated by the desire to acquire further information about these countries, he took up his abode, in his twenty-first year, at Teryanabal, in the Bay of Sagres, not far from Cape St. Vincent, the point of his native country nearest to the coast of Africa, and prepared to devote the remainder of his life, as in fact he did, to the task of achieving these discoveries.

Before this, however, a single ship appears to have been sent out, in the year 1412, by King John, which had doubled Cape Nun, although other accounts say that this exploit did not take place till 1415, when a large vessel was dispatched by the Prince. The navigators advanced for about sixty leagues farther along the coast, which was found continually to trend to the south-west; when at last they came upon a point which projected so far into the sea, and was lashed by the waves with such fury that they were afraid to attempt to pass it, and returned home. This formidable promontory, since known by the name of Cape Bojador, that is, Projecting or Round Cape, (in lat. 26° 20' S.) does not appear to have been doubled till 1432, or 1433, when, after several attempts, it was at length doubled by Gilianez, by whom also its present name was given to it. Meanwhile the isle of Porto Santo, one of the Madeira group, had been accidentally discovered in 1418, by Zarco and Tristan Vaz, who had come upon it in a storm.

In a second expedition, in the year 1434, Gilianez advanced about the coast of his nation, and landed on a coast, where he saw men and flocks, and to which, from a fish which he found there, he gave the name of the Angra de Ruivos, or Bay of Gurnets. In 1440, Antonio Gonzalez proceeded as far as to Cape Blanco, in lat. 20° 47', but being cast away, he was only in February in Spain. The latter navigator also discovered at the same time the isles of Adeget and Las Garzas (or the hawks), two of the Arguin or Arguin group, lying immediately to the south of the cape. The Portuguese afterwards formed a settlement in these islands.

In 1444, a number of individuals in the town of Lagos in Portugal formed themselves into a company for the prosecution of African discovery; and an expedition, fitted out in that year, made at last a voyage as far as to the twenty-first degree of south, and established the possession of two of the other Arguin islands, named Nar and Tider. In 1446, Dinis Fernandez sailed as far as to Cape Verde, in lat. 14° 48', along a coast running nearly due south from Cape Blanco. Next year, Lancelot (or Lancarote, Lanzarote, or Lanzarote, as it is called), and Vincent, of the same expedition, discovered Cape Blanco and Cape Verde, a great river called by the natives Ouedec, but to which he gave the name of Sanag, or Canagai, being, say Barros and Sousa, that of a Moor whom he put ashore at the place. But it was doubtless the name of the individual, but of his nation, which he gave to the river; which was really, therefore, named, as Remelli, apparently without recollecting the statement of these writers, has conjectured, from the Senhaji or Assanahaj, in our maps the Vinhage, and in those of Milius and Abulveda, who inhabit its northern bank. See Geography of Spain, vol. ii. p. 28, note. Edition of 1830. It is the same which is called in English maps the Senegal.

Lancelot also on this voyage touched at the isles of Palmis and Gomera, two of the Canaries, which group, however, was known to the ancients, and had been re-discovered and in part taken possession of by the Spaniards about a century before this time. In 1447, Nunno Tristan advanced about sixty leagues beyond Cape Verde, along a coast now trending to the south-east, and discovered the Rio Grande, which name he sailed up which he was attacked by the natives, and killed, with the greater part of his men. The following year, the Azores—which, although lying nearly due west from Lisbon, have been discovered by the Portuguese, and are inhabited by the Bruns, and other geographers, to belong properly to Africa—were discovered by Goncalvo Vello, and about twelve years after colonized under the auspices of Prince Henry, to whom a patent or charter was granted for that purpose by his nephew King Alphonso V.
In 1449 (Sousa says 1460, and other authorities 1462) the Cape Verde islands, the nearest of which lies about 200 miles west from that promontory, were discovered by Antonio di Noli, a Genoese in the service of Prince Henry. The prince died in 1463, at the age of sixty-seven; but the zeal for African exploration, and the prosecution of that zealous and patient search for the source of the Nile, was never brought to a close. The voyage of Diogo Cão, which, though not in itself a successful voyage, but which was more a failure than a triumph, set the sign in the history of geographical discovery. He left the mouth of the Congo in 1481, and reached the Cape of Good Hope on the 19th of November, and put in at the bay of San Blas, sixty leagues beyond it, left that station on the 8th of December, and on the 16th passed the island or rock of Santa Cruz, where Dias had thought he had reached Africa; he then steered for the river which he named Dos Reis (the River of the Kings), from having discovered it on Epiphany day. The part of the coast to the south of this he had called Tierra de Natal, in allusion to the season of Christmas. To the portion beyond, where he had some intercourse with the natives, he gave the name of the Land of Good People. The next place at which he touched was the Cabo de Correntes (that is, the Cape of Currents), near the tropic of Capricorn; from which keeping out to sea, he passed the river and rather deep forth from the coast, which was navigated by him, so as to effect his voyage for the futurethe chart of the Portuguese settlements, and after the new king added to his other titles that of Senhor de Guiné (Lord of Guinea). After this the circumnavigation of Africa was prosecuted with renewed spirit, and one of the projects in the coasting and trading ships was to find some means of reaching the African coast at about 27°, east of the meridian of Cape Verde, and it was not found again to recede westwards. In 1484 took place the voyage of Diego Cão. He sailed from Elmina, and advanced as far as the River Congo or Zaire, the outlet of which he could not find, and he charted some miles returned, and pursued his way along the coast till he reached first what he called Cape St. Augustin (in lat. 13° S.), and after that Cape Cross, or de Padrono (in lat. 22° S.). At each of these points he set up a great cross of stone, having inscribed on it the name and his own, with the date and other particulars of its erection. The next was the celebrated voyage of Bartholomew Diaz, who, setting out with three ships, was commanded, if possible, to seek the nations of Ethiopia, and to arrive at the extremity of the continent. Having accordingly proceeded the farthest point reached by Diego Cão, he proceeded until he came to what is now called Sierra Parda (in lat. 24° S.), where he erected his first cross, calling it Padrao de la Imagen del Cristo. The Cosmographer, a little farther to the north, he maintained for twenty days. On leaving this station he was driven out to sea, when, attempting to regain the coast, he came to what he named the Angua dos Vaqueiros (or Bay of Herdsmen), and found the land stretching to the north. He had, in fact, doubled the terminating point of the African continent without knowing it. He continued his voyage past the Bay of Herdsmen till he came to a small island in the recess of Algoa Bay, which he named Santa Cruz, or the Holy Cross; and there, according to Barros, compelled him to put back after he had erected his second cross. Other accounts, however, state that he proceeded for about twenty-five leagues beyond this, when he found himself at the mouth of the river of Del Infante, so called after the discoverer, who was afterwards reproved. On his way back, Diaz came in sight of the long-looked promontory which we now call the Cape of Good Hope, the name given to it by the Portuguese—king; but he entered it only as a neutral country. After the death of Deus de Goa, Portuguese trade relations were entered into by the garrison of Elmina with the King of Benin, the region lying at the head of the Gulf of Guinea; and from the people of this kingdom, intelligence was received of a great potentate whom they called King Ogua, living at a place about 230 leagues in the interior, from whom each sovereign of Benin, on his accession to the throne, was said to receive a sort of investiture. It was immediately concluded by the Portuguese, that this could be nobody but Prester John; but Ogua was, no doubt, merely one of the great mo
narchies in the interior, in all probability that called Ghana by Edrisi, and Kano by Clapperton, which, although now much reduced, is represented as having been formerly one of the most powerful in Africa. In 1487, also, two expeditions set out from Lisbon to find out the dominions of Prester John, and a route to India by land; and one of these, proceeding by Cairo and Aden, reached Goa in India, returned thence by Sofala, and afterwards penetrated into Abyssinia, where he was detained for some time. The other, going by the head of the island of Madagascar, called by the Portuguese at first St. Lawrence, the existence of which, however, had been long before made known to Europe by Marco Polo. Several natives of Africa, likewise, were on different times dispatched to visit the coast. Immediately before the adventurers we have just mentioned set out on their enterprise, a negro prince named Bemol, from the nation of the Julofa or Yalofis, to the south of the Senegal, arrived in that city to solicit the assistance of the Portuguese to replace him on his throne, from which he had been driven by some rival. This application afforded those to whom it was made a favourable opportunity of introducing themselves into this part of Africa, of which they immediately took advantage. They soon formed various establishments along the coast, and lying between the territories of Gambia, and along the banks of these rivers; but although they eventually spread themselves to such an extent in this district as to create a large population of mixed Portuguese and African blood, it is not exactly determined how far this population had penetrated into the interior. They, also, however, in course of time, acquired important settlements further to the south, along the banks of the Zaire, and in other parts of Congo; and the information which was obtained during the early period of their dominion respecting the geography of that and the neighbouring regions has been more fully given to the world. It was derived principally through the successive missions which were sent out, in the course of the seventeenth century, to attempt to christianize the inhabitants, and the greater part of it is to be found in Labat's Relation Historique de l'Ethiopie Occidentale, published at Paris, in 5 vols. 12mo., in 1732, with maps by D'Anville. The country actually traversed by the missionaries may be generally described as extending along the coast trade carried on at Leghorn, and the points farther north that they subsequently built on the island of Mozambique, (which became the capital of their eastern settlements,) and along the banks of the river Zambezi, a short distance to the north of Sofala. From these positions they obtained accounts more or less accurate respecting the whole coast of Zanquebar and Ajan as far north as Cape Guardafui, which may be found in Barros. They had also some intercourse with the Macooa or Makoona, whose territory, lying some days' journey from the coast, is described as extending beyond Melinda as far south as to the Zambezi. On that river they had still factories at Tete, nearly 400 miles from its mouth, and at Zamo, which is almost twice that distance inland. The most recent account which has come to hand of the Portuguese settlements on this and the opposite coast, is Mr. Bowdich's work entitled An Account of the Discoveries of the Portuguese in the Interior of Angola and Mozambique, Lond. 1824. This volume, the information presented in which was derived partly from the maps and plans, and partly from the communications of Count Saldanha de Gama, who had been for some time governor-general of Angola, contains maps of the country between the two seas, as far as it is known. In Mr. Bowdich's map, Maze is shown as the principal town opposite to him, the natives by the settlers on the east coast in gold, ivory, and slaves, is placed nearly on the 19th parallel of latitude, and in long. 31° 30' E. from Greenwich. This map has been maintained by some writers that, long before Cape Nun was passed by the Portuguese, settlements had been formed on the coast of Africa by the French, very far to the south of that Cape. The Abbé Labat, to whom we have just referred, and after him the Abbé Demanet, in his Nouvelle Histoire de l'Afrique Françoise, 2 tom. 12mo., Paris, 1767, assure us that so early as the middle of the fourteenth century, the merchants of Dieppe had establishments and a trade at Basque, three leagues south of Cape Verde, and that by 1364 they had extended their intercourse as far as to the river of Sierra Leone. In 1365, these writers go on to say, a company was formed at Rouen, for the African commerce, which, the following year, founded depots at Rio de Janeiro, in Brazil, four leagues south of the Senegal, on the Gambia, on the Sierra Leone river, and along the Grain coast. One of these settlements, it seems, was called Little Paris, and another Little Dieppe. In 1382, Labat, in his Relation, gives an account of the progress of this, coast, and also of Acors, Coromentin, and others. All these establishments, however, they after some time abandoned, except those on the Senegal. As the authority for this history the Norman chronicles are appealed to; but All we cannot yield its unaltering belief. What is more certainly known with regard to the early intercourse of the French with the west coast of Africa, is that they appear to have been in the practice of sending four or five ships annually from Normandy to the river Gambia, soon after the discovery of the river. The Senegal and Gambia were also, the writer of an account of an English voyage to the Guinea coast, in 1591, printed in the second volume of Hakluyt's Collection. The company to whom these vessels belonged were certainly bankrupt in 1596; but a settlement which had been made on the Senegal, when, in 1664, they were compelled to sell them to the West India Company, that year established by royal charter. This association, however, broke up in 1673, when its African establishments fell into the hands of a new company, the Western Africa Company, which acquired most of the isles of Goree and Arguin; but they were driven from both in 1678 and the following year, by an armament sent from France under the conduct of the Count d'Estrées; and at the peace of Nimerguen these conquests were retained by France, and the West Indian Company, in 1701, by a decree of the Senegal, that, by treaties with the native princes, possession was subsequently obtained of all the coast from Cape Verde to the river Gambia,—being an extent of about fifty leagues,—and to the depth of six leagues inland. French attempts to extend their dominion beyond, were frustrated before than these, stretching from Cape Blanco to Sierra Leone, or over about thirteen degrees of latitude, and going back also into the interior along the Senegal for some hundreds of miles. We do not mean that the company had acquired the sovereignty of all this territory; but that these settlements were spread from one extremity of it to the other. The French African Company, however, repeatedly failed as a commercial speculation; and besides the one formed in 1698, another was undertaken in 1720, and this had been successively associated and dissolved, when, in 1717, the trade was, by an edict of the crown, transferred from a third to the famous Western or Mississipi Company then newly established. On the failure of this short lived scheme the African settlements were taken possession of by the crown, and the trade left free. France still possesses, in this part of Africa, some inconsiderable settlements. Several journeys into the interior were undertaken by the French residents at the mouth of the Senegal about the close of the seventeenth and the commencement of the eighteenth century, accounts of which are given in Labat's Nouvelle Relation de l'Afrique Occidentale, 5 vols. 12mo., Paris, 1726. The most important of these were the voyages of Jean-Pierre Demanet, in 1694 and 1695, of this he contributed a portion of the Senegal, in 1674, 21° 41' 50' E. to Paris, the capital, of the king of the Four-
vancing season to carry him back, induced him to return without accomplishing that object. He heard, however, while in Gallam, of the kingdom of Bambouk, situated to the north-east of it, and of Bamburra beyond that. East of Bamburra, he was told, was the territory of the kingdom of Ginhala. He was also positively assured by some of his informants (although the statement was contradicted by others) that the Niger, which he supposed to be the river from which he had started and carried him towards the west, but towards the east, as it passed Timbuctoo.

It was not till some years after this time, that the French appear to have heard of the kingdom of Bambouk, lying to the south of Gallam, although it had formed part of the conquests, he supposed, of the Soudan. His narrative indicates that he was not to be deterred by the reports from beyond that he had heard of the king of Ginhala, and proceeded towards the east, and was then at Timbuctoo.

During the same time, another expedition under the command of Captain Tuckey, to the Congo, in the idea that it would be found to be the same with the river of which the Niger, ascended that river for about 280 miles, and also examined part of the adjacent country. At the same time, Major Peddie, and after his death, Captain Campbell, conducted another party from the mouth of the Senegal through the Foulah territory as far as Kakundy. In 1817, Mr. Bow-
dich explored a part of the extensive territories of the Tambautes, surrounding the coast, and travelled nearly a hundred miles into Guinea, where the English settlement of Cape Coast Castle is established. In 1820, very considerable additions were made to the knowledge formerly possessed both of the western coast of Africa, and of the interior of the Senegal and the Gambia, in which, setting out from the island of St. Louis, at the mouth of the Senegal, he traversed the country in a south-easterly direction as far as the town of Timbo, nearly 10° N. lat. and above 14° W. long., from the country of Mansor, South Carolina, by means of the expedition of Messrs. Ritchie and Lyon, who, in 1819, penetrated from Tripoli to Mourzouk; and from the journey performed, in 1821, by Major Laing, from Sierra Leone, through the Timannee, Kockran, and Soolima countries.

But a more important and successful attempt than any which had been hitherto made to explore the interior of Africa was that of Major Denham and Lieutenant Clapper-
ton, in 1822. These travellers, setting out from Tripoli, with a caravan of Arab merchants, crossed the desert and reached the great inland sea or lake called the Tchad, the coasts of which, to the west and south, were examined by Major Denham, while Lieutenant Clapperton proceeded to the kingdom of Yar-biba, and afterwards explored the country of the Fellatals, till he arrived at Sackato, situated on a stream which probably runs into the Joila. A great mass of information respecting these hitherto unvisited regions, lying to the east of Timbuctoo, was obtained in the course of this expedition; but not much that could be de-
pendent on was learned as to the remaining course of the Niger, or the Quorra, as it was found to be called at Sackato. It was very generally stated to flow into the sea at Funda, but where that place was could not be exactly ascertained. Soon after Clapperton's return to England, however, he was sent out by the government in the command of a new expedition, the plan being that he should endeavour to penetrate to the scene of his former adventures from the coast of Guinea. After a long residence in the interior, he returned by a sea route, and reached El Fihri, and the kingdom of Yar-biba, by the same route by which he had entered the country, and crossed the desert, in the east of Timbuctoo, and taking a north-easterly direction proceeded towards the kingdom of Yar-

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1785, the chief efforts had been made in the prosecution of discovery in the interior. The expeditions sent out by the Association and by government had been, and still were, the only attempts which that had been made on the Niger and the Niger from various points. But no considerable progress was made till the first journey in 1795 and 1796 of Park, who on that occasion proceed-
[THE PENNY CYCLOPÆDIA.] VOl. 1-2 A
mentioned, had succeeded in making his way across the desert from Tripoli to Timbuctoo, in August, 1826, and had transmitted some brief notices of that famous city, where he spent some weeks. But he was murdered on his return in the desert, and none of his papers have yet been recovered. There has also been lately published an account of a journey from Sierra Leone to Timbuctoo, performed by a M. Cabille, a native of France; but although the truth of his narrative is generally acknowledged, it is by no means certain in its geographical details, that it cannot be said to have added much valuable information to our knowledge of the countries to which it relates. The discovery of the long-sought termination of the Joliba, a river which had more than once been effected to some fortune and well-conducted enterprise of Richard Lander and his brother. Leaving Badagery on the 24th of March, 1836, these two travellers, following nearly the same route which had been taken by Clapperton through the kingdom of Zayus, reached Bondoo, on the 17th of June. They afterwards ascended the river as far as Yauri, from which they returned to Bondoo, where they remained for some time, and then embarked on the river which they hoped would conduct them to the sea. In this expectation they were not disappointed. After various adventures, Richard Lander had at last the happiness, on the evening of the 18th of November, to find himself at the mouth of the greater branch of the river, here called the Timbuctoo, or the East Branch of the great town of Brass which stands upon its banks a short distance inland.

There is another great branch entering the sea a few miles more to the south, called the second Brass River. The traveller was afterwards joined by his brother; and the two were on the 10th of June, 1837, in the Bay of Bondoo. They left England again with two steam-vessels and a transport, which were built and fitted out by some spirited merchants of Liverpool for the purpose of attempting the ascent of the Niger, if possible, as far as Nankafou or Timbuctoo, and penetrated as far as the 25th of December, and the latest accounts that have been received of it were dated the 11th of October, 1832, at which time it had safely reached Cape Coast Castle.

The zero of discovery in Africa, which has been so strangely felt within the last half century, has also sent out a succession of travellers to explore the southern regions of that vast continent. The principal settlement in this quarter, that of the Cape of Good Hope, was founded by the Dutch about 1650, and remained in their hands till it was finally taken from them by the British in 1806. For more than a hundred years after the establishment of this colony, it occupied only the extreme angle of the African continent, or a part of the narrow strip between the sea and the nearest mountains; it also seems to have been obtained with regard to any of the native tribes, except the nearest Hottentots, lying beyond that boundary. The first traveller who penetrated any considerable way into the interior was Captain Henri Hop, who was sent out on an expedition by the Dutch Governor in 1714, and traversed a considerable part of the country of the Namquans. He was followed by the Swedish naturalist Sparrman, and by Vailant, whose journeys were made between 1773 and 1776, and extended to the territory of the Boskman, three or four hundred miles north from Cape Town. In 1797, the regions lying in this direction were traversed by Mr. Barrow from the territory of the Caribs in the east, to that of the Namquans in the west, including the desert of the Karroo, as far north as the foot of the Snowberg, or Snow mountains. In 1801, the great barrier formed by this range was for the first time passed by Messrs. Trouter and Summerville, who, crossing the Gariep or Orange River, penetrated as far as Lord Byron, the capital of the Boshmanians, after another party, under the conduct of Dr. Cowan and Lieutenant Donovan, was sent out from Cape Town to cross the country to Mozambique, or Sofala, and accounts were received from them on the 24th of October, 1801, and the next day, after having advanced eleven days' journey beyond Lattakoo, but were not heard of again till the 5th of December. The expedition now makes a more complete investigation of the desert, the Bochmanas, and the other tribes whose territories they traversed, than had been before obtained. Mr. Burchell also reached Lattakoo in 1812; and in the follow-

year it was visited by Mr. John Campbell, the missionary. In 1820 the same gentleman returned to that capital, and proceeded thence as far east as to the latter's unvisited city of Moshow, from which he directed his course southward till he reached Kienchwama, about latitude 17° south-west from this last town he found himself on the borders of a desert which he was informed extended an immense distance to the westward. No traveller has since penetrated so far to the north as Mr. Campbell did in his journey to Lattakoo. He was more visited by Mr. George Thompson, whose accounts of many parts of the country lying between this point and the colony, as well as of some of the Caribs tribes to the east, are much more authentic than those which have yet been given to the public. The map of South Africa, which is given in the second volume of Mr. Thompson's travels (London, 1827) is also, we believe, the fullest that has yet been published; but it is unfortunately so unskillfully lithographed as to be of no service in any part of its nearly forty pages.

Our limits render it impossible to give even a brief sketch of the history of modern discovery in the Nile Valley, and the other north-eastern parts of Africa not included in the above outline. We should not omit, however, the journey of Mr. Brown to Dar-Fir in 1753, where he was detained nearly three years. Though his movements within Dar-Fir were confined to a very limited space, his work contains a great deal of curious information on a country before that time totally unknown on the map.

The expedition of the Beecheys in 1821 and 1822, from Tripoli eastward to the Great Syrtis and the Cyreneans, has made us more intimately acquainted with a most interesting region, only imperfectly known from the earlier accounts of Bella Cuff and Cappon.

Of Egypt we shall speak more particularly under that head, and for a brief notice of discovery in Abyssinia, we must also refer to that article. At the present time one of the missionary societies has its agents in Abyssinia, whom we hope will, by their inquiries, which their mission, will add to our stock of information on that country, and thus by facilitating commercial intercourse, contribute further to the social improvement of the numerous nations on this part of the continent. The travels of the Roman and the Greek, who, in the 1st and 2d centuries of the Christian era, penetrated into the kingdom of Sennar (12-21), and the travels of the Kippel in Nuba, Kordofan, etc., have added considerably to our knowledge of these regions. The latest expedition with which we are acquainted up the Wali, which stream is joined to the Nile, is that of Ambrose Lanat, who, in 1878, ascended this stream beyond Alexis. [See Journal of London Geogr. Soc., vol. it.]

The large island of Madagascar will require a separate notice. We do not speak of it very intimately acquainted with it. [See Missionary Gazetteer.]

III. The extent of the African coast, and the portentous surveys of the navigator, will be seen from the following tabular view:—
IV. This enormous peninsula is attached to the Asiatic mass by the isthmus of Suez; but at two other points, the strait of Malacca, and those of Gibralter, the distance between the most southern extremes of the continents is from 37° 20' N., and that of Cape das Agulhas, (Cape Needles,) the most southern part of the continent, is about 34° 50'S. The distance between these two points is about 5000 miles. That of the strait of Malacca is shorter, but it is very barren of water as the streams which terminate in the bold headland, called by the Portuguese Cape Guardafui, in N. lat. 11° 50', E. long. 51° 22'; this is the most eastern point of Africa. Its extreme western point is Cape Verde, N. lat. 14° 45', W. lon. 17° 32'; the distance between these two capes, in a direct line, is not much less than 5000 miles.

The geographical position and coast line of Africa are characterized by lying for the most part within the tropics, and by the comparatively few deep indentations of the coast. Its northern shores, as the Mediterranean, are the most irregular part of the African coast, presenting the indentations of the Arab gulfs, the large gulf of Sidra, and that of Cabes. Many parts of this shore, especially about the Gulf of Sidra, but more particularly the Jornada, and the shores of the straits, is considerably elevated, and, as the regions of Marocco, form the most favourable part of the whole African coast for the settlement of those. The western coast of the Indian ocean, being of any considerable magnitude, the Nile, flows from the African continent into the Mediterranean, but this is one of the most singular streams in the world, whose course the traveller may follow from the coast into the interior for about 1200 miles, with one great branch that adds its waters to those of this mysterious river. The streams of the Atlas regions that enter the Atlantic, though numerous, are inconsiderable as to the volume of water; the chief is the Mejereiah, the ancient Magra, a river that enters the desert of Fezzan, and is subject to periodic inundations in the lower part of its course; and the perhaps larger river Molouyiah, which belongs to the empire of Marocco. The Atlantic washes the western coast of Africa, which, within the dominions of Marocco, presents a coast generally low, and crested in the interior by fertile plains of immense extent. Numerous streams, some with a considerable length, of course, such as the Wali Sebbo, Oom or begh, &c., flow from the desertic mountains, and extend generally through the empire of Marocco. South of this region, the arid character of the Sahara is found extending even to the shores of the ocean, and hardly disappearing before we arrive at the Senegal. From the Senegal to the Cape of Good Hope the African continent is very barren, but the same rapidity of navigation and of observation has not been applied to all parts of it. The great characteristic in its outline is the gulf of Guinea, the northern shores of which have a general direction east and west through 20° longitude. With the numerous rivers that flow into the Atlantic between the Senegal and Cape Negro, (N. lat. 16°,) we are still imperfectly acquainted; and the numerous openings that are observed on many parts of this coast indicate outlets of rivers, or channels formed by islands, which yet remain to be explored. The Senegal, Gambia, and Rio Grande, are the three largest rivers north of Sierra Leone, though the precise nature of the lower channels of the last-mentioned is not yet ascertained. Captain Belcher suspects the existence of a large estuary, the inlets of which are the basins of Lagoons between the Rio Grande, and the Nuébus. The late expeditions of the Landers has determined the long doubtful question of the outlet of the Quorra in the bight of Benin; and the river Nun is now ascertained to be one of the few channels by which the John River is communicated with the ocean. The great African river, south of the equator, is the Zayre or Congo, which is found, on ascending its stream, to show a less volume of water than would be inferred from its appearance, the river being supplied with other large African rivers, and leads to no safe conclusions as to its course being comparatively short. Between the Congo and Cape Negro there are numerous streams, such as the great Coanza, and others which are of minor importance when compared with the Congo and Coanca, which appear to be the great rivers of south-western, as the Zambezi is of south-eastern Africa. From Cape Negro or the Banbraghore to the Orange river, we have a coast of 600 or 800 miles without fresh water. The Orange river is a large stream, perhaps the fourth or fifth among African rivers, whose course to the Atlantic is determined, though its numerous tributaries rise far in the interior, by the general slope of the country. The coasts which form part of the surface of the Atlantic

The Cape colony, within the limits now assigned to it, is now so far known, that its geographical features need not be noticed in this general sketch; but we may remark, that the common notion of Africa terminating in a point requires correction. The mountainous plains which run east and west within the limits of the colony form a series of heights and terraces, which are bounded on the south by an extensive line of coast running in the same direction. From False Bay to the extremity of Algos Bay, we have a line of coast above 400 miles long, running nearly due east and west, and presenting to the southern ocean as broad a front as the Spanish peninsula offers to the Atlantic.

The great known river of the eastern coast is the Zambezi, which, though low in the dry season, is provided with prodigious channels to receive the floods of the rainy months. Further north on this coast, near the site of Melinda, we find the outlets of streams from the interior; and it is probable that the Zebra river and its branches, which are not unlike the other south African streams, we are acquainted, from the narrative of Fernandes, with its upper course, which lies north of the equator, but not with its lower course near the coast. The great currents on the coast of Africa are too remarkable to be entirely passed over; but as those which are best known belong to the North and South Atlantic, a brief notice of that round the Cape will be all that is necessary here.

The great bank which lies off the coast of South Africa, and takes its name of Agulhas, or, as it is often incorrectly called, Lagulhas, from the Cape of that name, has probably been partly formed by the action of currents. It is, indeed, the most extraordinary phenomenon which produced the terrace lands of the Cape; but it has also received great ascensions of sand and wood from the action of the currents. Two main streams, one from the Mozambique channel, the other from the open Indian Ocean, impelled by the S.E. trade-wind, unite nearly opposite to Cape Padron (26° 20'E. long.). From the meridian of Cape Recif (25° 36'E. long.) the main stream gradually turns to the west, and strikes on the great western coast, and to the 29° 30' lat. it changed successively to W. 36° S. to S.S.W., and finally (in lat. 38°) it becomes rather east of south. The greatest portion of this current is actually turned round by the east edge of the bank, and finally mingle with a South-west current, and imparts a motion to the waters into the Indian Ocean by a line nearly parallel to its original course. A part of the stream passes over the deep water at the southern extremity of the bank and turns towards the N.W., and then uniting opposite the Cape of Good Hope with part of the main stream, (which crosses the northern part of the bank in a western direction, between 34° 45', and 35° 40') forms a wide stream running to the N.W. as far as 23° S. lat., where it joins the N.W. current formed by the S.E. trade-wind. The existence and course of these currents are indicated not only by their actual motion, but also by their temperature. Off Cape Recif (Reef), where the temperature of the Mozambique stream was found (in June) to be somewhat lower than it was further north and east, it is of the same temperature as the ocean temperature. On the bank, in lat. 35° 45', it has been found 7° above ocean temperature; and diminishing westward towards the edge of the bank, it becomes of the ocean temperature for some distance before attaining its western extremity. When it unites with the southern branch it is found that the currents of the Agulhas have formed the statement above made as to the current that rounds the Agulhas bank joining that which crosses it — the temperature rises again to 4° above the ocean temperature, seen, the farther south the water is not of the southern branch is found. For further information on this current, the reader may refer to our authority (Major Rennell, On the Currents of the Atlantic, London, 1832).

Salt, in his voyage up the Mozambique channel, found the current between Cape Corrientes and Sebastian, setting
strong to the south, so as 'to impede the course not less than sixty miles in twenty-four hours.' And further north (32° 37' S. lat., 41° 24' E. long.), Mr. Salt speaks of 'a strong current setting to the southward at the rate of thirty
not in the two hours.'

On doubly Cape Guardafui the same writer experienced
along the coast, a strong current that headed the ship; but
the information which he gives about it leads to no
conclusions. This current has no connexion with that just
described.
The only other phenomenon of African currents, that re-
quires a short notice here, is that part of the North African
current, as Major Renell calls it, which sets into the Medi-
terranean from the straits of Gibraltar. In these general
times which the Mediterranean experiences from evaporation is
supplied by a constant current pouring in from the Atlantic.
This current is most obvious to the east of a line joining
Capo St. Vincent in Spain, and Cape Cantin (32° 35' N. lat.)
Africa. The form of the coasts is like the wide part of a
funnel, and the straits of Gibraltar are the pipe. It is pro-
ably owing to this rush of water towards the strait that an
eastern current has been perceived, in summer, as far as the
Azores, increasing in the straits to considerable
strength. South of the latitude of the Canaries and Cape Bejaour, the
current, instead of pointing to the strait's
mouth, sets upon the coast of the Great Desert, which is
sandy and low. This current, from whatever cause it arises,
is that which has brought so many ships on this inhospitable
shore, navigators having been deceived in their reckoning by
not estimating the force of the stream. Ships' crews that
have had the misfortune to be cast on this savage coast, in-
habited by a brithish race of barbarians, have frequently either
been shipped of hunger, or been sold into slavery. [See
Renell.]

Africa seems to be a land of terraces, as indeed all widely
extended portions of the earth's surface probably are. It
would appear in general to rise from the coast into the inte-
rior by successive steps which are spread out in widely ex-
dented plains. These are known to exist in some parts,
such as in the Cape Colony, and are indicated in others by
a regular series of falls in the beds of the great rivers—the
Nile, Zanbezi, &c. We know that there is a descent up the Congo, that mountains of considerable elevation are
found at no great distance in the interior; and the late
expedition up the Zambesi, (see London Geographical
Journal, vol. ii.) in addition to former accounts, has con-
vinced the opinion of the country rising into considerable
elevations in the interior. The numerous tributaries of the
Zambesi, and the immense body of water which it brings
down, indicate sufficiently its extensive course and the ex-
istence of elevated regions in the interior. But we are almost
equally struck by the continuation of all Southern
Africa, with the exception of the Cape Colony, and our limited know-
ledge of the coasts. The existence of a large chain like the
Andes, as some have imagined, running north and south, is
not improbable; but improbable is the existence of out-
table-lands is, however, certain. There is no amount of
either native or European having crossed this immense
continent south of the Sahara; nor have the Portuguese
ever effected a line of communication between their settle-
ments on the Angola and Mozambique coasts, though en-
treprising individuals and traders have on each side advanced
far into the interior; and an instance is recorded of a per-
son having crossed the country from Angola, on the west
cost, to Tete, on the Zambesi river, at both of which places he
was acquainted with. J. Bredow, in his account of the
Discoveries of the Portuguese in Angola and Mozambic-
ique.]
The mountain system of Africa must, in many cases, he
infected from the course of the great rivers. The regions of
Abyssinia, in which the Tazawee and the Bahir-el-Abiad,
rise, are in all probability continued westward, if not at so
great an elevation, at least a very considerable one. But
whether these western regions run step by step to a central
mountain tract, or have a more spread out descent, we do not
know. From this remote region the waters of the
Bahir-el-Abiad, or true Nile, descend: and from a somewhat
lower elevation, probably the Miss-elad and other streams that
find their way into interior lakes. It seems now pretty certain that
these large stretches of water are continuous, so as to
separate the basin of the Congo from that of the Tchad Lake
and its affluents, while the basin of the Quorra is again sepa-
rated from that of the Tchad by a range of small elevation run-
ing in a northerly direction. But the distance from the sup-
pposed sources of the Bahir-el-Abiad to the high lands seen by
the landlers from the Quorra in the neighbourhood of Funda
is so great, and would it be a mountain chain continuous across the
continent. The high lands east of the Quorra, about Funda,
seem to belong to the same elevation which runs west of the
Quorra, and then north, and supplies on one side the water of the Senegal.

The Nile, as we have yet no observation with the accurate or numerous
ones to determine the general elevation of the Sahara, though
there can be little doubt that it contains many unimportant
levels of considerable height. (See Sahara.)
The countries north of the Sahara from the southern limits of the empire of Marocco, nearly as far as the Gulf of Sidra, are sometimes comprehended under the general name of Des Atlas, which, so called from the predominant mountain range to which that name is given. The various branches and the geological character of this range will be described under the head of Atlas. This region contains on the Atlantic coast fertile plains, bounded by the coast by mountains covered with eternal snow. On the Mediterranean coast the level country is of much less extent, and the interior is a region of elevated ground filled with hills and mountains. Our imperfect knowledge of this interesting region will prevent even an approximate statement of the extensive advantages afforded by the French and others who have settled in the territory of Algiers. The Arab geographers considered this tract as more European than African in its character and position, an opinion which the physical features of the opposite Spanish peninsulas, with its Sierra Nevada, its climate and productions, fully justify. We cannot yet assign satisfactorily any eastern limits to the physical region, which may be considered as belonging to the Atlas country. The gulf of Cazes, or rather the promontory of Cape Horn, may perhaps be assumed as its extreme limit along the coast, while, in the interior, a mountain range, the Ghurian, of no very great elevation, extends at least as far eastward as the western side of the coast of the gulf of Sidra. To avoid these mountains, it is sometimes necessary to take the route through Messara on the coast.

The high lands of the ancient Cyrenaica, now included within the limits of what is often incorrectly termed the desert of Barca, form a separate system, and will require a distinct consideration. It has been often remarked that Africa shows few, if any, traces of volcanic action within historical periods, and the occurrence of earthquakes is not established on record, except within the limits of Egypt. But undoubted traces of the former action of subterraneous fire are to be found; for instance, on the west coast on the banks of the Nueces, and most particularly in the Canaries, the Cape Verde archipelago, the small islands at the mouth of the Rio Grande, and towards the east, on the islands of Jutir and Tair, is an extinct volcano. The mineral treasures of this immense continent are of course very imperfectly known. Salt is perhaps one of the most universally diffused, being found from the salt lakes of the Cape colony to the norb Horn coast, and yet extensive districts, as we have already remarked, such as the Soudan, are without it. But it occurs again south of the equator, and is plentifully procured from the salt quarries of Angola; and Brown mentions it also as being found in a fossil state in the island of Madagascar. By the former, the deposits of mineral treasures of Africa are nearly as various as those of other parts of the world, though at present less imperfectly known, and in many cases only observed at spots widely removed from one another. The mineral wealth is in many cases forming a compact mass, and that of the interior west of the Mozambique coast is also abundant. Gold dust, however, is that which has the most excited the curiosity of Europeans; and this mineral is found in the sands of the upper streams of nearly all the great African rivers.

The following are the chief African minerals and earths known to commerce, or the useful arts, with some of the countries in which they are found. It should be remembered that they are found in other places than those here enumerated.

Gold.—Central Nigritia, Guinea coast, Mozambique coast, &c.

Silver.—Mines said to be at Chioova, up the Zambesi river; also at Bowditch, A. C. Account of Discoveries, &c.; Elia in S.W. part of Marocco.

Copper.—Mines of Fertit, south of Dar-Fur; Atlas mountains; Egypt; &c.; the Moulaas; Zumbo, on the Zambezi, &c.

Lead.—Egypt; Dar-Fur; on the banks of the Lucala, a branch of the Congo; in the territory of the Casembe; &c.

Tea.—Loango (Bowdich).

Salt.—Egypt, Tunis, Sahara, Angola, the Cape of Good Hope, Abyssinia, Dar-Fur. Loango, &c. (Bowdich).

Chalk.—Dar-Fur.

Sulphur.—Benguela; Cassandama? Kebrit on the Tripoli coast. (Becheey.)

Coal.—Zumbo. (Bowdich.)

The extensive continent is characterized by various climates, which it will be useful here to divide into their proper families as accurately as we can, in order to obviate that confusion which is often found in common treatises on geography. We propose merely to give such a general outline of the distribution of the human race in this continent as may show the large masses into which it divides itself; the subdivisions of nations and tribes will be found under other heads. The following sketch is founded chiefly on those physical differences, which characterize the animal man in Africa. The reader may see in Balbi's Abrégé de Geographie, the names of mountain and river recorded according to the best authorities. We will only remark, that we consider it at present impossible to make a classification of African languages without running the risk of almost endless error.

The southern regions of Africa are occupied by two nations, the Hottentots and Caffres. The Hottentots, under different names, were once spread over the territory now called Cape Colony, and at the present day may be considered as generally within its limits, though they have been driven from the southern parts by the European colonists. They occupy, also, the basin of the Orange River. The Caffres differ both from the Hottentots and those whom we call negroes. The nose approaches to an arched form; yet their hair is black, sometimes brownish, short and woolly; his profile is handsome, and remarkable for the prominence of the lips, over which the nose is flattened, a character resembling the open mouth of a gorilla. Their peculiar yellow skin is clearly visible, and by the light of the moon can be tracked by his marks. The colour of the skin is dark brownish, or yellowish, but not black. The Caffres differ both from the Hottentots and those whom we call negroes. The nose approaches to an arched form; yet their hair is black, sometimes brownish, short and woolly; his profile is handsome, and remarkable for the prominence of the lips, over which the nose is flattened, a character resembling the open mouth of a gorilla. Their peculiar yellow skin is clearly visible, and by the light of the moon can be tracked by his marks. The colour of the skin is dark brownish, or yellowish, but not black. The Caffres differ both from the Hottentots and those whom we call negroes. The nose approaches to an arched form; yet their hair is black, sometimes brownish, short and woolly; his profile is handsome, and remarkable for the prominence of the lips, over which the nose is flattened, a character resembling the open mouth of a gorilla. Their peculiar yellow skin is clearly visible, and by the light of the moon can be tracked by his marks. The colour of the skin is dark brownish, or yellowish, but not black. The Caffres differ both from the Hottentots and those whom we call negroes. The nose approaches to an arched form; yet their hair is black, sometimes brownish, short and woolly; his profile is handsome, and remarkable for the prominence of the lips, over which the nose is flattened, a character resembling the open mouth of a gorilla. Their peculiar yellow skin is clearly visible, and by the light of the moon can be tracked by his marks. The colour of the skin is dark brownish, or yellowish, but not black. The Caffres differ both from the Hottentots and those whom we call negroes. The nose approaches to an arched form; yet their hair is black, sometimes brownish, short and woolly; his profile is handsome, and remarkable for the prominence of the lips, over which the nose is flattened, a character resembling the open mouth of a gorilla. Their peculiar yellow skin is clearly visible, and by the light of the moon can be tracked by his marks. The colour of the skin is dark brownish, or yellowish, but not black. The Caffres differ both from the Hottentots and those whom we call negroes. The nose approaches to an arched form; yet their hair is black, sometimes brownish, short and woolly; his profile is handsome, and remarkable for the prominence of the lips, over which the nose is flattened, a character resembling the open mouth of a gorilla. Their peculiar yellow skin is clearly visible, and by the light of the moon can be tracked by his marks. The colour of the skin is dark brownish, or yellowish, but not black. The Caffres differ both from the Hottentots and those whom we call negroes. The nose approaches to an arched form; yet their hair is black, sometimes brownish, short and woolly; his profile is handsome, and remarkable for the prominence of the lips, over which the nose is flattened, a character resembling the open mouth of a gorilla. Their peculiar yellow skin is clearly visible, and by the light of the moon can be tracked by his marks. The colour of the skin is dark brownish, or yellowish, but not black. The Caffres differ both from the Hottentots and those whom we call negroes.
latter may, perhaps, be considered the aboriginal inhabitants of the Mozambique coast, from that coast westwards into the interior; the Makota, whom Salt saw at Mozambigues, are described by him as the most genuine thick-lobed negroes that he had ever seen; and the expeditions into the interior inform us that the people are negroes, though some of them are described as of a superior appearance and character to those on the coast. This may be attributed to the want of communication with the white man of Europe, who, wherever he has been allowed freely to settle himself, has, for the most part, destroyed or demoralized the people among whom he has come. We cannot at present state how far eastward the coast negro tribes extend, but certainly not beyond Cape Guardafui. The Somalians of Aden are not negroes.

We know very little of the interior of Africa, south of the point of Good Hope, and Denham, and Clapperton advanced; but we may reasonably conjecture three unknown regions to be occupied by black tribes, which indeed is proved to be true, for a considerable distance at least, by the negro slaves whom the traders bring to Dar-Fur. The cultivable order on Sudan, the south-western coast of the Sahara, and the watered by the Joliba and the various tributaries of Lake Tchad, are the region of the negroes, and known among the Arabs by the general name of Sudan or the country of the blacks. But we cannot say how far eastward the proper negro tribes extend, the natives of Bar-Kofo (whose name in 14° 11' N. lat., 26° 38' E. lon.) are described by Brown as having hair generally short and woolly, and a complexion for the most part perfectly black; yet he says they differ in their persons from the negroes of Guinea, and from their present inhabitants. The negroes were introduced among them by traders from the south and west. The negro races of the Nuba have, however, spread as far north and east as Semnara, where a negro dynasty of the Fungi (conquerors) established itself in 1504, and has mingled itself with Arab blood, and adopted a Moslem creed, and Shangulla, who also belong to the Nuba, have spread eastward as far as the Tassaa and Mareb, and to the coast of the Red Sea. It is, however, not improbable that there were negro tribes in the upper waters of the Nile during the period of the Pharaohs. The negroes have been mentioned in the processions of the kings of Thebes. (See Belzoni's plates, and Burton's Excerpts.)

The desert of the Sahara, and the southern limits that border it to the west, are the present and past home of the negro, but they are the greatest number are included under the general name of Moors. They are a mixed race, and live a wandering life; they are not Arabs, but they have adopted the religion of Mohammed. They are found spread toward the regions of the Nile and Tropic to the Sahara; they are driven westward, through Fezzan, Augia, and Siwah. They are said to speak a Berber language, and to be mixed on the north with Arabs, on the east with Tibboes, and on the west with Berbers.

The mountain regions of the Atlas, which by their position and character belong by belonging to the extremity of Africa, as well as the whole shores of the Mediterranean from the straits of Gibraltar to the Cyreniac regions, have been subject to the invasion of conquerors ever since the earliest periods of history. The Phoenicians, Greeks, Romans, Vandals, and Goths, and Arabs from Asia, have at different periods possessed portions of these regions, and mixed their blood with that of previous races. The Arab invasion has produced the most permanent effects, and that nation now occupies the most cultivated parts of the Atlas region and the towns on the coast, and are generally known to us by the incorrect appellation of Moors; the subsequent conquests of the Turks (also an Asiatic race) have done little more than establish a despotic power on a few isolated spots, under a millet culture; and the same thing seems not to have been the case with those violent revolutions, the Bersers and Shelluhus of the Atlas mountains are the descendants of the primitive inhabitants, and that they retain their original language in all its substantial parts. It has been well remarked by Ritter, that as the Atlas regions differ in character from the rest of Africa, so its primitive inhabitants have a different character also; and, however, their language or usages may have changed during the lapse of many centuries, we can hardly doubt about assigning them to the wide spread Arabic family, which there is good reason for considering indigenous in northern and north-eastern Africa as well as in the great Arabian Peninsula. The wide diffusion of this race, across the continent as far as the waters of the Nile and the Gulf of Aden, according to some opinions, will be examined more particularly under the head of Berbers, a term applied to a great extent to the negro tribes westward. Certain writers on African ethnography. We reserve to the particular descriptions of each subdivision of Africa, a short notice of the political revolutions that have affected the physical and moral character of its present inhabitants, or we shall refer for such information to the later chapters.

We need only remark, in order to complete this general sketch of man in Africa, that the ruling race of Amhara, and Tigre, who are included under the name of Abyssinians, and some of its present divisions, as they are considered as a separate, they are still a nearly related family. But at present we cannot attempt to classify the various peoples who occupy the widely spread Abyssinian provinces; it is probable that they contain many varieties of the human race, and are formed from the results of the intermixture of different races. The Gallas, whose invasions of Abyssinia from the south may be compared with the movements of the Nomadic tribes of Asia, have not yet been identified with any other nation, and must for the present be considered as a genuine race, which sometimes has mingled with negro and other races, now occupies a large part of the countries north of Abyssinia as far as the Mediterranean; but the population of the Nile basin is of a very motley character. The Copts, or descendents of the negroes of the Egyptian creed (who may, possibly, be adapted to win the favour of the indolent and pleasure-loving negro. When the Portuguese commenced their settlements at Mozambique, they found the Arabs in quiet possession of the coast, and though they succeeded in killing them all, they have not yet been able to get possession of the river, yet as some of the sovereigns of the interior had at that time adopted Mohammedanism, it is not unlikely that this form of religion exists in these parts of Africa still unknown to us.

The only African countries where Christianity is now established, excepting the few European settlements, are Egypt and Abyssinia. In Egypt it is confined to the Copts, and in Abyssinia both its doctrines and precepts are as ill understood as they are obeyed.

The Arabic is the only characteristic that is now used in Africa by those who wish to read and write, except those employed by the people of Tigre and Amhara. Its use is, however, limited to very few in Sudan, where it is only known to that class who can read and write.

The Jews, a nation now dispersed over almost every part of the world, are found also in the Samben of Abyssinia, in Egypt, and indeed scattered as far west as the kingdom of Morocco. They do not seem to have established themselves among the negroes who can read.

The great island of Madagascar, yet so little known, is occupied on the west side by negroes, who have at various times furnished large supplies of slaves to the Cape of Good Hope and the Mauritius. Whether the negroes are original in this island, or have been introduced by other races, it is uncertain, and the present is to a great extent occupied by a race of Malay stock, whose arrival in the island is not recorded by any historical document. Some Cafrres are found on the south coast. Many Arabs also are found in Madagascar, similar to those that, after not having the period of whose arrival there we are entirely ignorant.

VI. ANIMALS OF AFRICA.

In the animal kingdom, at least, Africa is rich in the number of its peculiar...
species, (if they are not so remarkable for the singularity and anomalous forms which they exhibit,) as any other quarter of the globe. The peculiar difficulties which have at all times opposed the progress of European discovery in this part of the world, have hitherto prevented us from ascertaining so satisfactorily a knowledge of its zoology as could be wished; but enough is already known to enable us to form a general idea of its productions, and to infer, with a tolerable degree of accuracy, their most prominent features and characters.

Of these hundred different species of mammals which are known to be inhabitants of Africa, upwards of two hundred and fifty are peculiar to that continent and the neighbouring island of Madagascar; and of these a vast majority are to be found only in a small area upwards of the floor of the continent. This, however, exhibits the relative numbers of the species of African mammals belonging to each of the orders of the Cuvierian system, compared with the whole number of species belonging to the particular order, and it distinguishes those which are peculiar to Africa from those which are common to it and other continents.

<table>
<thead>
<tr>
<th>Orders</th>
<th>Whole No. of known species</th>
<th>Whole No. of African species</th>
<th>% of species peculiar to Africa and other Continents</th>
</tr>
</thead>
</table>
| 1. Quadrupeds (Apex. Monkeys and Lemurs) | 196 | 55 | 28
| 2. Elephants (Elephantidae) | 390 | 66 | 17
| 3. Rodents (Gnawing Mammals) | 955 | 48 | 30
| 4. Edentates (Rats, Anteaters, etc) | 83 | 3 | 3
| 5. Pachydermata (Hog, Elephant, etc) | 25 | 15 | 60
| 6. Carnivora (Ruminant Mammals) | 197 | 73 | 37
| 7. Cetacea (Whales) | 76 | 10 | 13

An inspection of this table will at once show the relative number of species in each order, as well those which are proper to Africa alone, as those which are common to that and the adjoining continents of Europe and Asia. It will be remarked among other things, that Africa is richest in the number of its pachydermous and ruminating animals, and most deficient in the number of its rodents and edentata, compared with the whole number of known species belonging to each of these several orders; though it must be observed in regard to the rodents in particular, that we have at present a very imperfect knowledge of the African species, as well as from their diminutive size and timid character which cause them to be less frequently met with than larger and bolder animals, as from the danger and difficulty which have nearly always attended scientific researches of the desert. This has been so much the case in the southern parts of Africa, that in those of its deserts, mountains and desolate plains which are not traversed by the camel, and in the regions to which we are now about to proceed on the banks of the Nile. The head of the camel is found on obelisks and other ancient Egyptian monuments from the city of Alexandria as far south as 18° 25' of N. latitude. Camels' heads are cut on the pith of one of the two great pillars which Lord Byron brought from Abyssinia in Dongola, in 1832. As to the horse, it is spoken of in the Bible, and is represented on some of the oldest specimens of Egyptian sculpture; but we cannot assert that it is indigenous in Africa, nor on the other hand can we mention any period at which it was introduced. Leo Africanus relates that there are wild horses to be met with in Africa, but this report has not been confirmed by any modern traveller, and there is strong reason to doubt its truth. However this may be, it is certain that the soil and climate of Africa are peculiarly adapted to develop the physical and mental qualities of these quadrupeds. The country which has been hitherto more frequented by the Pharaohs of Egypt, yield in no respect to the finest Arabs either in the art of form or spirit. The first of these races was introduced into Spain during the ascendency of the Moorish power in that country, and from it the noble Spanish breed of modern times is descended.

Of horned cattle there are a great many different varieties in Africa. The most remarkable are the Sahag or Gallia oxen of Abyssinia, with immense horns nearly four feet in length, and a kindred race in Bornou, the horns of which are much more elevated in circumference, and yet scarcely weigh two pounds a-piece. Of sheep, the most remarkable varieties are the broad-tailed kind, whose tails grow so fat and heavy that, according to Shaw's report, they are frequently obliged to be supported on little wheel-carriages, as Herodotus says of the Arabian sheep. This variety is common in Barbary, at the Cape of Good Hope, and in other parts of Africa. The edimain, a very tall variety, with long legs, small tails, and drooping horns, is common in Egypt. These breeds are covered with short coarse hair instead of wool, and their flesh is very inferior in quality to our European mutton. Goats are in many parts of Africa more common than sheep, as they subsist better on the dry aromatic herbs of the desert, and are more adapted to the fine sand, on which they are frequently found, and are generally preferred for the table. Of these also there are many different varieties; among others, a dwarf species, with short smooth hair and very small horns, which has been introduced into South America, where it has multiplied prodigiously.

The domestic cat is very rare in Africa, but dogs are numerous, and of many different varieties. Among the Mohammedans, it is well known that these animals are considered unclean; but though they refrain from them in their houses, all the large towns of Egypt and Barbary maintain public troops of dogs, which perform the offices of common scavengers, establish themselves in particular quarters of the city, maintain a kind of government over themselves, and are extremely watchful to prevent strangers from intruding into their particular districts. It is no uncommon thing for the wealthy Mussulmans to leave considerable legacies for the support of these animals; and it is very remarkable, that notwithstanding the great heat of the desert, and the many other difficulties in the way, the instance of canine madness is never known to occur in Africa.

Domestic poultry are common enough in every part of Africa, though they also are of foreign introduction. Every one has heard of the artificial mode of hatching chickens and ducks, practised by the Arabs and Negro people, which which an exhibition on an extensive scale was some years since afforded to the inhabitants and visitors of this metropolis. Turkeys have, of late years, been introduced about the neighbourhood of Sierra Leone, but they have not yet become numerous, and, perhaps, the country is not well adapted to their habits. It does not appear that the Guinea hen, though indigenous to Africa, is at present domesticated among the inhabitants: in Dar-Fur, the Guinea fowl is indigenous. Geese and ducks are not extensively distributed, and even where they are found, are reared in small numbers, and held in very slight estimation. Probably, the extreme dryness of the climate may have a considerable influence in depreciating the utility of these birds. Of quadrupeds the first and most remarkable is the chimpanzee or pongo, the simia troglodytes of naturalists. This extraordinary animal, of which there is good reason to believe that more than one variety exists in Africa, approaches much nearer to the human form than the other large tribes of quadrumanous animals, the greater number of the cyno-
cephali, or baboons, are found only among the rocks and mountains of Africa. Many of these, such as the mandril (Cynopithecus mona) and the tarza (Cynopithecus badius), attain a very considerable stature, and, from their strength and malicious disposition, are much dreaded by the negroes. The monkeys, properly so called, (Cercopithecus) are likewise an African genus. These playful and harmless animals, of which there are a great many different varieties, many of which are so abundant in all the natural productions of Madagascar and the Isle of France, grows to the size of a small fowl, feeds on fruits, and is eaten by the inhabitants, who compare its flesh to that of the pheasant and partridge.

Many nervous and ferocious animals are extremely numerous in all parts of Africa. The lion, the panther, and the leopard, lurk in the vicinity of the rivers and fountains to surprise the different species of gazelles and antelopes, but, unless they are ravaged by the ravages of the cats, which inhabit Madagascar and the Isle of France, grows to the size of a small fowl, feeds on fruits, and is eaten by the inhabitants, who compare its flesh to that of the pheasant and partridge.

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The elephant of the present day is the same as that of the ancient monarchs, and has been so changed by the hands of man as to be nearly unrecognizable. It is not so large as the present day, nor so powerful in its movements, nor so well adapted to its various employments. However, it may be said to be the same animal that was described by the classical authors, and that was so much admired by the ancient philosophers.

The elephant is a extraordinary animal, but it is not so well known as the other species of the tribe, though it is probable, from the physical nature of the country and climate, that they are quite as various and abundant here as in Asia and America. Of which we do know, the most remarkable are the gigantic ruminants which inhabit Madagascar and the Isle of France, grows to the size of a small fowl, feeds on fruits, and is eaten by the inhabitants, who compare its flesh to that of the pheasant and partridge.

The elephant necessarily occupies the first rank among the wild hoofed quadrupeds of Africa. The African elephant, though long considered a dangerous animal, is now known to be a subject of particular care, and is so treated by the inhabitants as to be almost domesticated. The elephant is a remarkable animal, and is distinguished by its great and powerful limbs, its immense size, and its docility, but it does not yield to its Asiatic congeners; and if we were to credit the exaggerated statements of travellers, it would even appear that the African elephant occasionally attains the height of seventeen or eighteen feet. However, this may be, it is at least certain that the tusks of ivory imported from the coast of Guinea are considerably larger than those which are obtained from India—often weighing from one hundred and fifty to one hundred and eighty pounds, while the latter rarely exceed one hundred and twenty to one hundred and twenty pounds. These animals are found in the woods, being either broken by the animals in their combats with one another, or in their attempts to uproot different kinds of trees for the purpose of feeding upon their roots and branches; but much the greater part of it is found in the woods and swamps of the interior, where it is in a state of nature, and where it is found in its natural state, in the woods, being either broken by the animals in their combats with one another, or in their attempts to uproot different kinds of trees for the purpose of feeding upon their roots and branches; but much the greater part of it is found in the woods and swamps of the interior, where it is in a state of nature, and where it is found in its natural state.
stroke of a sharp double-edged sabre, he severs the tendon of Achilles immediately above the heel; and by this means so completely disable him, that the hunters can afterwards despatch him at their leisure. During these hunting expeditions, which have been made to determine that during the four months, the hunters live entirely upon the flesh of the slain elephants, and frequently collect as much ivory as enables them to live in what they consider affluent circumstances for two or three years. The African elephant is not move as far as we know, employed in the service of man; though the Pedi tribes undoubtedly obtained elephants of war from Ethiopia. In the sixth century, Cosmas says that the Ethiopians could no longer train them for war [see ADULE].

The Zebra, in which has been sometimes seen the elephant inhabits the middle and southern parts of Africa, frequenting the same localities as the elephant, and hunted as ardently by the people, though his hide and horns are the only part of him that can be turned to account. Of these shields are made in some parts, and in others traces and harness; for all of which purposes its great thickness and durability render it extremely appropriate. The African rhinoceros, like that of Sumatra, has two horns, but it is distinguished from the latter species by having no front or inner teeth. The horns, as in the East, are highly esteemed for their supposed medicinal virtues.

The hippopotamus is found in the large rivers and lakes of Africa south of the Great Desert; and from being less numerous than in the Nile to the Cape of Good Hope, the elephant or rhinoceros, is in many parts extremely common. This animal appears to have kept possession of the fresh-water rivers and lakes of Africa, and to have inhabited the very same localities which the hippopotamus inhabited in the earliest ages. The Greek and Roman writers frequently mention him as an inhabitant of the Nile; and Hannu, the Carthaginian Admiral, in his voyage along the western coast of Africa, informs us that he came to a large river—where it is stated that there have been either the Senegal or the Gambia, or the Rio Grande—in which the hippopotami were very numerous. At the present day the hippopotamus is never seen below the second, and perhaps not below the third cataract of the Nile; but on the opposite coast of the continent, the Senegal, the Gambia, and the Niger, they are numerous, and extend southward as far as the Cape. Within the boundaries of the latter colony, indeed, this animal is at the present day rare; but it was formerly as abundant in parts of Africa, and still exists on the northern and eastern frontiers. The elangro or wild boar of Africa (Phacochoeres) is a very different species from that of Europe, though the latter is an European species, found in certain parts of the continent, as certainly it is in India and other parts of the East. The elangro is, perhaps, the most hideous of all mammals in appearance. It resembles the elephant in the form and structure of its molar teeth. Of these there are never more than four or five, and one species without them; but many quadrupeds by the new one growing under the old, and gradually pushing it out of the socket; but the young tooth is formed in this case behind the old one, and gradually advances forward and assumes its situation, as the latter is worn down by constant use.

The zebra, the cow, and the quagga (Equus Zebra, du- plicirugus, and quacca) are found in most parts of southern and central Africa which are known. These beautiful animals, equal inquantity for the formation of their forms, the rapidity of their course, and the brilliancy and wonderful regularity of their colours and markings, associate in large herds upon the open plains and gentle declivities, and are the frequent prey of the lion, which in preference to flesh they do not and tough venison of the various species of gazelles and antelopes that inhabit the same localities. It has been repeatedly remarked by African travellers, that these animals and the ostrich, are the most beautiful animals equally remarkable for the formation of their habits, and the flocks and herds of these very different species are constantly found intermixed, though they refuse to associate with other animals. It is not a little remarkable, that the same was observed by Xenophon and other Greek travelers who visited them in the eleventh century, with the ostrich and quagga or wild ass, on the plains of Syria and Mesopotamia. The facts may probably be accounted for by the mutual security which each feels in the other's company, the long and flexible neck of the ostrich enabling it to take notice of the most distant appearance of danger, and the well-known courage of the wild ass compelling beasts of prey to respect their quarters. It is to be lamented that no judicious attempts have ever been made to domesticate this animal in Africa.

Among ruminating animals, Africa is chiefly remarkable for the immense numbers of different species of antelopes which it contains; no fewer than sixty species, and a hundred and fifty varieties, are reckoned in this extensive genus, being proper to that continent. This is a very peculiar feature in the zoological character of Africa, especially when we consider that there have been only two species of deer (one of which is our common fallow deer), hitherto discovered throughout the whole extent of the continent. Asia, on the contrary, while it abounds in many different species of deer, contains, comparatively, very few antelopes, being thus completely opposed, in an important zoological feature, to the neighbouring continent. For a more detailed account of the habits and external characters of these animals, see Antelope. Of other wild ruminating animals indigenous to Africa, the most remarkable is the giraffe or camelopard, which is found from the banks of the Gariep to the southern borders of the Great Desert. Two or three wild species of buffalo also inhabit the woods and marshy grounds of the interior, but we know little of their forms or habits. The bo caffer, or wild ox of the Cape of Good Hope, has horns which, over the top of the head and forehead, in the manner of a helmet; he is a savage, dangerous animal, and much dreaded by travellers.

Among the ruminating mammals which inhabit the seas and coasts of Africa, we need only mention the lamantin, (manatus, Senegalenis,) which frequents the mouths of the great rivers on the Atlantic and Indian Ocean, and feeds upon the aquatic plants that it can reach along the shores. It was this animal which, from the pectoral situation of its mammas, and from the habit of raising itself half out of the water, especially when in the act of suckling its young, gave origin to the fable of the mermaid, by which name it is often mentioned by ancient African voyagers and travellers in the Senegal.

Of the ornithology of Africa, we cannot undertake to give more than a very general account. Indeed, from the physical conformation of birds, they are not so confined and limited in their geographical distribution as quadrupeds; and, consequently, the ornithology of particular parts of Africa is never so peculiar nor exclusive as its mammalogy. Birds, possessing powers of locomotion which quadrupeds want, often migrate to the most distant climates. Thus many of our birds from the countries of the Cape of Good Hope, the rail, the cuckoo, and the different varieties of swallows which spend the summer and autumn in northern climates, migrate for the winter season to Africa; and others of our common species are found distributed over the whole eastern part of the continent. They are the same in many cases, even in the colour of a feather, in the most remote localities.

The ostrich has already been incidentally mentioned as an inhabitant of Africa. At the present day, indeed, it would appear to be exclusively confined to that continent, though in the age of Aristotle and Xenophon it was found in the deserts of Syria and Mesopotamia. Captain Lyon informed us that the best ostrich feathers imported from Barbary are not procured from the wild birds of the desert, but from the young and bred in stables, where they are well supplied with soft bedding to prevent them from wearing or injuring the feathers. Similar to the ostrich in many of their habits, and even somewhat in appearance, are the bustards, many different species of which inhabit the Karroo and arid plains of Africa. Of gallinaceous fowls, adapted to the poultry-yard, Africa possesses but a single genus, the Guinean hens, (numida,) which, however, are found in no other part of the world. For the sake of oil, there are three or four distinct species, go in large flocks of 400 or 500, and are most frequently found along underwood in the vicinity of ponds and rivers. There are, besides, many species of partridges and grouse in different parts of Africa; but as they are not particularly faulted on account of their flesh, and have otherwise nothing remarkable in their habits or economy, it will be sufficient at present to indicate them thus generally. Wild fowl of various species are also abundant on the lakes and rivers, as are likewise various species of the
of owls, falcons, and vultures, the latter of which, like the hyenas among the quadrupeds, are highly useful in consuming the offal and carrion which might otherwise taint the air and produce disease. The exquisite sense of smell possessed by these birds is truly marvellous. One of the most remarkable and useful birds of prey peculiar to Africa is the secretary (serpentarius), which may be noted improperly described as an eagle mounted on the long naked legs of a crane. This bird preys exclusively upon serpents, which it pursues on foot, and destroys in amazing numbers.

Among the smaller birds of Africa are many species remarkable for the godliness and brilliancy of their plumage, or the singularity of their manners and economy. Of the fantastic nature of these it is impossible to speak in Enumeration with of parrots and parakeets, which, from the size of a sparrow upwards to that of a raven, swarm in all the forests, and make the woods resound with their hoarse unmusical screams. Of the latter kind, it will be sufficient to mention the hony cuckoo (caculus indicator, Linn.) and the little bird called the robin (loxia socia, Lath.).

Lizards, serpents, and other reptiles abound in every part of Africa. The crocodile inhabits all the large rivers of the tropical part, and is still abundant in the Nile below the first cataract. Different species of chameleons may be seen on every hedge or shrub; and the enormous python, a serpent of thirty feet long, lurks in the fens and morasses. Among the venomous species, the dippas, the asp, and the centipede, the latter being frequent in the ancient classical writers; whilst the garter snake, the puff adder, and other species, are at present employed to poison their arrows by the Bojsemans, the only African tribe who use this deadly and cowardly weapon.

Of the fish, Africa also contains many thousand different kinds. The locust has been from time immemorial the proverbial scourge of the whole continent; scorpions, scarcely less to be dreaded than the noxious serpents, are everywhere abundant; and the zebub or fly, one of the insects employed by the Almaghym to afford the Egyptians of old, is still the plague of the low and cultivated districts. For a particular account of the ravages of this dreadful insect, the reader is referred to Bruce's Travels, (4to. edit.) vol. i. p. 388, and Appendix, p. 188, where there is also a good collection of other insects.

VII. PLANTS OF AFRICA.

The nature of African vegetation will best understood by tracing geographically the changes it undergoes between a state but little different from that of the south of Europe, and the site behove the Flora of the Country of Good Hope. To the traveller who passeth from the south of Europe to Tangier, the appearance of the African coast presents nothing remarkably different from what he has left in Europe; and along the whole of the most southern coast the verdure continues a subject which is preserved, that if it were not for a few striking objects, he might fancy himself still in Spain or in France. Groves of oranges and of olives; wide plains covered with wheat and barley; thick woods of evergreen oaks, cork trees, and sea pines, (Pinus maritima) rice, tobacco, olives, arbutus, and fragrant tree heaths (Erica arborea), form the principal features of the landscape; while the plains are covered with the gum cistus, and the hills and rocks with odoriferous rock-rosettes, palmetto trees, and the wild caper. In January and the early months of the year, when the climate is like that of the warm days of our spring, the plains are green with grass, and embellished with innumerable little flowers of the monocotyledonous class, and the gardens are gay with the blossoms of the almond, the apricot, and the myrtle. Amongst the species of roses all the more delicate plants have been dried up beneath a scorching sun, there is still the oleander, with its brilliant bunches of rosy flowers, by which are traced afar the courses of the rivers and the banks of which the waves to dwell, and the hyssop and smilax which, from accidental circumstances, being never dried up, are then a kind of vegetable oases.

On this northern coast the date palm is first found; but its fruit does not arrive at perfection, and it is chiefly valued as an object of ornament to gardens and houses.

The principal objects of cultivation in the Barbary States are a kind of wheat, (Triticum durum,) the stems of which are solid, and the grain horny rather than farinaceous; barley which the Moors give their horses instead of oats, maize, coffee corn, (Zea mays,) rice, tobacco, olives, oranges, and figs of the most delicious quality; pomegra-

nates, grapes, and jujubes, together with sweet melons and water melons. They also grow the white mulberry for silkworms, a kind of indigo, (Indigofera glaucus,) cotton, sugarcane, and most European esculent vegetables. It is in the northern countries, however, that the grain is most cultivated, in the chain of Atlas, that grows famous timber (Taxus baccata) called, from the substance it produces, the sand-rach tree, which is almost imperishable, from which the ceilings of the mosques are exclusively constructed, and which is supposed to have been the timber used in the building of the pyramids.

As soon as the chain of Atlas is passed, the scene begins to change; the excessive dryness of the climate on the northern borders of the Great Desert is such, that few trees, except the date, can maintain an existence. It is, however, in the uncultivated parts of the south of Africa, where the soil refuses to grow, and even maize, barley, and coffee corn, afford the husbandman a miserable and uncertain crop—where the blasts from the south are scarcely supportable by the native himself, that this invaluable gift of Providence of which its sitting statute. It is here that the leaves of date palms form a screen impervious to the rays of the sun, and cherish beneath their shade, the orange, the lemon, the pomegranate, and the vine, the latter of which climbs to the summit of their trunks by means of its twisted tendrils. Although in the more constant climate, all these fruits acquire a more delicious flavour than in what would seem a more favourable climate.

Egypt exhibits a scene intermediate, as it were, between the northern shore, and the south of Africa, a mixed scene, containing more the appearance of a tropical country. European plants begin to disappear; in the districts still watered by the Nile, we find all the richness of vegetation of the spring months of Barbary; abundance of rice, barley, and wheat; Dolichos, red and white; and sugarcanes; the beans and plums that have been introduced; while in the hotter or drier, or more southern, the date is the chief object of the scenery. Nothing but stunted and misshapen looking bushes are able in the open plains to contend with the succulent plants. In the mountains and the hills, in the rich parts of the country we find the acacias which produce gum arabic, large tamarisk trees, called atlé, great quantities of the senna plant (Cassia obtusifolia and other species), intermixed with various herbs belonging to tropical genera, all of which are either unknown or rare in the eastern parts of Africa. Cotton, coffee, indigo, and tobacco are cultivated with the greatest success. At Thebes first begins to appear a third race of palms different from the date and the sisal, viz, the forked branched doorn palm (Caryota Theobearis) of Upper Egypt, which is of the same class as being almost the only species in the white palm tribe in which the stem is not perfectly simple and unbranched; and in Abyssinia are first found species of the ginger tribe (Scitron, and other genera) which, under the milder climate and richer lands, become a feature of African vegetation within the tropics.

The deserts that occupy the interior of this continent, like inland oceans of sand, are scarcely inhabited by any plants except of the most stunted character; one of the most remarkable is the saltwort (Salsola, or Salsola), which replaces the senna of Alexandria; in some
places the woods abound in pine-apples, which, although not natives of the continent, have established themselves as completely as in their native stations in tropical America; the plains are often covered with immense quantities of the Indian corn, or maize; the tobacco and the various kinds of vines which grow on the regions near the line a new feature is introduced by the chandelier tree (Pandanus candlabrum), which rises singly in the plains, and divides its grotesque branches into repeated forks, the extremities of which are crowned with long green spines; the clusters of the fruits the orange and the lime alone remain. In their stead the cassava (Iatropha manihot), the yam (Discoecora), the pigeon pea (Cajula Cajan), and the ground-nut (Arachis hypogaea) are the commonest plants; the papaw (Caricus papaw), the tamarind, and the mitta or dours tree (Pariba Africana), are the fruits in some places; the Senegal custard apple (Anona Senegalensis), the grey plum (Parimarium), and the Safu, in others; and the bread fruit of the West Indies is here also. They are accompanied by a variety of other stunted bushes, the leaves of which consist of a few small leaves and silky nerves, the seeds of which are as agreeable as hazelnuts. Besides these we have in Sierra Leone and along the same coast, the remarkable cream fruit, which, although of a most poisonous family, yields a wholesome and pleasant drink; the bitter-water-plant (Tetraporium potatorum), the stems of which are a sort of vegetable fountain, discharging, when cut across, a cool, limpid, and refreshing fluid; the negro peach (Sarcocephalus africanus), a brown succulent fruit, said to taste like a strawberry; the mango, of small size; and the Manyan tree (Punica granatum), which is, in flavour and size, between a nectarine and a plum; and various species of pigeon plums (Chrysobalanus), together with the mamoncillo (Mammea africana), pêssego (Carpodoxus), and star-apples (ChrysophyUum obtusifolium).

As we approach the southern point of this continent, a new change passes over the face of nature; tropical forms disappear as they have formerly appeared, and we less the scenery of the cotton tree, the baobab, the palm, and the chandelier tree; not however to find their places occupied by the plants of Barbary and the north, but to contemplate an order of vegetable beings so different, that their very genera had been previously unseen; still the same wilderness of sand and bush extend over the centre of the country, but it is now longer covered by prickly grasses or waving thickets of papayrus. The karroo of the Cape Colony are the residence of fleshly, leafless, distorted, shapeless tribes of Stellalia, of Mesembryanthemums, Euphorbias, Crassulas, Aloes, and other prevalent plants; the juice that flows from the head of the soil by the weak support of a single, wiry root, and feeding rather upon the dew of heaven than the moisture of the soil,—a situation to which they are admirably adapted by the want or imperfect state of their evaporating pores, so that whatever humidity they are able to collect is parted with so slowly as the limited supply is furnished to them. Among these grow stunted bushes of endless species of heath (Erica), and succulent geraniums (Pelargonium), strong-scented Bucka plants (Doroan), and a great variety of shrubby Compositae. The hills and rocks are scattered over with a remarkable tribe of plants called Cycaedes, intermediate, as it were, between ferns and palms; the plants are permanently clothed with patches of a rushy-looking leaf stalk, white or yellowish in colour, after the rains, touched with the fugitive but lovely blossoms of the Ixia, the Gladiolus, the Disa, the Satyrium, and the Oxalid. Plants of the Protea tribe also, of which there are very many species, for the first time appear since the country of Abyssinia, and under the name of Witteboom (Protea argentea) supply the inhabitants of Cape Town with fuel.

At Cape Town itself has been introduced the American sassafras, which, with its spiny rigid leaves of six feet in length, forms an isolated growth, the juice that flows from the leaf more bitter than any living baring; and the oaks and stone-pines of Europe have found a congenial climate. Such are the more prominent features of the vegetation of this coast; and the fact of the adjacent continent, modified chiefly on the west side by the cooling breezes of the Atlantic, and on the east by the wide expanse of the Indian and southern oceans.

In these spots we have usually a total absence of African sterility, in consequence of their insular position; and from their luxuriant vegetation we may judge what that of Africa would be if either nature or the skill of man could succeed in conducting rivers and streams where there are already barrenness and dryness.

VIII. The following view of the great divisions of Africa, according to our present incomplete knowledge, will show under what particular heads further information will be distributed. This division of the continent may be objectionable, but it is impossible to attempt, in a limited space, any complete division of it.

1. The region from the Orange river southward, comprehending the Cape colony, its mountains, elevated plains, European districts and native villages and their population; and extending eastward to the Great Fish river.

2. The eastern coast of Africa, from the Great Fish river to the neighbourhood of the Portuguese settlements, near Da Lagos bay; comprehending the sea-coast occupied by the Capper races, of Natal. In the interior the Caffra race is widely diffused in the high table-land, and has been found also, occasionally, on the coast as far as Zulius.

3. From Da Lagos bay to Cape Guardafu, the northern part of some little known island of the coast between Zanzibar and Ajan, the last-named coast terminating at the great eastern cape.

4. The Abysinian countries, with which may be grouped the almost unknown regions that border on them to the south; with the Galla, the Somali, Danakil, and other tribes, as far north as Massau on the Red Sea [see Adel].

5. The country of the Bahr-el-Abiad, of great western branch of the Nile, and the countries north of Abyssinia, comprehending the Nile Valley as the eastern desert, and the Nile and the Red Sea. Darfur and Korofan may be most conveniently arranged in this division. Darfur is connected by some geographers with eastern Soudan. Senaar, Dongola, Nubia, and Egypt, belong to this division. The term Nubia, since the conquests of Mohammed Ali, is sometimes used as a general name to comprehend all the countries south of the first Nile cataracts, which are subject to the Pacha. The Bejas, Bishareen, Abadzis, and other tribes belong to this division.

6. The region west of Egypt, known to the Arabs by the general name of Maghreb, or the West, and extending to the extremity of the Atlas chain, comprehends the great political divisions of Tripoli, including Barca, Tunis, Fez, and Morocco, and the hot desert country which is often included by Europeans in the general term of Barberry. The chief oasis westward from Fezcan may be classed under this head, and placed in the division of Belad-el- Jerid, or Land of Dates, according to some interpretations.

7. The Sahara, or the great desert; with some of the oases.

8. Soudan or Central Nigritia, comprehending the countries watered by the Quorra and its tributaries, and by the tributaries to the Lake Tchad.

9. A subdivision of No. 8, we may reckon the coast from the Senegal to the delta of the Quorra, including the countries bounded by the Senegal, Gambia, Rio Grande, etc., and the coast of Guinea, between the latter states in the interior. A name is wanting for this division; we shall use that of Western Nigritia, under which we comprehend the division of this region, as far as they are known, will be given. The term of Senegalma was once in use to signify the country from the Senegal to the neighbourhood of Sierra Leone.

10. The region from the Bight of Biafra to Cape Negro, which may be named Southern Nigritia, comprehending the long line of coast between the two, and the whole extensive region is often explored. The names of Loango, Congo, Angola, and Benguela, are the chief great divisions hitherto adapted by those who have described this region.

These divisions of Nigritia, which are here adopted for the sake of convenience, are those of Balbi in his Abrégé de Géographie, except that he makes a fresh division of the Guinea coast, which comprehends the two great states of
Ashtanee, Dahomey, &c., and calls it by the name of Maritime-Nigritia.

The African islands, not immediately bordering on the coast, consist of the following chief groups, or single islands:

**NORTH ATLANTIC OCEAN.**

The Madeiras—Archipelago of the Canaries—the ten Cape Verde Islands—Islands in the Bight of Biafra; Fernando Po, and Socias, Anna Boma, &c. The nine Azores, or Western Islands, are considered by some geographers as belonging to Africa.

**SOUTH ATLANTIC OCEAN.**

St. Matthew—Ascension—St. Helena. The three small islands of Tristan da Cunha.

**THE SOUTH INDIAN OCEAN.**

Madagascar, which may be considered as the centre of an Archipelago of small islands, to which belong the Mauritius and Bourbon, and the Comoro Islands of the Mozambique channel, the Seychelles, with the Amirantes; and the islands on the coast of Zanzibar.

**The NORTH INDIAN OCEAN.**

The islands of Socotra, off Cape Guardafui. The islands of the Red Sea are generally considered, and partake of the character of the Arabian and African coasts, to which they may be respectively assigned according to their degree of proximity.

**EUROPEAN POSSESSIONS IN AFRICA.**

**PORTUGAL.**

The government of the Madeiras—of the Cape Verde Islands; and the small posts of Cacheu on the San Domingo; Bissau, Zinghirou, Farim and Géba of St. Thomas, and Prince's Island—the post of W. Way, in Dahomey—the captnacy or government of Congo and Angola, consisting mainly of posts—the Mozambique government, on the coasts of Sofala and Mozambique, extending from the bay of Ilha Lagoa to Cape Delgado: it is divided into seven captnacies, but the real possessions of the Portuguese are now few and insecure; the chief are, the little island of Mozambique, and the settlements of Quelimané, Senna, Tette, Manica, on the Zambezi river. Melinda, once a flourishing Portuguese settlement on the Zanguebar coast, is now desert and uninhabited.

**ENGLAND.**

Bathurst, on a small isle at the outlet of the Gambia, and a few posts dependent upon it—the establishment of Sierra Leone—the establishments on the Gold and Slave Coast, all, except one, within the Ashantee territory. Cape-Coast is the chief post; the rest are of little importance—the islands of Fernando Po, occupied in 1828, Ascension, St. Helena, and the islands of Tristan da Cunha—the colony of the Cape of Good Hope—the Mauritius, and a number of small islands belonging to the Moluccas—Anse Asieh.

**FRENCH.**

The state of Algiers on the northern coast of Africa, conquered by the French in 1830—on the Senegal and Gambia coast, the district of St. Louis, and that of Goree, St. M. Bass, and Sall, near Mada-
gascar, with a few posts on the latter island.

**SPANISH.**

The Presidios, near the straits of Gibraltar in the empire of Marocoo, which contain the towns of Ceuta, Melilla, &c.—the Archipelago of the Canaries, consisting of seven larger and about thirteen smaller islands.

**DUTCH.**

The only Dutch possessions now in Africa are some posts or forts on the Gold Coast, and chiefly within the limits of the Ashantee empire: the principal place is Elmina, under the government of the governor-general.

**DANISH.**

These are a few unimportant posts, also on the Gold and Slave Coasts, and within the Ashantee dominion. Christiansburg is the chief place, and the residence of the governor-general. Only one vessel went from Denmark to these settlements in 1830, and this after a lapse of several years.

**AMERICAN.**

The colony of Liberia near Cape Mesurado, founded by the American Colonization Society. It is a private enterprise, and has for its object the settlement in Africa of free negroes from the United States. The chief places are Monrovia and Caldwell.

**OTTOMAN.**

These are really foreign possessions, being held by Turkish authorities, who are nominally dependent on Constantinople. They are Egypt, including the eastern desert, the Wadys of Siwa, Khargeli, &c., Nubia, Sennara, Kordofan, &c. Tripoli and Tunis can be no longer considered as at all dependent on the Sultan.

**AFRICAN ASSOCIATION.**

A society formed in London, in the year 1788, with the design of encouraging men of enterprise to explore the interior of Africa; of acquiring by their means a knowledge of the character of the native inhabitants; and of being enabled to introduce among them the arts of civilization.

At its first formation, the Association consisted of ninety-five members, many of whom were men distinguished by their zeal in the cause of science. The management was intrusted to Dr. Dale, of the University of London, as chairman; and Thomas Baring, and the Rev. Dr. Johnson, as secretary. This committee addressed the funds, conducted the correspondence, and appointed the persons to whom the accomplishment of its objects was confided. Dr. Johnson Banks was one of the first and most efficient members of the committee.

The first person commissioned by the Association was John Ledyard, an American, who had already gone round the world with Captain Cook, and had given other proofs of his adventures and disposition. The task assigned to him was that of traversing the widest part of the continent of Africa, from east to west, in the supposed latitude of the river Niger. While preparing himself for this undertaking, and making the necessary inquiries at Cairo, where he had arrived August, 1788, Mr. Ledyard was seized with a bilious fever and died.

The committee lost no time in supplying his place; and in October of the same year despatched Mr. Lucas, whom they selected on account of the knowledge which he had acquired in previous travels of the interior of the Arabs. The instructions of the committee to Mr. Lucas were, to proceed from Tripoli over the great desert of Sahara, and to return homeward by the way of the Gambia river to the coast of Guinea. Mr. Lucas proceeded from Tripoli to Mesarares, where he remained about a month collecting information, when, owing to the difficulties and dangers, caused by a state of warfare, which constantly opposed themselves to his undertaking, he was induced to make a short retreat to Tripoli, and thence returned soon after to England.

The next person engaged by the Association was Major Houghton, an officer who had acquainted himself, in the course of former journeys, with the customs of the Moors and Negroes. He arrived at Tripoli in February, 1790, and succeeded the stream to Medina, the capital of the kingdom of Wooll, on the north side of the river. He next crossed the river Faaleme, and arrived at Ferianna, sixty-five miles S.E. of Bambou. Endeavouring thence to penetrate the kingdom of Luddama, Major Houghton engaged with some Moorish traders at Jarma to accompany them to Timbeest, but was treacherously plundered by them and left in the desert. After severe privation, he returned to Jarma, and there died, in September, 1791. Not without strong suspicions of having been murdered.

Without being discouraged by these repeated disappointments, the Association sought for some other person to prosecute the undertaking; and Mr. Lewis, of the British East India Company, who sailed in May, 1795, and arrived at Jullifree, on the banks of the Gambia, and near to its mouth, in the kingdom of Barra. In December he set out from Pisania, accompanied by two negro servants and four other natives, and advanced into the kingdom of Wooll. He then went through Kajangopp, crossed the river Senegal, and proceeded through the kingdoms of Kaarta and Ludamara to Jarma. Mr. Park afterwards successfully explored the banks of the river Niger, and was called the first of its agents, and has been thought identical with the Senegal,—proceeding as far as the populous city of Segou, the capital of Bambarra, and to Silla. This last place (in lat. 14° 48' N., long. 1° 34' W.) was the extreme limit of his first journey, the particulars of which were communicated to the Association in 1798. The second journey of this adventurous traveller in 1804 was undertaken at the expense of Government.

In July, 1797, Mr. Hornemann, a German, left London under an engagement with the Association. This gentleman had in previous years accomplished several successful excursions, and had satisfied himself for the task of exploring Africa, and with the same object remained some time at Cairo. Here, while waiting the departure of the caravan to Cassina, Mr. Hornemann was informed that the enterprise was intrusted to Captain Needham, by order of General Buonaparte, who, on learning his destination, supplied him with passports and other facilities for his journey. He commenced his travels westward with the caravan in September, 1798, and arrived at Moorouk,
in Fezjan, in November. Here he remained for a considerable time; and in April, 1806, he set out for Cairo. His last young German, named Roem, accompanied him. He was overtaken by a storm, and received eight years afterwards, stated the probability of his being still alive in the interior of the country. According to one report, he was living, in June, 1803, in Cashina, where he had assumed the character of a Marabout or Mussulman and was respected.

Mr. Nicholls was next engaged by the Association. This gentleman, who was instructed to proceed to Calabar, in the Gulf of Benin, arrived there in November, 1804, and died shortly after from the fever of the country. The last栽 referred, in October, 1805; the voyage being at a considerable cost, was ordered, —a deed to which his guides were most probably incited that they might possess themselves of his property.

The last missionary of the Association was John Lewis Burekahardt, a young Swiss of good family, who visited English. On his return he was instructed to introduce among the arts of commerce and manufacture in the interior of Africa. Between this time and March, 1809, when he sailed for Aleppo, Mr. Burekahardt remained at Cambridge studying Arabic. On his arrival at Aleppo he assumed the name of Ibrum Ibn Abdallah, together with the eastern costume, and the outward character of a Mussulman. He remained in Syria two years and a half, which time was spent in acquiring knowledge of all the spoken dialects of the country, and in habituating himself to the customs of the people. At the expiration of this time, he went to Damascus, and after visiting Mecca and Medina, arrived at Cairo in June, 1815. In the following spring he visited Mount Sinai, and returned to Cairo, where he remained until October, 1817, when he was seized with dysentery and died. The journal of his travels in Syria to the time of his arrival in Cairo was transmitted to the Association, and published. His papers of a later date, which are believed to have been highly interesting, have not hitherto reached this country, and it is feared are lost.

The affairs of the Association have discouraged the Association from engaging other missionaries. A great deal of information, connected with the geography of Africa, was collected by them from various sources during the period of their active labours; and this information, together with the public in the occasional printed reports of their proceedings.

The Association has recently merged in the Royal Geographical Society, into which body its few remaining members were admitted in 1831. [See Proceedings of the Association, from 1794 to 1805; Lyden's History of Voyages and Discoveries in Africa, edited by H. Murray; and Journal of the London Geog. Soc. vol. i. p. 257.]

AFRICAN COMPANY. A regulated Company established by the act 23 Geo. III. cap. 31, (1754,) which was first charged with the maintenance of all the British forts that lie between Cape Blanco in lat. 20° 47' N., long. 16° 58' W. and the Cape of Good Hope, and afterwards with upholding those only which lie between Cape Rouge and the Cape of Good Hope. The profits of this institution, other than the stock companies had been successively established for prosecuting the African trade. The last of these, the Royal African Company, had an exclusive privilege by charter, under and by virtue of a letter of patent granted to a long dozen of shareholders by the Crown in pursuance of the 13 Geo. II. which declared any merchant to be admitted a member of this corporation limited to forty shillings. The Company was prohibited from trading in its corporate capacity, or upon a joint stock; from borrowing money, or from laying any restraints upon the trade, which might be carried on freely from all places and by all persons, being British subjects, who should set the time. The government was vested in a committee of nine persons, and was to consist of the Company resident in London, Bristol, and Liverpool; three members being returned from each of the places, who held their sittings in London.

For the purpose of maintaining the forts and garrisons, an annual sum of about 13,000l. was voted by Parliament, for the due disposal of which the committee were responsible to Government. The salaries of their clerks and agents, with all other expenses of management, including compensation of the members of the committee, were defrayed from the sums allowed out of the sums received as fines of admission from the freemen. In the course of time it happened that the whole expense of the Company came to be defrayed by the public, and for this reason the charter of its incorporation was recalled by Parliament in 1807 (1 and 2 Geo. IV. cap. 40), by which his Majesty being empowered to grant allowances to the officers and servants of the Company. The possessions of the Company on the west coast of Africa were by this act assigned to and made dependencies upon the colony of Sierra Leone.

AFRICAN INSTITUTION. A society established in London, in April, 1807, whose declared objects were, to collect accurate information respecting the natural productions and history of the interior of Africa; to establish missions in the interior of the African continent, and, also, respecting the condition, intellectual, moral, and political, of its inhabitants; to cultivate friendly relations with the African people, and to promote among them the diffusion of useful knowledge:—to make expeditions for the purpose of acquiring a knowledge of the African language, and the most extensively used, and to reduce them to writing, with the view of facilitating the spread of information among the natives. As an important instrument for promoting these objects, the members of the institution were invited to devote their individual attention and united influence to obtain the enforcement of the law, then recently passed, for abolishing the African slave trade, and to expose all attempts to evade its provisions.

Among the early patrons of these laudable objects, were to be found many of those men of both Houses of Parliament whose exertions had procured the passing of the abolition law.

The institution disclaimed all projects of a colonizing or commercial nature, and did not profess the intention of imparting religious instruction to the African people.

To provide the funds required for the prosecution of its plans, four classes of contributors were invited to associate themselves; viz., hereditary governors, whose qualification was a donation of sixty guineas and upwards; life governors, whose donations amounted to thirty guineas; governors, who subscribed annually three guineas and upwards; and members, who contributed each one guinea a-year. The affairs of the institution were to be administered by a patron, president, twenty vice-presidents, and thirty directors; the latter body being chosen annually from among the governors.

Plans were extended, required, for their accomplishment, the prosecution of very ample funds, if, indeed, success could be reasonably hoped from any efforts, however powerful supported; where the directing body was so far removed from the sphere of action, and must necessarily intrust the execution of its mandates to agents with views and interests might not coincide with those of the London directors. The subscriptions obtained at the first establishment of the institution were considerable both in number and amount, but they very soon fell short of the sum required, so that in 1815 the institution was almost completely without funds.

In the first year of its establishment, the institution sent out to Sierra Leone three African youths, who had been instructed on the plans of Dr. Bell and Joseph Lancaster; it gave directions for engaging persons qualified to teach the Arabic and Swahoe languages; conveyed
Africanus wrote a learned letter to Origae, in which he disputes the authenticity of the apocryphal history of Susannah. This letter has been printed at Basle, in Greek and Latin, 1624, and is reprinted in Eusebius's Eclesiastical History. A great part of another letter of Africanus to Aristides, reconciling the disagreement between the genealogies of Christ in Matthew and Luke, is extant in Eusebius's Eclesiastical History. In order to resolute the difference between the genealogies of Christ among the Jews, by which brothers were obliged to marry the wives of their brothers who died without children. The fact of a man so learned and intelligent as the chronologist Africanus being a Christian, refutes the error of those who think that all Christians in the first centuries of our era were iliterate. The criticisms of Africanus upon the apocryphal books seem to attest that he did not receive the canonical writings of the New Testament without previous examination; and from his manner of reconciling different genealogies of Christ, it appears certain that he recognised the authenticity of the Gospels in which they occur.

AFTER-MATH is the grass which grows after the hay has been made: it is also called latter-math, rough, or rowett, and when left long on the ground it is called fagg in some places. Where the land is rich and hay valuable, the aftermath is often mown and made into hay. This hay is inferior in value and nourishment to the first crop, which contains that does not produce good for horses, especially those which are driven hard and work hard: it is thought injurious to their wind. Cows and sheep are good of it, and with it they is not liable to the same objection to the quality of the crop of hay, or to feed off the aftermath, must depend on circumstances and situations. Unless the meadows can be irrigated, or well manured, taking off two crops of hay in one year exhausts them, and is apt to produce moss, which is a weed, and which cannot be wholesome food: besides, slugs and various insects breed in it. The aftermath should be fed clear before winter. A good farmer should have hay, straw, and roots sufficient for his stock. Swedish turnips, mangel wurzel, carrots, &c., may be stored, as they may be digested and mixed with other things, to grow fruit in the shape of animals, or of the human countenance, and in which may produce potatoes, and of various colours, &c.

Valerius, Scaliger, and others, considered the contents of the Kesti in the lists of the Africanus, and attribute them to a pagan philosopher called Sex. and Jerome omits the Kesti in his list of the works of Africanus. But Eusebius, Hist. Eccl. vi. 31. ed. Valer. p. 295, Suidas, Vossius, Wetstein, and others, describe the Kesti to Africanus. Compare Hamburger's Zufallser angeichter, tom. ii. p. 525.

Africanus wrote a chronological work in five sections under the title of Pentathlos, containing, as some learned men think, an amplification and a continuation of Manio's work. The Pentathlos contained a set of universal history, composed to prove the antiquity of true religion and the novelty of paganism. Fragments of this chronology are extant in the works of Eusebius, Synesius, Melitius, Theophrastus, Celsus, and others. The chief title is collective, and Eusebius, with the Creation, 5499 n.c. and closes with 221 A.D. The chronology of Africanus places the birth of Christ three years before the commencement of our era. But under the title of the Danai, ten years fall to the number which had elapsed, and thus the computation of the churches of Alexandria and Antioch were reconciled. [See E.H.A.] According to Fabric. Bibl. Gr. ed. nova, viii. p. 9, there exists a MS, containing an abstract of the Pentathlos. Scaliger has borrowed, in his edition of Eusebius, the chronology of Africanus extant in Ge. Synesii, Chronographia ab Abydeno ad Dioecesiam, &c. Joh. Guat. Gr. et Lat. Paris, 1624, ed.
Agius, afterwards called Achaia; thus including the whole northern coast of Peloponnesus. Menelaus, second son of Agamemnon, was the last of the Achaeans to fall, having been killed by Helen, daughter of Tyndareus and Leda. The southern and eastern portion of Argolis, though governed by a monarch of its own, was probably dependent to a great degree on the two powerful regions of Marathon and Megara. It does not appear who inherited the kingdom of Pisa after Pelops; none of the four chiefs who led the Eleians to Troy were of his family, so that the degree of influence which the Pelopid princes possessed over Elis can hardly be ascertained. Other historians have supposed that the Achaeans were occupied by colonists who followed Pelops from Asia. Thus, in at least four, probably in five, of the six principal divisions of Peloponnesus, (Arcadia being the one excepted,) the house of Atreus had a direct family interest and influence. The exact history of this dynasty is not easily defined: but the best authorities concur in bearing testimony to its existence. Homer mentions the sceptre of Agamemnon as the emblem of authority over all Argos (Peloponnesus) and many islands; and Thucydides expresses his belief that the above-named monarch ‘assembled the Grecian forces, not so much through favour, as fear.’

In the earliest and most credible authors, Homer and Hesiod, we find no trace of the long train of horrors which lay in the way of the house of Atreus, according to the writings, especially the tragedians. At present we shall confine ourselves to relating what bears some mark of historical truth. The history of Agamemnon, before the Trojan war, is comprised in two sentences: he was the son of Atreus, whom he slew, as we are told, at Calchas’ suggestion, and the Grecian custom of giving to the son a patronymic name, or a name formed according to certain rules from the name of the father; and he married Clytemnestra, sister of Helen. The Trojan war arose out of the abduction of Helen by Paris, the son of Priam, King of Troy. It is commonly said, that a number of the princes of Greece having been drawn together as suitors by the extraordinary beauty of Helen, Tyndareus exacted an oath from them, that one of the suitors should not leave Troy if his wife were carried off, all the rest should unite to recover her: and that in virtue of this oath, the confederate princes assembled under the command of Agamemnon. In reference to this story, Thucydides has expressed his belief, that Agamemnon got together that fleet, not so much for that to which he had with him the suitors of Helen, bound thereto by oath to Tyndareus, as for this, that he exceeded the rest in power. In continuation, the historian lays great stress upon his naval power, as evinced by his being, in Homer’s words, ‘king of much wealth, and horses, and a treasure of tortoises and the Tortoises, besides conducting a hundred filled with his own followers, a larger number than was led by any other chief.

The assembled fleet was detained at Aulis by contrary winds and contrary chimaeras, and by the fear of the gods might be averted, and the delay obviated, declared that Iphigenia, daughter of Agamemnon, who had incurred the displeasure of Diana by killing her favourite stag, must be sacrificed to the goddess. The natural reluctance of the father was overcome by importunity and ambition; and the intended victim was summoned to Aulis, under pretence ofbetraying her to Achilles. At the point of death she was miraculously saved by Diana, whose priestess she afterwards became among a savage people of Asia, called the Tauri. This story is related neither by Homer nor Hesiod: it rests, however, on the early authority of Pindar, Pyth. ii., and Euxylus; and is pregnant with too important consequences to be omitted, since the alienation of Clytemnestra from Agamemnon was the principal cause in her horror of this unnatural transaction.

The siege of Troy was protracted for ten years. The most memorable event of it is the quarrel between Agamemnon and Achilles, the subject of the Iliad; in which the consummation of the Trojan war is reached. Homer represents him as brave, and expert in arms, insomuch that when a Grecian warrior was selected by lot who should contend with Hector in single combat, it was the general prayer that the lot might fall on Ajax, Diomed, or Achilles, and not on the inexperienced hero. Homer represents him as brave, rather than as the soldier, that he is presented to our notice, and usually with some reference to his westward and power: ‘king of men’ is the distinguishing epithet constantly added to his name, as ‘swift footed’ is to the name of Achilles. Homer also (fragm. 49) says that the Olympian god has given strength to the descendants of Agenor, kinsfolk of those of Atreus. Returning from Troy he was ambushed by the Carians, and was murderously butchered by Memnon, son of his uncle Tythestes. This catastrophe is the subject of the Agamemnon of the Eupolemos, one of the most sublime of all the Ancient Greek tragedies. Orestes, son of Agamemnon, then a child, was saved by the care of his tutor, and timely flight. After passing seven years in exile, he returned in secret, avenged his father’s death by the slaughter of his mother and of Agamemnon, and re-conquered his kingdom. The Eumenids, which relates the remorse and madness of Orestes, and his trial and acquittal before the Athenian court of Areopagus. The Electra of Sophocles has the same subject as the Chororhii. Euripides has two tragedies on the story of Iphigenia; and one called the Electra, which has the same subject as the Chororhii and Electra of Sophocles, but is much inferior to both of them. The Orestes of the same author relates the history of Orestes subsequent to the death of Clytemnestra.

A’GAMA, in zoology, a genus of reptiles belonging to the order of saurians, and family iguanians, as established by Baron Cuvier in the Règne Animal. The division to which this genus appertains is one of the four natural orders of the class of Reptilia according to M. Cuvier, and is distinct from those of Fowls, or birds, and of Vertebrata or fishes, and amphibious of Linnaeus, and in which he has been followed by the most judicious subsequent zoologists. The earlier division by which Linnaeus proposed to arrange the saurians is that of which the reptiles and serpents, or those with and without feet, together, comprehend all the true zoological classification of the Ichthyosaurus, and influence their habits and economy. M. Brogniart, in joining to the Linnaean principle of division taken from the organs of locomotion, the additional consideration of the comparative quantities of respiration in this class, has laid the foundation of a distribution more agreeable to the system of nature, and, as far as it goes, perhaps, more satisfactory, than the primary divisions in any other class of animals. The four orders thus established by M. Brogniart, and now generally admitted by naturalists, are, 1st. the Cheloniae, 2nd. the Batracians, 3rd. the Serpentes, and 4th. the Sauria or reptiles, (or frogs, toads, salamanders, &c.,) which have only one auricle in the heart, four, or rarely two legs, and naked bodies; and which, moreover, like the insec tribus, are subject to a metamorphosis, passing, with age, from the state of a fish which respires through gills, to that of a quadruped breathing air by means of lungs. The example of this last order presented by the tadpole or young frog, and of the transformation which it undergoes upon assuming its perfect reptile form, are familiar to every one.

Having given this general preliminary view of the principles of classification, the subject of this article is in order that the reader may be enabled to comprehend the precise import of the terms which we are obliged to employ, it is only necessary to observe farther, that Baron Cuvier has subdivided the order, saurians, into six natural families, distinguished by one another by peculiar and interesting characters. Of these the iguanians are the third in order; they differ from the other families chiefly in the nature of the tongue, which is thick, fleshy, and attached to the underjaw; consequently, without the power of being protruded, as in the generality of reptiles. The shells of these reptiles and alligators, indeed, are of the same form; but from these destructive reptiles the iguanians are zoologically distinguished by their long flexible toes not united by membranes, and generally by their diminutive size, round tails, and small uninclosed scales. M. Cuvier again subdivides...
the family iguanians into two smaller sections, or sub-families; the iguanians, properly so-called, which, besides the ordinary series of maxillary or jaw-teeth, have likewise two small additional rows on the posterior margin of the palate; and the agammis, which want these additional palate teeth. To the latter sub-family, of which, indeed, it is the type, because the genus agama is the subject of the present article, and of which we proceed to describe the characters, and a few of the principal species.

In the form of their heads and teeth the agammis resemble the common lizards, but differ in the imbricated scales which cover their tails. These animals have the body thick and shorter in proportion than the generality of the saurian family; the skin is lax and capable of being distended or pulled out with air at the will of the reptile: the whole body, as well as the head, neck, and feet, is covered with minute rhomboidal or hexagonal scales, often prolonged in the form of little spines, and bristling when the body is inflated with air. The head is short, broad, and flat, particularly toward the occiput; the neck also is short, and the tail seldom longer than the body. These proportions give the agammis much of the hideous and disgusting appearance of toads, and, indeed, Scler and other authors have occasionally confounded them with these reptiles. In many parts of South America they are called chameleons, from their power of altering the skin with air, and thus, to a certain extent, imitating these animals in the various lines which they are capable of assuming. In other respects the various species of agammis differ so considerablv from one another, as to have induced Baron Cuvier to arrange them in separate subgenera, distinguished by the form of their scales and the presence or absence of pores in the thighs. Spix, and some other writers, are inclined to regard these distinctions as real generic characters, but they are obviously of too little value, and exercise an influence too confined over the habits and economy of the animals, to warrant us in adopting the ideas of these zoologists. We shall therefore follow the more judicious sentiments of M. Cuvier, in regarding these subdivisions as of no intrinsic value in themselves, but merely useful, as a practical means of distinguishing the species. It will be sufficient at present to indicate these different subgenera, and to refer to the works of the above-mentioned naturalists for a more particular account of their several and respective characters. Generally speaking, the agammis have no thigh pores; some, however, are provided, as is the case with certain other saurian reptiles, with a row of these pores along the inner surface of each thigh: some species have the toes so short and rigid as to compel them to live entirely on the surface of the earth, where they reside among roots and heaps of stones, and conceal themselves in crevices; others again, which have long and flexible toes, ascend trees with great facility, and sport among their branches with the utmost security. All are of a diminutive size, and, like most other reptiles, feed upon insects and other small animals: one or two species, nevertheless, are reported to be herbivorous. Their geographical distribution is very extensive, and embraces all the hot and temperate parts of the known world: Asia, Africa, Australia, and South America have each their appropriate species, which often differ from one another so slightly, that much confusion still prevails among their characters and synonymy. The most remarkable species are, of those without pores on the interior face of the thighs—

The nucated agama (Ag. Marcott, Cuv.), first described by the celebrated John Hunter in the zoological part of White's *Voyage to New South Wales*. It is one of the most common lizards of that colony; measures upwards of a foot in length, comprehending the tail, which is twice as long as the body, and, from the great length and perfect division of its toes, readily ascends trees, and lives entirely in the woods, where it hunts about for insects and caterpillars. Its general colour is a brownish grey, marked with dusky bars, which run in a longitudinal direction on the body, but transversely on the legs and tail. The scales which cover the upper and outer parts of the trunk and extremities are rhomboidal, and crenated, or elevated into sharp-pointed ridges, forming parallel lines or rows of spines upon the back and sides from the shoulders to the very point of the tail. The head is covered with similar scales, all directed backwards and prolonged upon the occiput into a crest of weak spines. The toes of all the feet are well separated, and furnished underneath with small pointed scales: the middle toes of the hind feet are nearly twice the length of the others.

*Agama nucata.*

The *Agama Barbata* of Cuvier is another species from the same locality. It is rather larger than the nucated agama, but preserves the same relative dimensions, and lives in the forests in the same manner. A range of large spinous scales passes in transverse bands over its back and tail, and the throat is covered with long-pointed scales, forming a sort of beard, though neither so strong nor so conspicuous as in the guamas. Similar scales cover the sides and form two oblique crests behind the ears; the belly is spotted with yellow, and the throat is capable of being distended at the will of the animal. This species is likewise figured and described in White's "Voyage," p. 255, but was considered by Mr. Hunter as a mere variety of the former.

Other species of this division, having pores on the inner surface of the thighs, are the *Leiolepis* (A. Guttata) of M. Cuvier, of Cochlin Chima, with white rays and spots on a bright blue ground; the *Tropadiceps* (A. Undulata), of a uniform dark blue colour with a white cross on the throat, and which, as well as the kinds species, A. Nigra-Culata and A. Cycletars, described by Spix, inhabits various parts of South America; the *Brachylophes* (A. Viatrix), which seems to form the connecting link between this genus and the
guanas, from which latter it is distinguished only by the absence of teeth in the palate; it is found in India, and has light blue bands upon a dark blue ground; and, lastly, the Phymaturus (A. Cucinclus), from the Malay Peninsula, is remarkable for its large size, uniform blue colour, but more particularly from being one of the very few species of saurian reptiles which feed upon vegetable substances; Baron Cuvier assures us that it lives and grows upon... of agamas without pores in the thigs, the principal species are, the Spinously Agrama (A. Acoleta) of a yellowish grey colour with numerous transverse 'brown' bands. All the upper parts of the body are covered with elevated scales, forming a sort of pointed side ridges on the back. The short and thick, the tail likewise short, the head broad and flat, and the belly protuberant. Excepting in the length of the tail and the body being covered with scales, the whole animal has much of the form and appearance of a frog or toad; it is found at the Cape of Good Hope, and is of larger size than the generality of the other species.

The Tapaxyn (A. Orbicularis), of Mexico, is very similar to the species last described in its form and proportions, but is still shorter and thicker. The extraordinary figure of this reptile, approaching almost to the form of a perfect sphere, its broad flat head, its skin covered with small tubercles or warts interspersed among the scales, and the faculty which it possesses of distending its body with air, and in a certain degree assuming different shades of colour, have caused it to be sometimes compared to a toad, and sometimes to a chameleon; but the truth is, that it has no actual relation or affinity to either of these animals, but is indebted solely to its naturally disgusting aspect, for the calamities which the early Spanish writers have heaped upon it. The scales of this species are small, pointed and rough on the upper parts, smooth and flat beneath; on various parts of the back they are elevated into insulated spines, ranged in six or eight longitudinal rows, but without much regularity: the ground colour is dark grey above, with irregular brown blotches, and beneath yellowish red, speckled with small black spots. The legs are short and thick and the toes of equal length, both before and behind. This Tapaxyn inhabits the mountainous and rocky parts of South America, from the Isthmus of Darien to Patagonia; according to Ray, it is capable of domestication, and even recognises and shows a kind of attachment to those who feed it.

Other subgenera and species belonging to this division of the agamas are Tropæus (A. Ejectipes); remarkable for its change of colour; even more sudden than that of the true chameleon; the A. Coletus, of a bright blue colour with transverse white marks on the sides, from the Molucca Islands; the Lophyres (A. Gigantea, Kuhl), with a crest of long elevated spines on the neck; and the Lyricephaeus (A. Seucta), which has a similar elevated crest along the back, and the tail keel-shaped. This latter species, in many respects a most singular reptile, inhabits Bengal, and lives upon fruits.

In the short account which we have here given of this extensive genus, we have confined our remarks principally to the general characters and most remarkable habits of these animals, as far as the latter have been observed; but it is to be regretted that we possess fewer authentic observations upon the manners and economy of reptiles, than of almost any other class of animals. Of the many thousand different species of reptiles enumerated in the most complete catalogues of zoologists, it may be safely affirmed, that we do not know the habits of as many dozens; yet this defect of information is to be attributed only to the inattention or ignorance of travellers, for these animals afford at least the same facility for observation and experiment as mammals and birds, and much greater than fishes or insects. For ample details concerning the specific differences of the agamas, we refer the reader to the works of Cuvier, Dandin and Monoucour.

A’GAM.E, in botany, is a name given by some authors to the large division of the vegetable kingdom, called Flowerless, and may be considered equivalent to the older term, Cryptogamic plants. The word, which means sexless, has been hypothetically derived from the supposition that the flowerless class is absolutely destitute of stamens and pistilla. Although few persons can now be found who entertain any doubts as to such a fact, yet the invention of a new term in consequence, has been generally considered superfluous. It may be perfectly true, that forms, and mosses, and lichens, and conferve, and fungi, are wholly destitute of sexual organs, and yet the term agame may be unnecessary: for this reason it is seldom employed.

A’GAMI (Trophiæa crestitans), Latham, an interesting bird, sometimes also termed the gold-breasted trumpeter, classed by Pallas among cranes, by Brisson among pheasants, and making the first genus in Temminck’s Alectorides. It is the size of a pheasant or large fowl, being twenty-two inches in length, but appears larger from having a long neck, and from standing high on its legs. It bears some slight resemblance to the pheasant in the glossy iridescent green on the breast, and in a space round the eyes naked of feathers; but has a very short tail, consisting of twelve black feathers, over which the long, loose, silky scapular rump plumes hang drooping. Its long greenish legs assimilate it to wading birds (Grullatores); but it is said not to have the habits of these, never visiting fens and the margins of water, and living wholly in upland forests and arid mountains. It inhabits the forests of tropical America, and never visits the cleared grounds or the settlement... According to M. Monoucour, it is very gregarious, being found in numerous flocks, which walk and run, but rarely fly, and, when they do, seldom rise more than a few feet above the surface of the ground. Even when pursued they trust most to their speed in running.

[Agami]

Several naturalists have given accounts of the Agami in a domestic state. Its docility and attachment to man are remarkable. ‘The Agami,’ says Monoucour, ‘is not only tamed easily, but becomes attached to its benefactor with all the fondness and fidelity of the dog; and of this disposition it shows the most unequivocal proofs. When bred up in the house, it loads its master with caresses, and follows his motions; and if it conceives a dislike to persons on account of their forbidding figure, their offensive smell, or of injuries received, it will pursue them sometimes to a considerable distance, biting their legs, and testifying every mark of displeasure. It obeys the voice of its master, and even answers to the call of all those to whom it bears no grudge. It is fond of caresses, and offers its head and neck to be stroked; and, if once accustomed to these familiarities, it becomes troublesome, and will not be satisfied without continual fondling. It makes its appearance as often as its master sits down to table, and begins with driving out the dogs and cats, and taking possession of the room; for it is so68

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victory with the utmost rancour, and, if not parted, will destroy the fugitive. By its intercourse with man, its instinct became moulded like that of the dog; and we are assured that it can be trained to tend a flock of sheep. It even shows a degree of jealousy of its rivals; for, when at table, it bites at the naked legs of negroes, and other domestics, who come near its master.

The peculiar noise which these birds make, without opening the bill, is one of their most remarkable characteristics. This noise is no doubt produced by a peculiar conformation of the organ of sound. According to Pallas, the taryztk, which is on the outside of the breast, is about as thick as a swan's quill and almost bony, becomes much more slender, loose, and cartilaginous when it enters within the breast, which are broad enough to form a membranous tube and capable of being extended, proceed from it. The air-bag on the right side descends to the pelvis, and within the breast it is divided into three or four cells by transverse membranes. The air-bag on the left side is narrower. Vosmaer tells us that the sound is sometimes preceded by a wild cry, interrupted by a call somewhat like 'soheer, scherrick,' and then follows the characteristic noise somewhat resembling the cooing of pigeons. It utters, in this way, five, six, or seven times, with precipitation, a noise which none else can imitate, and which the birds too, too, too, too, resting upon the last a very long time, and sinking the sound gradually till it terminates. During this, the breast is seen to heave, as in birds, while singing, though the bill remains open, and no doubt, performed by the air rising up from the lower air-bags on the right and left above described, which meeting with the transverse membranes in its passage, causes them to vibrate and sound, and this is communicated to the surrounding muscles, and by these to the air-bag, so that which is a sort of ventriloquism, and requires not the bill to be opened in order to be heard.

The Agami, is the rest of the ecclesiastics, builds no nest, but makes a clay place where it deposits its eggs, from ten to sixteen in number, and of a light green colour. They are somewhat larger than a hen's egg, and of a rounder form. The down remains a long time on the young, and grows into long silky plumage very close, like fur, and it is not till they are in the fourth size of the adult birds, that the true feathers appear.

Dr. Latham tells us, that 'one of these Agami, a young bird, found its way into a farm-yard in Surrey, and associated with the poultry. It was perfectly tame, and, on one occasion, accompanied the hounds for three miles, and kept up with them. It was last in the possession of Lord Stanley, but died on its way into Lancashire.'

AGAPAE, the plural of the Greek ἀγάπη (agape), which is the vulg., or popular name, or characteristic name, of the Christian church, the agape were those meetings of the early believers, where they sat and ate, at a common table, of food which had been provided by the voluntary contributions of the members of the society, the entertainments included with the mealtimes, which were usually held in the same house or apartment in which they assembled for divine worship, are at least mentioned once in the New Testament, namely, in the 12th verse of the epistle of Jude, where it is said of certain unworthy brethren, 'there are spots in your feasts of charity.' The Greek word here is agape. It is probably also that St. Paul alludes to the same thing in 1 Cor. xi. 20, where his language would seem to imply that the agape had been instituted originally as celebrating the sacrament of the Lord's Supper. But whether they arose in this way, or from those feelings of brotherhood and that charity towards their poorer brethren which were so strongly inculcated upon the first followers of Christianity, both by the religionists, and by the entertainments of the meetings amidst which they were placed, it is certain that even in the days of the apostles these meetings had been occasion-ally perverted from the purpose of their institution. St. Paul, in 1 Cor. xi. 20, which we have so often mentioned, charges the Corinthians that, when they came together into one place, in eating every one taketh before other his own supper; and one is hungry and another is drunken. And he continues, What have ye, to houses to eat and to drink in? conclusion of the explanation of the manner in which the holy supper ought to be partaken of, with the general direction, Wherefore, my brethren, when ye come together to eat, tarry one another. And if any man hunger, let him eat at home. These love-feasts also gave great occasion of scandal to the enemies of the faith. The reader may find an account of the accusations of which they were made the groundwork by some of the pagan writers in the sixteenth chapter of Gibbon's History. They seem, however, to have continued the generalisation for several centuries. Ecclesiastical writers mention three kinds of them,—first, those which took place at marriages, called the nuptial or connubial agapes, to which the bishop or pastor was usually invited: second, the anniversary, or, as they were called in Asia, which were held in the churches on the festivals of the martyrs; and, third, the funeral agapes, at the interments of members of the congregation. The celebration of the love-feasts in the churches was at first called by the name of Agape, from the name of Laodicea, in A.D. 364; although the enactment would seem for a considerable time not to have been quite effectual, since we find it repeatedly renewed by subsequent councils.

Nor does the practice under improved regulations appear to have been discontinued in all circumstances by the heads of the church. In the sixth century, as we are informed by Bede, Pope Gregory, in his instructions to Austin when he sent him to Britain to convert the Saxons, advised him to allow a certain number of fasts on animal days, and the anniversaries of the dedication of the churches, not in the churches themselves, but in abased furnished with green boughs close by them, to the glory, he says, of God, as they had formerly done to the honour of the devil. A great deal of information is required to discover traces of the Christian agape, both among the Jews and pagans before the institution of our religion, and in the latter times of the church. But the only thing exactly corresponding to the primitive love-feast is the agapem ov, or certain modern sects, especially the Moravians and the Sandemanians.

AGAPHITE. [See TURQUOISE.]

AGARICUS, a genus of the mushroom madrepore, a genus of coral madrepores, so called from its resemblance in form to mushrooms (Agaricus). The animal inhabitants of agaricae are unknown, with the exception of a single species observed by M. Lecouer on the shore of St. Thomas in the Antilles. Lamarck enumerates five, and Parkinson seven species.

AGARICUS is the generic name by which all the species of mushrooms properly so called are collectively known. It comprehends such plants of the fungus tribe that have a cap composed of small scales on a distinct stalk, and a number of parallel unequal vertical plates or gills arising out of the cap, and including the particles by which the species are reproduced; particles which are usually included with the mealtimes, which were usually held in the same house or apartment in which they assembled for divine worship, are at least mentioned once in the New Testament, namely, in the 12th verse of the epistle of Jude, where it is said of certain unworthy brethren, 'there are spots in your feasts of charity.' The Greek word here is agape. It is probably also that St. Paul alludes to the same thing in 1 Cor. xi. 20, where his language would seem to imply that the agape had been instituted originally as celebrating the sacrament of the Lord's Supper. But whether they arose in this way, or from those feelings of brotherhood and that charity towards their poorer brethren which were so strongly inculcated upon the first followers of Christianity, both by the religionists, and by the entertainments of the meetings amidst which they were placed, it is certain that even in the days of the apostles these meetings had been occasion-ally perverted from the purpose of their institution. St. Paul, in 1 Cor. xi. 20, which we have so often mentioned, charges the Corinthians that, when they came together into one place, in eating every one taketh before other his own supper; and one is hungry and another is drunken. And he continues, What have ye, to houses to eat and to drink in? conclusion of the explanation of the manner in which the holy supper ought to be partaken of, with the general direction, Wherefore, my brethren, when ye come together to eat, tarry one another. And if any man hunger, let him eat at home. These love-feasts also gave great occasion of scandal to the enemies of the faith. The reader may find an account of the accusations of which they were made the groundwork by some of the pagan writers in the sixteenth chapter of Gibbon's History. They seem, however, to have continued the generalisation for several centuries. Ecclesiastical writers mention three kinds of them,—first, those which took place at marriages, called the nuptial or connubial agapes, to which the bishop or pastor was usually invited: second, the anniversary, or, as they were called in Asia, which were held in the churches on the festivals of the martyrs; and, third, the funeral agapes, at the interments of members of the congregation. The celebration of the love-feasts in the churches was at first called by the name of Agape, from the name of Laodicea, in A.D. 364; although the enactment would seem for a considerable time not to have been quite effectual, since we find it repeatedly renewed by subsequent councils.

Nor does the practice under improved regulations appear to have been discontinued in all circumstances by the heads of the church. In the sixth century, as we are informed by Bede, Pope Gregory, in his instructions to Austin when he sent him to Britain to convert the Saxons, advised him to allow a certain number of fasts on animal days, and the anniversaries of the dedication of the churches, not in the churches themselves, but in abased furnished with green boughs close by them, to the glory, he says, of God, as they had formerly done to the honour of the devil. A great deal of information is required to discover traces of the Christian agape, both among the Jews and pagans before the institution of our religion, and in the latter times of the church. But the only thing exactly corresponding to the primitive love-feast is the agapem ov, or certain modern sects, especially the Moravians and the Sandemanians.

AGATHA. [See TURQUOISE.]

AGARICUS, a genus of the mushroom madrepore, a genus of coral madrepores, so called from its resemblance in form to mushrooms (Agaricus). The animal inhabitants of agaricae are unknown, with the exception of a single species observed by M. Lecouer on the shore of St. Thomas in the Antilles. Lamarck enumerates five, and Parkinson seven species.
We propose to point out in this article what the distinctions are, by which it has been supposed that the estable and poisonous species may be recognized, because the reader of such a work as this would be more likely to be misled by imperfect descriptions than benefited by speculative distinctions. We shall therefore confine ourselves to a few easy, plain, and intelligible observations, which it is to be hoped cannot possibly lead to error.

Of the thousand species thus much is certain, that all having the following characters are poisonous:

1. Such as have a cap very thin in proportion to the gills.
2. Such as have the stalk growing from one side of the cap.
3. Those in which the gills are all of equal length.
4. Such as have a milky juice.
5. Such as deliquesce; that is, run speedily into a dark watery liquid.
6. And lastly, every one that has the collar that surrounds the stalk filamentous, or resembling a spider’s web.

As to the rest, the only estable kinds that can be safely employed in Great Britain are the following:—

*A. comestria*, the common mushroom, (fig. 1,) the species that is so commonly raised artificially for food. This is readily known in any state by its fragrant odour, by which alone it may be always recognized, and the absence of which is extremely suspicious. When in a very young state, it resembles little snow-white balls, which are called buttons; afterwards it acquires a stalk, separates its cap, and becomes shortly conical, with liver-coloured gills, and a white thick fleshy cap, marked with a few particles of grey. At a more advanced age the cap is concave, the colour grey, and the gills

before commencing their experiments, we would recommend to their attention the following circumstance.

A lieutenant in the French army ate some mushrooms supposed to be of a wholesome kind, at ten in the morning. At seven in the evening he was attacked with severe colic; at ten his wife began to experience the same sensations, attended with nausea. In the course of the night they were both attacked with violent vomiting and purging, accompanied by intense thirst. This was succeeded by severe cramps, and the pulse became hard, weak, rapid, and irregular. At ten the next morning the husband died, and the wife at six in the evening. But the person from whom the agarics had been procured, as well as all his family, had eaten abundantly of them without inconvenience. Upon a careful inquiry, it appeared that the latter had well salted, then boiled for some time, and afterwards pressed the agarics before eating them,—precautions which the unfortunate lieutenant had neglected.

**AGA*SIA**S, a Greek sculptor of Ephesus, whose age is not accurately known. The statue now at Rome called the Borghese Fighter, which is a fine specimen of skill in representing a figure in action, and also shows a careful study of external anatomy, is the work of this Agasias. On the support behind the figure is the following inscription in Greek.—Agasias the son of Dositheus of Ephesus made it.

A’GATE, an ornamental stone used in jewellery, and for some purposes in the arts; it is sometimes called Scotch pebble. The name is derived from the Greek άχατης (achates), a stone described by Theophrastus, and which, he says, came from the river Achatas, in Sicily; now the Drillo, in the Val di Noto. It is one of the numerous modifications of form under which silica presents itself, almost in a state of
were filled by the sublimation of the silica and other materials from the rest of the mass by the action of heat. Each hypothesis is supported by particular cases, which it satisfactorily explains, but there are probably as many against as in favour of each; all of them imply conditions of chemical action different from anything of which we have had experience. We frequently find, it is true, masses of siliceous petrified wood in which hollows of the tree have been filled with agate, not to be distinguished from many nodules found in the trap rocks; and that the matter of the agate must have been introduced into the wood by aqueous infiltrations there can be no doubt. But, in this case, the whole substance of the saturating mass, the wood, is penetrated by silicose-matter; and the difficulty of the theory of infiltration, in the case of the rocks, consists in the absence of any trace in the rock, of the channel by which the solution of silicose-matter could have arrived at the cavity. The following section of an agate is a good example of the filling up of a cavity by infiltration, for it is evident that the siliceous matter, in whatever way it may have arrived, was introduced at the point a, and that there was a gradual deposition of it. Such examples would be more frequently met with, if there was anything in the external cut to tell us in what direction to slit the stone: this same specimen might have been cut in many directions without throwing any light upon its mode of formation, and the section we now see was an accidental cut in the right direction. An attentive consideration of the products of volcanoes may lead to some satisfactory conclusions; for although agates have not been found in lavas, cavities in them are often partially or entirely filled with minerals distinct from any in the rest of the rock.

Agates are often found as loose pebbles in the beds of rivers, or in gravel, but in those cases they have been derived from the disintegration of Amygdaloids, the base of which is very often subject to decomposition when exposed to air and moisture, and then the siliceous nodules fall out. They vary in size from that of a nutlet seed to a foot in diameter; but one, two, and three inches in diameter are the most common.

The stones distinguished by mineralogists and lapidaries by the names of carnelian, cabochon, onyx, sardonyx, Mocah-, stone, blood-stone, chrysoprase, and opal, are so closely allied to agate, that they may be conveniently described under this head. In chemical composition they are not distinguishable, except in the case of the chrysoprase by its characteristic colour. — CARNEILAN, so called because some kinds are of a flesh colour fermin, Latin for flesh, is that variety of a uniform colour which is of most common occurrence; carnelians are never figured or striped. The colours are shades of red and yellow, the deep clear red being the rarest and most valuable. The great supply of carnelian is from Japan, where they exist in vast quantities, and they are also imported from Bombay, being collected in the province of Guzerat: but the best, according to Niebuhr, come from the gulf of Cambay. Many of the antique gems are engraved on the exterior of the stone, but it is much used for seals.

—CALCEDONY, so called from having been early found at Calcedon (sometimes incorrectly witten Chaledon) in Bithynia, opposite Constantinople, is also of a uniform colour, generally of a milky white or pale yellow, like turmal jelly, often with an internal wavy structure in the form of strata, and very generally with a peculiar mammillarv surface. It is found in great abundance in the Faroe Islands, in Ireland, in Cornwall, and many places of Great Britain, as well as other countries; sometimes in large masses, from which ceps and other vessels are formed. Pliny describes it as being found in the bed of the Nile, and as having been brought from Egypt and as brought to Rome from Carcharha.—ONYX. Large agates the siliceous particles are arranged in alternating horizontal layers of opaque white and translucent blue, grey, or brown; and because these have a resemblance to the marks in the human nail, the stone is called onyx, the word for nail, onyx (onyx). It was known to the ancients, and was employed by them, as it is now, for those beautiful gems called cameos, the figure being cut out of the opaque white, the dark part forming the ground, or the contrary. The stone is less stable when the first layer is blue, and when the layer is thick enough to give a high relief to the object to be engraved. In the royal library at Paris, there is an antique cameo cut out of an onyx with four layers, representing the apotheosis of Augustus, eleven inches by nine, which is supposed to be the finest cameo in the world. Agates with an onyx structure are not uncommon, particularly among cameolones, but the finest are brought from India. Cameos are sold at Rome which are made from a thick shell, having different coloured layers like an onyx.—SARDONYX is a variety of onyx which is supposed by some to have received its name from having been brought from Sardes, in Lydia. By others it has been said that the name comes from Sardo, the Greek name of Sardinia, it being some stone found on that island. The Carthaginians brought the stones from that island, and exported them during their occupation of it. In this the opaque white alternates with a red deep orange brown of considerable translucency, and as this is of rare occurrence the sardonyx is of great value. The finest of these stones, and some antique gems are formed of them.—MOHAM- stones and moss agates are semitransparent calebsey, including various ramified forms, produced by iron, manganese, bitumen, and chlorite or green earth, but sometimes also, as it has been proved by Badger, produced by the presence of real vegetable bodies, such as conifers and mosses. The first are found in Guzerat, but received their name from having been brought from Moha, in Arabia; the moss-stone is a variety of chlorite, with numerous bright red spots or drops of blood; called also heliotrope and oriental Jasper.—CHRYSPRA- (from κρυσπρας, κρυσπρας, beautiful — and πρασιν, μακιν, a leaf) is a rare apple-green calebsey, found in Silesia, which owes its colour to the presence of the metal nickel; and Plastna is another scarce green semitransparent calebsey, but of a dark tinge, which, in the opinion of Mac Culloch, is coloured by chlorite.

The great supply of the figured agates of commerce is from Oldham, in the old Palatinate, about thirty miles east of Treves, and forty-five miles south of Coblenz. When they were used as buttons, knife-handles, &c, the trade was more extensive than at present. They are found in many parts of Scotland, especially at the Hill of Kinmond. There is also, perhaps, there is an amygdaloidal trap very full of fine specimens.

AGATHARCHIDES, a Greek writer on geography, a native of Cilics, in Asia Minor. He lived in the time of Ptolemy VI., called Philometor, king of Egypt, (who reigned from B.C. 141 to 143) and wrote numerous works on geography, and among them, one on the Erythraean Sea.

This work is now only known to us by extracts from the first and fifth books preserved by the Greek patriarch Philotheus, and some extracts in the compiler Diodorus. The works of Agatharchides doubtless contained a great deal of useful information, as we may fairly infer from the character of the fragments which remain. He is the earliest extant writer who attributed the rise of the Nile to the flood of the upper regions of that river (Diodorus, i. 11) he has left a very minute and curious account of the mode of working the gold mines which lay between the Nile and the Red Sea; and he is the first extant writer who has mentioned the gulph of Cadiz (Cumae Jardalis), a singular quadrupled peculiar to the African continent.

His remarks on the mode of hunting elephants, and on the inhabitants of the Red Sea coasts, are curious, and prove him to have been acquainted with the tropical regions, and to have travelled in the interior of Africa.

What remains of Agatharchides may be seen in Hudson's Minor Greek Geographers, vol. i. The description of the gold mines is also to be found in Diodorus, iii. 12.

AGATHEMERUS, a Greek writer who lived about the middle of the third century, and wrote a short treatise on
general geography. The Greeks seem to have applied themselves for many centuries from the time of Herodotus and Iberios to geographical inquiry, and the nation was at no period deficient in men who laboured to give precision to the science, and to arrange all the known facts in systematic treatises. What we are now labouring to do at the present day, and which we are about to publish, was never attempted before; though his work, as it now exists, is merely a collection of short heads, or rather a kind of syllabus for a set of lectures. There are two books extant, of which the second is so confused and contradictory, that critics are disposed to assign it to a pupil of the old master, but he knew how to render art into parts, and is seen in the second volume of Hudson's Minor Geographers. His first chapter contains a very short sketch of the history of Geography up to that time, with the names of those who had rendered the most eminent services to the science. His sixth chapter treats of the causes which brought about the discovery of the world, and seems to be derived from the doctrine of the sphere, &c. 

AGATHIUS is the generic name given by botanists to the trees, known in common language by the name of dammar and kauri pines. These plants belong to the natural order Conifera, from all other species of which they are known, firstly, by their broad, lance-shaped, leathery leaves, the veins in which are numerous and nearly parallel, diverging in a regular manner from the center of the stem; secondly, by their seeds having a wing on one side instead of proceeding from the end. The dammar pine (agathis lomthoflolia) or the pinus dammaroa of Linnaeus, is a large tree found on the very summit of the ranges of the mountainous districts of the Molucca Islands. When young it has something of the aspect of a young cedar, the wood of which it is said to resemble. It is occasionally cultivated in the hot-houses of curious persons; but is of little value except for its resin, which, when pure, is white, clear, and brittle as glass, but in time becomes amber coloured. Its timber is represented to be light and of inferior quality, wholly unfit for any situation exposed to wet, but answer­ing tolerably well for in-door purposes. The kauri pine (agathis Australis) grows only in New Zealand, in the forests of which it attains a considerable height, with a straight clean stem, which, from its lightness and toughness, has been found well calculated for the masts of ships. It is distinguished from the dammar pine by its narrower and more acute leaves, and by its more rapid mode of growth.

AGATHOCLES, a Syracusan of low extraction, who became ruler of Syracuse, and great part of Sicily. The principles of the nobility, and of the new wealthy classes which had been formed by the wealth of the city, were both of them against him. He was the son of a potter, and is said to have worked at his father's trade. He was remarkable for beauty, strength, and capacity for enduring labour. In the outset of life, he belonged to a band of robbers; afterwards he served as a private soldier in the Syracusan army, and was rewarded with the patron named Damas, who, being chosen general of Agrigentum, advanced him to the rank of chilarch, or commander of a thousand men. On the death of Damas, who bequeathed his great wealth to his wife, Agathocles married the widow, and became one of the richest citizens of Syracuse. In this state of his fortune, he distinguished himself by his eloquence in the assembly of the people. But his conduct now was as sedulous, as his former life had been prodigal. With wealth and popular power, he returned to his early habits, and committed continual acts of piracy against his countrymen. The constitution of Syracuse, as established by Timoleon, was democratical: but, in the outset of Agathocles' political life, a great party had been formed, led by Agatostatus, a personal enemy of his own, drove him into exile; and he retreated into Italy, where for some time he lived as a soldier of fortune. The restoration of democracy, and the banishment of Agatostatus and his friends, enabled him to return. The Carthaginians interfered in behalf of these new exiles; and a war ensued, in which Agathocles bore a distinguished part: but he was suspected of aiming at the tyranny, and was a second time compelled to quit Syracuse. In banishment he was employed in recovering the island of Cilauro, now the island of Lipari, and Carthaginian. After frequently defeating the troops of the former, he was recalled, under the pledge of an oath that he would attempt nothing against the democracy; and he was chosen general and protector, for the ostensible purpose of reconquering or putting down faction. Strong in the support of his own mercenary troops, united with some of the poorest and most desperate of the citizens, he proceeded to arrest the exchequer by means of making a temporary party at the critical moment, and gave up their adherents to the fury of his soldiery. In the massacre which took place, four thousand persons are said to have been murdered, and six thousand to have been expelled. The wives and children of the latter, those of whom we were unable to accompany the fugitives, fell victims to the soldiery.

Agathocles now professed to have fulfilled his duty in clearing the city of the oligarchy, and declared his intention of proceeding against the Carthaginians. He proceed ed against the Carthaginians, and on the 23rd of July, 214 B.C., he was defeated by his public enemy, the Romish general Publius, in a battle of the mountain of an island, now called Agatata, that is, ruler according to his own pleasure. He had risen as the champion of the poor; and he fulfilled his former promises by the abolition of debts and the distribution of lands. His whole career shows him to have been a bold bad man; but his government was able, and in quiet times not severe. It was not till the jealousy of the discerning rendered his situation difficult, or his unbounded ambition prompted him, that he incurred universal hatred by the Carthaginians, and was set at the head of the whole island; and succeeded in reducing all to submission. But the Carthaginians made a strong effort to crush him, and they nearly succeeded. He was defeated with great slaughter (b.c. 369), his subjects nearly perished of famine, and he shut himself up in Syracuse. In the following year he adopted the bold plan of carrying the war with his whole disposable force into Africa; but money was required for this purpose; and his contrivance, for raising it, seems borrowed from the habits of his early life. He offered his people for hire to the Carthaginians, who feared the hardships of a siege retire from Syracuse, and he sent an armed force after them to plunder and murder those who availed themselves of the permission. By this atrocious act he at once gained supplies, and revenged himself upon his enemies.

On his first landing in Africa, the bold measure of Agathocles appeared to prosper. He burnt his ships, that his soldiers might have no opportunity of retreat, and no hope but in victory. He advanced inland, took several towns, defeated a powerful Carthaginian force sent to oppose him, and threw Carthage itself into great alarm. Meanwhile the Carthaginians prosecuted in vain the siege of Syracuse: but a new danger threatened the rule of Agathocles, from the former Carthaginian allies, the Utica and Numidians. In 212 B.C. he sent a fleet against Carthage, and with the utmost haughtiness of both Carthage and Syracuse to invite the Sicilians to shake off the dominion of both. Agathocles returned home in haste, and reduced some of the revolted cities. But the forces of the rest, united under the command of his former adherents, surprised him in the city of Segesta; he was unanimously chosen king of Sicily, and his army in the Carthaginian army, proved too strong for him. Moreover, his presence was again required in Africa, where the Carthaginians had repaired their losses, and regained their ascendency. In this dilemma, he resorted to one of those infamous measures which disgrace his talents as a soldier and statesman. He saw the probability that the Syracusans might call in Deinocrates in his absence. A public festival took place shortly before his intended return to his African army. Being a man of popular manners, he affected to mix gaily in the midst, and by playing the sports with wine, encouraged them to open their hearts. By this insidious device, he ascertained who were his friends and who his enemies, and put to death the chief men of the latter, to the number of five hundred.

Whether in Sicily or Africa, the affairs of Agathocles never prospered in his absence. He was received on his return to the latter country by a mutiny among his troops, to which the consequence of his imposed duties of being liable in furnishing their pay. On that occasion his popular eloquence saved him: he harangued the soldiery, saying that they must get their pay from the enemy, and that the booty, like the victory, should be in common. But the necessity of furnishing all his soldiers with pay rendered all imprudences. He attacked the Carthaginians unconcernedly, and lost the battle, and a large portion of his men. He was compelled to retreat to his camp, where he saw that his rashness had set the soldiers against him, and he had reason to fear that they would renew the mutiny on account of the
agave, or the American aloe, is a plant which, though of mild growth, has a short cylindrical woody stem, which is terminated by hard, fleshy, spiny, sharp-pointed, bluish green leaves, about six feet long, and altogether resembling those of the arborescent aloe. Each of these leaves will continue to exist for many years, so that a small number have withered away by the time the plant has attained its full maturity. It is commonly supposed that this occurs only at the end of one hundred years; but this, like many other popular opinions, is an error: the period at which the active process of maturity varies, according to circumstances, from ten to fifty, or even seventy years. In hot or otherwise favorable climates, it grows rapidly and soon reaches at term of its existence; but in colder regions, or under the care of the gardener, where it is frequently practicable to attend to all the circumstances that accelerate its development, it requires the longest period that has been assigned to it. Having acquired its full growth, it finally produces its gigantic flower stem, after which it perishes. This stem sometimes is as much as forty feet high, and is surrounded with a multitude of branches arranged in a pyramidal form, with perfect symmetry, and having on their points clusters of greenish yellow flowers, which continue to be producible for two or three months in succession. The native country of the American aloe is the whole of America within the tropics, from the plains nearly on a level with the sea, to stations upon the mountains at an elevation of between fifteen and sixteen thousand feet. From these regions it has been transferred to almost every other temperate country; and in Italy, Spain, and Sicily, it has already combined with the date and the palm for a tropical appearance to European seacoast.

Independently of its beauty and curiosity, this plant is applicable to many useful purposes. Its sap may be made to flow by incisions in the stem, and furnishes a fermented liquor called by the Mexicans pulque; from this an agreeable ardent spirit, called rizo mercil, is distilled. The fibers of its leaves form a coarse kind of thread; the dried flowering stems are an almost imperishable thatch; an extract of the leaves is made into balls, which will slaughter like soap. Development both in vegetation and fructification are equally given to cattle; and finally the centre of the flowering stem split longitudinally is by no means a bad substitute for a European razor-strop, owing to minute particles of silica forming one of its constituents.

A person is said to be of age when he has passed those periods of his life at which he supposed to have acquired sufficient discretion to enable him to do certain acts and enter into certain contracts, of which, before these periods have arrived, he is presumed to be incapable by reason of the immaturity of his understanding. The common law of England appoints certain specific times in the life of a man or woman before either is permitted to form contracts and incur municipal obligations. Thus, at the age of twelve years, a man may take the oath of allegiance; at fourteen, which for many purposes is con-
considered the age of discretion, a person of either sex may choose a guardian, and may also, according to ancient authorities, be a witness in courts of justice; in the latter case, indeed, the rule is at the present day considerably relaxed, for children of much tenderer years are frequently permitted to give evidence, having been previously found competent by a jury or other competent tribunal. An oath; and a female at the age of twelve years, and a male at the age of fourteen years, may make a valid will of personal estate, if proved to have had sufficient understanding at the time to distinguish right from wrong; but these are not commonly put in issue by statute that no person under the age of twenty-one years shall make a will of lands. At the age of seventeen years, a person of either sex may be an executor or executrix.

With respect to marriage, a woman may by law consent to marry at the age of twenty-one years, and a man at the age of twenty-one years and a half; though, by several statutes, parties under the age of twenty-one years cannot actually marry without the express consent of their respective parents or guardians. [See Marriage.] The age of twenty-one years is, for most civil purposes, the full age both of a man and woman, at which period persons of either sex may enter into the entire possession of their real and personal estates, may manage and dispose of them at their discretion, and form contracts and enter into engagements, without the aid of a guardian or other person; a male cannot, however, be ordained a priest till twenty-four, nor be a bishop till thirty years of age. With respect to criminal offences, the law of England regards the age of fourteen years as the age of discretion, at which the infant begins to understand right and wrong; a person of either sex, therefore, who has attained that age is liable to prosecution and punishment for crimes. Under the age of seven years, a child is not in law responsible for its actions committed by him; but, above that age, and under the age of fourteen years, if it clearly appears that a child is conscious of the nature and wickedness of the crime he commits, he may be tried and punished for it. A very singular instance is related by a contemporary writer, in the year 1710, who, under circumstances of malice and premeditation, had killed his companion, and hidden the dead body with much care and cunning, and who was tried for murder, and found guilty. The case was afterwards considered by the twelve judges, who thought that the circumstance of hiding the dead body proved the fact of consciousness of guilt, and therefore a capacity of distinguishing good from evil, inconsistent with the presumption of innocence arising from the tender age of the child. This was the first time, probably, that an infant was a proper subject for capital punishment. Foster's Croum Cases, p. 72. For more particular information on the whole of this subject, see Infant.

AGE (Physiology). The term of human existence is divisible into different periods, each of which is distinguished by characters peculiar to itself. These characters, as far as they are external, are obvious to every one; but these external characters depend on internal states which are not obvious, and which have been discovered only by careful and persevering research. And the curious and interesting facts which those researches have disclosed, show that the different epochs into which life is divided are not arbitrary distinctions, but arise naturally out of constitutional differences in the system, dependent on different physiological conditions. The natural epochs of human life are six, namely, the period of infancy, childhood, boyhood or girlhood, adolescence, manhood or womanhood, and old age. The space of time included in the first four of these periods is called the period of years, the last two years, called the period of years, is a definite change in the system uniformly takes place, in consequence of which the peculiarities which distinguish one period give place to those which characterise the succeeding. Thus the embryo, at its birth, is commonly a headless infant, commencing at butler, and extending to the end of the second year. The period of time at which the first dentition is completed: the period of childhood, commencing at the close of the second year, extends to the termination of the seventh or eighth year, the period of boyhood, in consequence of the growth of the period of boyhood or girlhood extends from the seventh or eighth year to the commencement of the age of puberty; that is, in general, in this country, in the female, from the twelfth to the fourteenth year, and for the male, from the fourteenth to the sixteenth year: the period of adolescence extends from the commencement of the period of puberty to the twentieth year of the female, and the twenty-fourth of the male: the period of womanhood extends from the twentieth, and of manhood, from the twenty-fourth year, to an age neither determined nor determinable with any degree of exactness; because the point of time at which mature age lapses into old age differs in every individual. It differs in many cases by a considerable number of years; and it is not a thing accounting for natural or constitutional development of early infancy and childhood; according to regiments, exercise, occupation, physical and mental, and the several other circumstances included under the general term of "life."

It is an observation familiar to every one, that some persons are older at fifty than others are at seventy, while instances every now and then occur in which an old man who reaches his hundredth year retains as great a degree of physical efficiency as the body of those who were just at their fiftieth year.

The period extending from the age of thirty or forty to that of extreme old age is then the only variable period in the term of human existence; the only period not fixed by limits which is beyond the power of man materially to extend or abridge—a fact accounting with the most interesting practical suggestions.

The changes which take place in the system at the different epochs of life consist of changes in the physical condition of the body, which will be useful for illustration. These changes are intimately connected with, and are mainly dependent on the operation of a principle of consolidation, the influence of which, commencing at the first moment of existence, continues, without intermission, until the close of life. The structure of the body is, at this period, in a state of fluidity; and next, from a soft and tender solid, into a solid which slowly, imperceptibly, but nevertheless uninterruptedly, increases in firmness and hardness, to the ultimate state of a bony structure.

When first the human embryo becomes distinctly visible, it is almost wholly fluid, consisting only of a soft, gelatinous pulp. In this gelatinous pulp solid substances are formed, which gradually increase and are fashioned into organs. The organs are now to become definitely fixed, but, in the progress of their development, constantly acquiring a greater number of solid particles, the cohesion of which progressively increases, the organs at length become dense and firm. As the solid or rigid augment in bulk and density, bony particles are deposited, sparingly at first and in detached masses, but accumulating by degrees: these, too, are at length fashioned into distinct osseous structures, which, extending in every direction, until they touch at every point, make the body an organ connected with the others, of the system. This bony fabric, like the soft solid, tender and yielding at first, becomes by degrees firm and resisting, fitted, as it is designed, to be the mechanical support of the body, and the defence of all the vital organs.

Thus the organs of the system are thus, extending in every direction, and everywhere increasing in compactness, the progressive consolidation of the body is equally manifest in all the tissues which are composed of the cellular membrane, in which, as in all those which possess a fibrous nature. In membranes, the ligaments, the tendons, the cartilages, gradually increase in firmness and elasticity, and proportionally diminish in flexibility and extensibility; and this change takes place, to a considerable extent, in the muscular for are also, as is manifested from the toughness of the flesh of animals that are used for food, the degree of which every one knows is in proportion to the age of the animal; and from the conversion in extreme old age, in many parts of the body, of muscle into tendon, a denser material being substituted for it.

The steady and increasing operation of the principle of consolidation is still more strikingly manifest in the deposition, as age advances, of bony matter in tissues and organs to which it does not naturally belong, and the functions of which it immediately impairs and ultimately destroys. The textures in which these osseous deposits most commonly take place are membranes, tendons, cartilages, and the coverings of the viscera, but above all the coats of the blood-vessels. These, on the contraction of which the blood-vessels, and moveable organs become firm, rigid, and immovable. But even when not converted into bone, several of these structures lose their flexibility with advancing age, and acquire an increasing degree of rigidity manifest in all the parts of the apparatus of locomotion; in the joints, the mechanical contrivances for facilitating motion, and in the muscular fibre, the generator of the power
by which motion is produced. The joints in old age are less pliable, less elastic, and more rigid than in youth; first, because the ligamentous and cartilaginous structures of which they are composed are less mobile and firm; and secondly, because the only motion which lubricates them, and which renders their motions easy and springy, is secreted in less quantity, and of inferior quality. Induration and proportionate deterioration take place then in the muscular fibre, the motive power of the joint, from the diminution of the gland, by which the operation of the motive power is facilitated: and consequently the movements become slower, feebler, less steady, less certain, and less elastic.

But among all the changes induced in the body by the process of growing old, the most remarkable, and generally the most injurious, is a diminution of the motive power of the heart. This is the essential thing, the instrument by which the action of the motive power is accomplished: and consequently the movements become slower, feebler, less steady, less certain, and less elastic.

The capillary arteries, the channels, and architects of the system, by the agency of which all the structures are built up, and all the parts of the body grow and are developed, are numerous and active in the early stages of life, while they are carrying on and completing the organization of the frame. But from infancy to childhood, from childhood to youth, and from youth to maturity, to old age, the number and the activity of these vessels progressively diminish. Their coats, like other soft solids, increase in density and rigidity; their diameter contracts, and their movements become completely impeded and ultimately disappear. The diameter of the capillary veins, on the contrary, enlarges. The coats of the veins, originally thinner than those of the arteries, instead of thickening and contracting, seem rather to grow thinner and more dilatable; hence their movements, their prominence, and their more rapid course, and their greater capacity. At the two extreme periods of life the quantity of blood contained in these two sets of vessels is completely inverted. In infancy, the proportion of blood contained in the capillary arteries is greater than in the capillary veins; in youth, the capillary veins contain a larger portion of blood; and, as the diminution of the quantity in one part of the system is accompanied by a proportionate increase in the other, the quantity of blood in the whole system remains stationary at the period of maturity; why it diminishes in bulk as age advances; why a plethoric state of the system affects the arteries in youth, the veins in age; why hemorrhage, or a flow of blood, is apt to proceed in the young from the capillary veins, and in age from the capillary arteries. The growth of the heart does not keep pace with the extension of the sanguiferous system, nor does its force increase with the augmenting density and resistance of the solids; hence there is a disturbance of the balance between the forces of propulsion and of extension which increases with advancing age; the diminished energy of the heart being indicated by the languor and slowness of the pulse, often not exceeding fifty pulsations in a minute, and sometimes sinking below this. Hence, not only is the blood less mobile to the several organs, but that which is sent is less completely acted upon by the air in respiration on account of the diminished quantity which is transmitted through the pulmonary system of vessels; hence, the diminution of all the secretions and excreta, from the imperfect nature of the function of digestion, the source of the materials from which the blood itself is prepared and its losses replenished.

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Within the whole, then, it is clear that two great changes take place, in the physical condition of the body in the progress of age, and in the rate and quantity of the fluids, both of the entire mass contained in the system, and of the proportionate quantity contained in each organ; and, secondly, a progressive augmentation and induration of the vessels, which diminishes the elasticity of the body and makes it uniformly combined a no less important change in its vital action. Progressively and proportionally as the solid parts increase in density and rigidity, they decrease in pliability and mobility; that is, they are less sensitive to the influence of stimulants, and the power of contraction resident in the muscular fibre is less excitable. Now the knowledge of this two-fold modification of the system suggests practical principles of the greatest importance in the management of health, in the prevention of disease, in securing the attainment of perfect maturity, corporeal and mental, and consequently in promoting a general extension of the term of life.

It has been shown, that in the human infant by far the greater proportion of its body is not surrounded by the protective envelop of fat, and that state of the system is characterized by an extreme degree of irritability and mobility. The capillary arteries, especially, are not only more numerous in this age than in any other, but they are also far more irritable: far more easily and dangerously exciting, producing first irritation in the case with the capillary arteries of the stomach and intestines; with those of the lungs; with those of the external skin, and with those of the spinal cord and brain; and a consideration of the manner in which these vessels are acted on, far exceeds, by far, the effect of the initial and final products on those more important organs. As the capillary vessels from youth to maturity, to old age, the number and the activity of these vessels progressively diminish. Their coats, like other soft solids, increase in density and rigidity; their diameter contracts, and their movements become completely impeded and ultimately disappear. The diameter of the capillary veins, on the contrary, enlarges. The coats of the veins, originally thinner than those of the arteries, instead of thickening and contracting, seem rather to grow thinner and more dilatable; hence their movements, their prominence, and their more rapid course, and their greater capacity. At the two extreme periods of life the quantity of blood contained in these two sets of vessels is completely inverted. In infancy, the proportion of blood contained in the capillary arteries is greater than in the capillary veins; in youth, the capillary veins contain a larger portion of blood; and, as the diminution of the quantity in one part of the system is accompanied by a proportionate increase in the other, the quantity of blood in the whole system remains stationary at the period of maturity; why it diminishes in bulk as age advances; why a plethoric state of the system affects the arteries in youth, the veins in age; why hemorrhage, or a flow of blood, is apt to proceed in the young from the capillary veins, and in age from the capillary arteries. The growth of the heart does not keep pace with the extension of the sanguiferous system, nor does its force increase with the augmenting density and resistance of the solids; hence there is a disturbance of the balance between the forces of propulsion and of extension which increases with advancing age; the diminished energy of the heart being indicated by the languor and slowness of the pulse, often not exceeding fifty pulsations in a minute, and sometimes sinking below this. Hence, not only is the blood less mobile to the several organs, but that which is sent is less completely acted upon by the air in respiration on account of the diminished quantity which is transmitted through the pulmonary system of vessels; hence, the diminution of all the secretions and excreta, from the imperfect nature of the function of digestion, the source of the materials from which the blood itself is prepared and its losses replenished.

Cold acts upon the lining membrane of the air-passages of the lungs, as injuriously as improper diet upon the mucous surface of the alimentary canal; and it also acts most energetically and deleteriously upon the whole external surface of the skin. The newborn infant has been kept for months in a constant and unvaried warmth. Both its external and its internal surfaces have been completely shielded from the contact of foreign bodies. But at the moment of birth, when its temperature is lower than any other, it is more exposed to agents, to the influence of which it is acutely sensitive. Air surrounds the external skin and rushes to the lung and expands it; cold acts simultaneously and powerfully on both organs. If the cold be severe, or if the change of temperature be great enough to extinguish the life, the mother should never forget that a degree of cold which the infant can bear with impunity may excite a mortal inflammation in the infant; and that an intensity of cold which may only invigorate the adult may kill the child. Were an accurate record kept of the number
of children annually destroyed in England by improper exposure to cold, the sum would fill the country with dis- may. The proper management of the period of infancy consists essentially in causing the infant to subsist on the milk of the mother only, at least during the first month; in keeping it in an equal and moderately warm temperature; in surrounding it by night as well as by day, when asleep as well as when awake, by a large bulk of fresh air; in fre- quently changing the child's shirt, undergarment, and bed, with the warmer, then thin, and to the latter months of the period, in perfectly cold water, followed immediately by vigorous friction.

There is one caution in relation to medicine which cannot be too generally kept in view. The same state of the system which renders the infant so susceptible to the influence of ordinary physical agents, renders it at least equally susceptible to the influence of irritable drugs; and especially of those which act primarily on the mucous surface of the alimentary canal or on one of the opposite class of medicines it may be truly said, that every preparation of opium, even in the very minutest dose, is, in the early period of infancy, highly dangerous. Opiates act on the alimentary canal most injuriously, banefully, and many is the new-born infant whose life is suddenly cut short by quack medicines, soothing as they are called, (and soothing indeed they are!) which often contain a concentrated dose of a powerful narcotic, and which, according to the dose, excites either an inflammatory action of the capillaries of the brain, or an accumulation of blood in the cerebral vessels, one or other of which co-operating with the irritable state of the system, for the quieting of which the opiate was given, produces the quiet of death.

From the seventh month to the end of the second year, the consolidation and development of all the tissues and organs proceeds with rapidity. The process of ossification advances: the soft solids grow firmer: the muscles enlarge in bulk and increase in strength; the brain especially becomes more developed; the teeth are cut and the bones get harder and more extended: consequently, sensation not only increases in acuteness and exactness, but embraces a wider range; hence perception becomes more perfect; the phenomena of mind appear; speech commences; affection is generated; the laws of the animal world, body and soul, are acquired, each of which events introduces into the economy a new power which ever afterwards exerts over it a prodigious influence for good or for evil, for pleasure or for pain, for health or for sickness.

Secondary childhood, the brain, the spinal cord, the bones, the muscles, and the other soft solids, progressively acquire bulk, cohesion, firmness, and strength. All the capillaries of the system still continue exceedingly active and highly irritable. For the support of their action, and the care of this new element, the nerves and happiness of the child are more acute, and the occurrence of an organ that is not still to be completed, and the magnitude of which is not to be augmented. Aliment is the material by which these results are to be effected, and the consequences of privation at this period are truly deathly. Infants are often induced to halves, by being forced on one occasion to take half an ounce at a time, but the physical and mental constitutions are irreparably injured. From the beginning to the end of this period every effort should be directed to the development and integration of the intellectual life, as double and in connection with the bodily power, as yet the development of the intellectual is of little consequence. The health, the strength, the longevity, the physical, the intellectual, the moral qualities, the usefulness or the mischievousness, the happiness or the misery of the individual, are established, in a word, the event of these two periods of human existence. For this reason we have endeavoured to direct attention to their paramount importance, and to the value of that knowledge which teaches in what their proper management consists. We shall have occasion to return to this subject, but let us state in detail the regimen proper to these earlier, as well as to the more advanced stages of human life. In the mean time we earnestly intreat the attention of women to subjects of this class. The health and life, and what is of much more importance, the happiness of their children are far more deeply involved in the soundness of the knowledge they acquire on subjects of this kind, than they have hitherto been taught to believe.
fourth or following pair, have commonly three or four, and sometimes even five branches. In the same manner the number of these fixed and permanent, or of what the animal's life, beyond which period they follow no fixed rule, though they still continue to increase in number, particularly towards the summit of the horn, where they are often grouped in the form of a conoid, and in this state they are termed antlers. The following and others of this genus, present similar phenomena; the number of the antlers increases according to certain fixed rules up to a certain period, beyond which the age can only be determined, as in the stag, by the comparative size and development of the main and side shaw, or of the antlers grow. In the former species, the pricketts of the second year are replaced by horns bearing two antlers, and already beginning to assume the palmed form which distinguishes them from the antlers of most other species. Afterwards the main increases breadth, and assumes an indented form on the superior and posterior borders: these are the fourth horns, which are shed in the animal's fifth year, and are replaced by others in which the palm is shown or subdivided irregularly into distinct parts, so that the horns of old males frequently assume a great diversity and singularity of form. From this period the horns begin to shrink in size, and are even said to end in becoming simple pricketts as in the first year.

The horns of oxen, sheep, goats, and antelopes, which are hard and permanent, are of a very different form, and grow in a different manner, from those of the deer kind. These, as is well known, consist of a hollow sheath of horn, which covers a bony core or process of the skull, and grows from these, retaining its form, and the sheath of horn, which is the number of which is a sure indication of the animal's age. The growth of the horns in these animals is by no means uniform through the whole year, but the increase, at least in temperate climates, takes place in spring, after which there is no further increase till the following spring. In the cow kind, the horns appear to grow uniformly during the first three years of the animal's life; consequently, up to that age they are perfectly smooth and without wrinkles, but afterwards each succeeding year adds a ring to the base of the horns. At the age of three years the horn is determined by allowing three years for the point or smooth part of the horn and one for each of the rings. In sheep and goats the smooth or top part counts but for one year, as the horns of these animals show their first knob or ring in the second year of their age; in the antelopes they probably follow the same rule, though we have very little knowledge of their growth and development in these animals.

There are very few instances in which the age of animals belonging to other classes can be determined by any general rule. They are capable of being estimated by observation of the form and wear of the bill; and some pretend to distinguish the age of fishes by the appearance of their scales, but their methods are founded upon mere hypothesis and entitled to no confidence. The age of the whale is formed by the whole number of laminae of whale-bone, which increase yearly, and, if observation can be relied upon, would sometimes indicate an age of three or four hundred years for these animals.

AGE OF TREES. Every thing connected with the growth of timber-trees, their production, and the causes which conduce to their decay, bears so directly upon points not only of general interest, but of great practical importance, that we have thought it advisable to devote an article to its separate consideration.

Timber-trees are subject to the laws of mortality, and, in many cases, have the period of their existence determined by nature with as much exactness as that of an insect. But at the same time, not only their structure, but their vital actions are so peculiar, that little analogy can, in any thing like a proper degree, be found in any other part of the animal world, and a very large proportion appear to be capable of an almost indefinite period of existence, if it were not for accidents and disease, independent of old age. It is chiefly to annual and biennial plants, that what may be called a precise period of duration is fixed; a period determined by the production of their fruit, and not capable of being prolonged beyond that event, except by artificial means. Dismissing all such from our consideration, the remaining classes of vital animals present the same perfect image, whether herbaceous, or shrubby, or arborescent, consist of plants which may be classed under two principal modes of growth.

One of these modes is to increase, when young, in diameter, rather than in length, until a certain magnitude is obtained, and then to stop upon a stem, the diameter of which is never materially altered. The addition of new matter to a trunk of this kind takes place by the insinuation of longitudinal fibres into the inside of the wood near the centre; on which account such trees are called Endogenous; they also bear the name of Monocotyledons.

The other mode is, from the beginning, to increase simultaneously in length and diameter, but principally in length. The addition of new matter to a trunk of this kind takes place by the insinuation of longitudinal fibres into a space between the old wood and the circumference; on which account such trees are called Exogenous; they also bear the name of Dicotyledons.

Some modifications of these two modes are known to exist, but we cannot readily confine the subject if they were adverted to on this occasion.

To the first of these classes belong the palm-tribe, and some other tropical trees. There is scarcely any well-attested evidence of these plants ever acquiring any considerable age. It has, indeed, been said that the Pia or coco-nut palms may be from 600 to 700 years old, and that others probably attain to the age of something more than 300 years. But the method of computing the age of palms, which is either by the number of rings externally visible on their trunks, or by the去年 of the mash or frond, and of the oldest specimens, the age of which is unknown, with young trees of a known age, is entirely conjectural, and not founded upon sound physiological considerations; besides which, the date-palm, which is best known of all tropical trees, could not attain a great age; the Arabs do not assign it a greater longevity than from two to three centuries. Independently of this, the mode of growth of such endogenous trees as palms seems to preclude the possibility of their existing beyond a certain age, since the extent of the wood in the stem, or by comparing the oldest specimens, the age of which is unknown, with young trees of a known age, is entirely conjectural, and not founded upon sound physiological considerations; besides which, the date-palm, which is best known of all tropical trees, could not attain a great age; the Arabs do not assign it a greater longevity than from two to three centuries. Independently of this, the mode of growth of such endogenous trees as palms seems to preclude the possibility of their existing beyond a certain age, since the extent of the wood in the stem, or by comparing the oldest specimens, the age of which is unknown, with young trees of a known age, is entirely conjectural, and not founded upon sound physiological considerations; besides which, the date-palm, which is best known of all tropical trees, could not attain a great age; the Arabs do not assign it a greater longevity than from two to three centuries. Independently of this, the mode of growth of such endogenous trees as palms seems to preclude the possibility of their existing beyond a certain age, since the extent of the wood in the stem, or by comparing the oldest specimens, the age of which is unknown, with young trees of a known age, is entirely conjectural, and not founded upon sound physiological considerations; besides which, the date-palm, which is best known of all tropical trees, could not attain a great age; the Arabs do not assign it a greater longevity than from two to three centuries.
The famous sweet-chestnut trees on Mount Ætna, especially those called the Castagna de' Cento Cavalli, 180 feet in circumference at the bottom of the trunk, de Sta. Agatha, seventy feet in circumference, and della Nave, sixty-four feet in circumference, must be of high antiquity; but nothing precise is known upon this point, and it is almost certain that the first mentioned has been in reality formed of five or six trunks grown together.

Equally unknown is the age of an immense oriental plane tree now growing in the valley of Bukhurdar near Constantinople, which is 150 feet in circumference, with an internal cavity eighty feet in circumference.

The walnut sometimes attains a prodigious size, consequently a great age. Scamozzi, an Italian architect, mentions his having seen at St. Nicolas, in Lorraine, a single plank of its wood twenty-five feet wide, upon which the Emperor Frederick III. had given a sumptuous feast.

Eight olive trees still exist in the Garden of Olives at Jerusalem, which can be proved by historical documents to have existed anterior to the taking of the city by the Turks, and consequently to be at least 800 years old.

Of ancient yews several authentic instances can be named. At Ankerwyke House, near Staines, is a yew older than the meeting of the English barons at Runnymede, when they compelled King John to grant the Magna Charta.

[The Ankerwyke Yew.]

This tree, at 3 feet from the ground, measures 9 feet 3 inches in diameter; and its branches overshadow a circle of 207 feet in circumference. The yews of Fountain's Abbey, in Yorkshire, are probably more than 1200 years old, and to others an age of from 2500 to 3000 years has been assigned.

Even this degree of antiquity is, however, much less than that of the Baobab trees of Africa, estimated by Adanson at 5150 years; and the deciduous cypress of Chapultepec in Mexico, which the younger De Candolle considers still older.

The way in which the age of some of these specimens has been computed is twofold: firstly, by comparing them with other old specimens, the rate of growth of which is known; and secondly, by cutting out a portion of their circumference and counting the number of concentric rings that are visible. For in exogenous trees the woody cylinder of one year is divided from the succeeding one by a denser substance, which marks distinctly the line of separation of the two years.

The first of these methods is sufficiently correct to give at least an approximation to the truth, and the latter would be absolutely correct, if one could be quite sure that observers provided against all possible causes of error. But it has been shown, (see Dr. Lindley's Introduction to Botany, p. 65.) that in consequence of the extreme inequality in thickness of the annual layers of wood on opposite sides of a stem, a person who judged of the whole age of a tree by the examination of the layers of the stunted side only, would commit errors to the amount of sixty per cent, and more. It is by no means impossible that the great age assigned to the deciduous cypress and the Baobab may be connected with an error of this nature.

In the course of the inquiry into the method of computing the age of ancient trees, a discovery has been made of some importance to timber growers. Inasmuch as it shows that those who plant for profit alone should not allow their trees
to grow beyond a certain number of years, varying according to species: for it has been found that so far are exogenous trees from continuing always to increase in diameter at the same rate, that every kind diminishes in its rate of growth after a certain age;—thus the oak, for example, between its fortieth and its sixtieth year, the elm after its fiftieth, the spruce fir after its fortieth, and the yew probably after its sixtieth. With reference to this subject, Professor de Candolle has constructed a table of rate of growth, which we subjoin.

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<th>Sequence</th>
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It is very much to be wished that observations of this kind should be multiplied, as they would probably lead to some very important conclusions, and, at all events, would throw light upon a part of botany that is at present very obscure. If, however, would be of little use to find the diametrical measurement of trees less than 100 years old.

AGES OF THE WORLD. In the mythology of the Greeks and Romans, the history of the world was divided into four ages, the golden, the silver, the brazen, and the iron; as for instance, Hesiod in his poem entitled *Works and Days*, and by Ovid, in his *Metamorphoses*. The golden age, when Saturn reigned, is represented as having been that of perfect innocence and happiness; from which the others have gradually degenerated more and more,—the iron age, or that which now subsists, being the most wicked and miserable of all. Sometimes these ages are spoken of as merely so many successive periods in the history of Italy. Saturn having been driven out of heaven by his son Jupiter, is supposed to have sought an asylum in that country, where, in return for the protection he received from King Janus, he taught him and his people agriculture, and the other arts of cultivated life. According to this latter mode of telling the story, it will be observed, the golden age is represented as consisting in the triumph of civilization over previous barbarism; whereas the other version seems intended to indicate that the primeval state of man was that in which he enjoyed the greatest felicity and purity, and that he has been neither happier nor improved by what is called civilization. The two statements, therefore, may be taken as expressing two opposite theories or opinions which have divided speculative upon this subject down even to our own day. The disagreement among the fabulists, however, is only with regard to the original condition of man: it seems to have been admitted on both sides that a gradual declension both of the happiness and virtue of the world has been going on ever since the age of gold. The golden age is that at which the most complete pictures have been drawn; indeed it may be said to be the only one of the four of which the description is at all distinct. The age of iron was deemed to have commenced long before Hesiod's day, who lived probably at least twenty-six hundred years ago; it was, in fact, merely a general name for the existing order of things, as distinguished from some imaginary previous state. But neither that immediately preceding state, designated the age of brass, nor its forerunner, the age of silver, is to be found discriminated in the poetic painting by anything more than some slight varieties of shade. Of the golden age, when universal harmony prevailed, the descriptions, and the bounteous earth yielded her increase untilled, we have various descriptions from the pens of modern as well as of ancient poets. The reader of Italian poetry will recollect in particular the celebrated chorus at the end of the first act of Tasso's *Aminta*, and the imitation of it at the end of the fourth act of Guarini's *Pastor Fido*.

AGENEOISES, in Ichthyology, a genus of abdominal *Malacopterygious* fishes, separated from the silures by Lacépède, and containing two species, both from the fresh-water lakes and rivers of Surinam.

AGENT. An agent is a person authorized by another to do acts, or make engagements in his name; and the person who so authorizes him is called the principal.

An agent cannot be appointed by a corporation principal by deed, otherwise than by deed; nor can an agent be appointed by a corporation aggregate (unless it be for certain ordinary and inferior purposes) otherwise than by deed: and for the purpose of making leases and other acts specified in the first, second, and third sections of the state law, the authority of the agent is required to be in writing. In all other cases no particular form is necessary: in commercial affairs agents are most usually commissioned by a letter of orders, or simply by a retainer; but a verbal appointment is quite sufficient; and even the most unlettered of those being employed to do any business whatever for another will create between the parties the relation of principal and agent.

An agent's authority (unless it is an authority coupled with an interest, such as a power of attorney granted as a security for a debt) may, in general, be revoked by the principal at any time. It also ceases upon his death or bankruptcy.

There are numberless kinds of agents, answering to the endless diversity of modes in which one person may be employed to act for another. Many of these are known by specific names, such as bailiffs, factors, brokers, &c. The particular rights, duties, and liabilities of each of these will be found under their respective heads. The object of this article is to state the general principles of law, which are applicable equally to all.

Whenever the relation of principal and agent exists between two persons, the law fixes upon them certain rights and duties: and, in the event of disagreement, or, (as is sometimes differently expressed,) the law implies a certain contract between the parties, and points out what shall be the consequences of that contract with respect to third persons.

In the first place, we shall explain what are the rights and duties with respect to one another, resulting from the relation of principal and agent.

And secondly, what are the rights and duties with respect to third persons, resulting from the relation of principal and agent, or, in other words, what is the effect of the contract implied by law between them, as far as regards third persons.

I. First, of the relative rights and duties of principal and agent.

The first great duty of an agent is to use faithfully, and in its full extent, the authority which has been given him.

An agent's authority is said to be limited, when he is bound by precise instructions; and unlimited, when he is not so bound. Where his authority is limited, an agent is bound to adhere strictly to his instructions in every particular. Thus, if instructed to sell, he has no right to barter; nor if instructed to sell at a certain price, is he authorized to take less. When the agent's authority is not limited by precise instructions, his duty is to act in conformity with what may reasonably be presumed to be the intentions of his employer. And in the absence of all other means of ascertaining what these intentions are, he is to act for the interest of his principal, according to the views of a prudent man in the management of his own business. Thus, if he is authorized to sell, and no price is limited by
his instructions, it should be his endeavour to obtain the best price which the goods are fairly worth. If there have been other transactions of the same nature between the parties, it is to be presumed that the principal intends that the same mode of dealing should be pursued, which, in former cases, he had either prescribed or approved of.

In mercantile transactions it is a rule of universal application, that, in the absence of other instructions, the principal must be presumed to intend that his agent should follow the course of dealing of the particular business in which he is employed. This, then, if the agent proceeds against the interest of his duty to pursue; and he will, in all cases, be justified in so doing, even though, under the particular circumstances, he might have acted otherwise to the greater advantage of his principal.

Thus a factor of common right is to sell for ready money, but if he is employed in a dealing or trade where the usage is to sell upon credit, he will be authorized in selling to a person of good credit, and giving such time as is reasonable and usual.

An authority is always to be so construed as to include all necessary or usual means of executing it with effect. An agent is, therefore, authorized to do all such subordinate acts as are either requisite by law, in order to the due performance of the sovereign objects for which the principal is necessary to effect it in the best and most convenient manner, or are usually incidental to it in the ordinary course of business.

This is the duty of an agent employed in the receipt or discharge of goods, to take care that the custom-house duties are satisfied, and the proper entries made; and he will be authorized in making any advances, as well for such incidental charges as warehouse-room, as for any other expense necessary or usual for the preservation of the property.

2. The next duty of an agent is to exercise a proper degree of diligence and skill. He is required to use, in the concerns of his employer, the same diligence and care which would be expected from a person employed in a profession. The principal is presumed to bind his agent, without any particular instructions, to take every precaution ordinarily used for the safety and improvement of property intrusted to him.

He is also expected, in common with every professional man, who has himself out as ready, for a proportionate remuneration, to transact any particular kind of business for another,—to possess and exercise such a competent degree of skill and knowledge, as may in ordinary cases be adequate to the accomplishment of the service undertaken.

An agent may not, even where he is authorized by his authority, either express or implied, or if he does an act within his authority, but with such gross negligence or unskilfulness that no benefit can accrue from it, the principal may, at his option, either reject or adopt what he has done; or, if it does not necessarily affect the principal, and he is bound, without any particular instructions, to take every precaution ordinarily used for the safety and improvement of property intrusted to him.

Thus, if an agent puts out his employer’s money at interest without his authority, or if a factor, employed to purchase, deviates from his instructions in price, quality, or kind; or if he purchases goods which he might at the time have discovered to be unmarketable, the principal may and may aver the transaction; but if, in the first cases, he knowingly receives the interest, or, in either of the others, if he deals with the property as his own, he adopts the act of the agent, and takes upon himself all responsibility for the consequences.

But if he does not afterwards either expressly or impliedly adopt the act, the whole hazard of it lies with the agent, even though he did bona fide, and for the interest of his employer. Any profit or advantage that may accrue from it is to be considered as having been obtained by the agent for himself, and is bound to make it good to him. An agent is likewise answerable to his principal for all damage occasioned by his negligence or unskilfulness. This responsibility applies in all cases, not only to the immediate consequences of his misconduct or neglect, but likewise to all such losses, as, but for his previous misconduct or neglect, would not have occurred: such, for instance, as the destruction of goods by fire in a place where he had improperly suffered them to remain; but it does not extend to such losses by fire, robbery, or otherwise, as are purely accidental, and happen by no design of his own; and his responsibility extends to the whole amount of the damage suffered by the principal, either by direct injury occasioned to his own property, or by his being obliged to make reparation to others.

If an agent’s negligence is so gross, or his deviation from his authority so material, as to amount to a breach of the duty created in law, by the relation of principal and agent, or (which is the same thing) to a breach of the contract, which (if none exist) the law, as we have before seen, will imply between them, the agent is liable to an action for such breach of duty or of contract; whether any injury has been sustained by it or not; but if no injury has been in fact sustained, the damages will be merely nominal.

3. The third general duty of an agent is to keep a clear and regular account of his dealings for his principal. This accounts for all the money received, the goods, including as well what he has received as what he has paid; to communicate the results from time to time; and to account when called upon, without suppression, concealment, or overcharge.

An agent is not in general accountable for money until he has actually received it, unless he has, by improper credit, or by other misconduct or neglect, occasioned a delay of payment. But an agent acting under a commission Del credere, that is, one who has undertaken to be surety to his principal for the performance of his duty, is, by the very nature of the default, accountable for the debt; and in all cases where an agent has actually received money on behalf of his principal, he is bound to take care of it according to the general rules which regulate his conduct; and if any loss is occasioned by his personal error or negligence, the agent’s conduct be warranted by his instructions, or the usage of trade, be bound to make it good; if a stranger, for instance, calls upon him by a written authority to transfer the money in his hands, and the authority is a forgery, he will remain accountable for all that is transferred in that way.

The principal is in general entitled not only to the bare amount of what has been received by his agent, but to all the increase which has accrued to the property while in his agent’s possession; therefore, accountable for the interest, if any has actually been made, upon the balance in his hands; and likewise for every sort of profit or advantage which he may have clandestinely derived by dealing or speculating with the effects of his principal.

4. It is also the duty of an agent to apprise his principal, with all convenient expedition, of all material acts done or contracts concluded by him.

5. An agent, confidentially intrusted and relied on for counsel and direction—as an attorney, for instance—is rarely permitted to partake in the profits which he derives from his management, especially if it is a grant of the property which he has been employed to manage; and it is also a general principle, that an agent cannot make himself an adverse party to his principal.

If he is employed to sell, he cannot make himself the purchaser: such a transaction is considered in equity, unless it be made clearly to appear that the principal gave his express consent to it, and that the agent furnished him with all the knowledge he himself possessed: and in such manner, a party employed by his principal, and acting in his own right, he may, independently of the principal, sell the property, without imputing any misconduct to himself; he is not to be liable because he subsequently purchased the goods, and sold them at a higher price; but he may be charged with his principal, for such profit or advantage as he derived from his management of the property; and in like manner, a factor or factor employed by his principal, and acting in his own right, is not to be chargeable with the principal, for any profit or advantage which he derived from his management of the goods.

We now consider what are the obligations of the principal with respect to his agent; in other words, what are the rights of an agent.

1. The first right of an agent is to his commission; that is, the remuneration to be paid to him in return for his services. The amount of commission is sometimes determined by parties themselves; and sometimes regulated by the usage of trade; and in some few cases, as of brokerage for the procuring of loans, &c., the amount of commission is limited by act of parliament.

An agent has no right to commission for doing an act not within his authority, and he is not entitled to commission adopted by his principal. He may also forfeit his right to commission by misconduct; as, if he keeps no account; if he makes himself an adverse party to his principal; or if, in consequence of his negligence or unskilfulness, no benefit accrues to the principal from the service performed by the agent.

2. Besides his commission, an agent is entitled to be reimbursed all such advantages made on behalf of his principal, as are justified by his authority, whether express or implied, and are subsequently sanctioned by his principal. And cases may sometimes occur of urgent danger, without means of refer-
ring for instructions, in which an agent, acting for the best, is justified in making advances without particular directions, and under exigencies not provided for by regular rules of business. Thus if, on account of the lateness of the season, or other good cause, he is without orders the case, he is entitled to charge his principal with the premium, and in such a case even the assent of the principal would be inferred from very slight circumstances. But an agent is not entitled to be reimbursed payments that are merely voluntary and gratuitous; nor occasions necessitated by his own negligence or unskilfulness.

An agent has also, as a further security, a lien upon the property of his principal; that is, a right to retain it in his possession in the nature of a pledge for the satisfaction of any of the agent's claims. A particular lien is a right to retain the thing itself in respect of which the claim arises. This right is very extensively admitted in our law, and is possessed by bailies in general, and consequently by all agents. General lien is a right to retain any property of the principal which may come into the agent's possession in the regular course of business. This, being an extension of the general right, exists only where it is created by express contract, the previous dealings of the parties, or the usages of trade. Factors, packers, where they are in the nature of factors, insurance-brokers, and bankers, have, by usage, a general lien in their respective employments.

This right may in general be exercised in respect of any claim which the agent has for reimbursement, or the payment of any debt incurred by the agency; or he may have acquired in the due execution of his authority; but it does not extend to demands arising from transactions not within his course of dealing as such agent. An agent can, therefore, have no lien for debts due to him as agent for a third person, unless he shall serve the respective parties with notice of the claim which originated before the commencement of his agency.

An agent's lien does not attach unless the property is actually in his possession; a consignee has, therefore, no lien on goods consigned to him, if the consignor stops them before they come into his hands; nor unless it has come into his possession in the ordinary course of business; he has consequently no lien on property which has been casually left in his office, which has been deposited with him as a pledge for a specific sum, or which he has obtained possession of by way of misrepresentation. And if an agent parts with the possession of the property, the lien, being a personal right, is in general lost: but by statute 6 Geo. IV. c. 83. (the factor's act,) if a factor pledges the goods or commercial documents of his principal as security for a debt, he may have a lien on them even if they are not his own; or if, without such notice, he pledges them for a pre-existing debt due from himself, the lien of the factor on such goods or documents is transferred to the person with whom they are pledged by the factor, in other words, to the person in whose favor is the right upon which the factor, while they remained in his possession, could have enforced against the principal.

The right of lien may also be destroyed by the special agreement of the parties; and if the agent enters into a contract with his principal, whereby it expressly appears that he is to retain the property, the principal, (as he stipulates for a particular mode of payment,) he must be understood to waive it.

We have hitherto considered only the case of hired or paid agents; between whom and gratuitous agents there exists nearly the same difference as with respect to their respective rights and duties as between bailiffs for hire and gratuitous bailiffs. [See Sir W. Jones, On the Law of Bailments.]

The responsibility of a gratuitous agent (the mandatory of the Roman law) is much less than that of one who is paid for his services. He will in general incur no liability, provided he acts with good faith, and exercises the same care in the business of his employer as he would in his own. But in a case of gross negligence or incapacity of skill, he fails to do it, he will be answerable to his employer for the consequences. He has of course no right to commission, but he is entitled to be reimbursed for any reasonable payments made, or charges incurred in behalf of his employer. [For the principles of the civil law as to the rights and obligations of principal and agent, see Domat's Civil Law, book 1, tit. xv.]

II. Having considered what are the legal consequences of the relation of principal and agent, as far as regards the parties themselves, we now proceed to explain the consequences of this relation as between the parties and third persons; and, first, as between the principal and third persons; and, secondly, as between the agents and third persons.

First, then, as between the principal and third persons: there is a general rule that the act of the agent is to be considered as the act of the principal; giving him the same rights, imposing on him the same obligations, and subjecting him to the same liabilities as if he had done it in his own proper person.

A bargain or agreement entered into by an agent is therefore binding upon his principal, whether it tends to his benefit or his disadvantage; and, in order to have this effect, it is not absolutely necessary that it should actually be within the scope of the agent's actual or implied, provided it be within what may most properly be called his apparent authority,—that is, provided it is such as the person dealing with the agent might, from the conduct of the principal, reasonably presume to be within his authority.

As to the authority of the principal. [See Law of Agency.]

The principal has having previously authorized or sanctioned dealings of the same nature. Thus, if a person has been in the habit of employing another to do any act,—as, for instance, to draw or indorse bills,—he will be answerable for any subsequent act done in the same manner. If, however, in any transactions, the apparent authority must, as far as regards the rights of third persons, be considered as the real authority. Thus, a broker employed to purchase has no authority to sell; and if he does, his employer may (unless he expressly states to the contrary) be held to be a principal, whatever hands they may have come. But if the principal has permitted the broker to assume the apparent right of selling the goods, he will be bound by a sale so apparently authorized.

Upon the same principle, where a general agent is employed,—that is, an agent authorized to transact all his employer's business of a particular kind, as to buy and sell certain wares, or to negotiate certain contracts,—he must be presumed to have all the authority usually exercised by agents of the same kind in the ordinary course of their employment: and though the principal may have limited his real authority by express instructions, yet he will not thereby be discharged from obligation incurred in the ordinary course of the trade. It is, at least, well known, or may reasonably be presumed, that the authority which he had given has ceased. An authority may likewise be presumed from the conduct of the principal, with reference to the subject-matter of the transaction in question. For if a person once allows his goods to be sold by another, he should seldom deny to the latter the unrestricted right to sell; for he who deals with the obvious character of an agent, or with the apparent authority of a person, is entitled in such a case to deal with him as an agent, subject to whatever duties and liabilities attach to the nature of his business.

There is a distinction between the authority of an agent and that of a principal. Where an agent purchases goods on credit, the seller may come on the principal for payment: and this right cannot be affected by any private agreement between the principal and agent. Yet the principal is, first, first instance, bound to keep an engagement so entered into by his agent upon a reasonable presumption of authority. But in the case of a special agent (that is, of a person appointed merely to do certain particular acts), no presumption of authority can arise from usage of trade, so the principal will not be bound by any act, not within the real authority of the agent,—and it lies upon those who deal with the agent to ascertain what that authority actually is.

Thus, in order to illustrate more fully the difference in this respect between general and particular authority, it may be supposed that the agent employs a stable-keeper, whose general business it is to sell horses, to sell a particular horse for him; and he warrants the horse to be sound, inasmuch as the giving such warranty is within the ordinary course of his employment, the owner will be bound by such warranty even though the agent have directed expressly that none should be given; but if the agent employs another person to sell his horse, whose ordinary business it is not to sell horses,—then, although, if he has given no order to the contrary, the agent will be entitled in giving a warranty, as being a thing incidental to the main object of his employment; yet if he has given express orders that no warranty should be given, and the agent gives a warranty in opposition to his orders, he will not be bound by it.

As the agreement made by an agent, so likewise all his
dealings in connexion with it, provided they are within his real or apparent authority, are as binding on the principal, as if they were his own acts. This will be the case made by an agent, at the time of entering into an agreement, (if they constitute a part of such agreement, or are in any way the foundation of, or incumbrance to it,) and, in many cases, even the admissions of an agent as to anything directly within the course of his employment, will have the same effect, as such representations or admissions had been made by the principal himself. [See Evidence.]

So also if notice of any fact is given, or if goods are delivered to an agent, it will be considered as notice or delivery to the principal. And in such a case, payment to an agent has the same effect as if it had been made to the principal, and in such cases the receipt of the agent is the receipt of the principal. But such payment is not valid if it is not warranted at law by the apparent authority of his agent.

A further case is presented by the fact that an agent, as long as the security remains in the hands of an agent, it is to be presumed that he is authorized to receive the money, and payment to him will therefore discharge the debt: but if the agent has not the security in his possession, the debtor pays into his hands, and will be liable, in case the agent should not account for it to his principal, to pay it over again.

So also if the principal gives notice to the buyer not to pay the money to the factor with whom he made the bargain, he will not discharge him from the debt to the creditor, if the factor had a lien upon the goods for his general balance, then, inasmuch as his lien will attach upon the price of the goods when they are sold, he has a right to require the buyer to pay him instead of his principal: and such payment will discharge the debt to the principal, will operate as a discharge of the debt.

A principal is in general civilly liable for all damage occasioned to third persons by the negligence or unskilfulness of his agent within the scope of his employment; and for any damages occasioned and committed by him, if it be either at his express command or within the limits of his implied authority.

From this liability, however, it is reasonable that those persons should be excepted, who have by some degree in the character of principals, yet have no power in the appointment of those who act under them. Thus the post masters-general, and persons at the head of other public offices, have been held not to be liable for the conduct of those appointed and committed by him, if it be either at his express command or within the limits of his implied authority.

And, on the same principle, the owners and masters of vessels are by statute released from all liability to third persons from the negligence or unskilfulness of the pilots by whom they are navigated into port.

Thus if a person is injured through the negligence of his principal or agent, as between the agent and third persons.

An agent is not in general personally responsible on any contract entered into by him on behalf of his principal: to this end, if money is due on a personal contract arising from such transactions, set off a debt due from the agent himself; which they could not have done, if they had known that he acted only as an agent. And if he afterwards discloses his principal, he is, nevertheless, not discharged from his liability;—those with whom he has dealt does not in the case with the committee of a club, or the commissioners appointed under a navigation act,—the agent will be personally liable on all the contracts he enters into.

If the agent acts in a representative character, yet if the principal is not known, or if there is no responsible principal to recognize him, he may, at their option, come either upon his person, or on the principal upon the contract of his agent.

Thus, and even where it is known, that the agent acts in a representative character, yet if the principal is not known, or if there is no responsible principal to recognize him, he may be at the option of the committee, or the commissioners, or not:—and in most instances the person injured may seek compensation either from the principal or the agent, at his option.

An agent cannot delegate to another the authority which he has received, so as to create between his employer and that other person the relation of principal and agent: but he may employ other persons under him to perform his engagements, and the original agent is responsible to his principal as well for the conduct of such sub-agents, as for his own acts. If the agent will not be answerable for the acts of his sub-agents from the wrongful acts of such sub-agents, the case is different; such damages must be recovered either from the person who in fact did the injury, or from the principal for whom the act was done. The original agent is responsible to his principal only for his own acts, and such as are done at his command.

The misconduct of an agent, besides the civil responsibility which it imposes on him, amounts in some cases to a misdemeanor, subject to very severe punishment. For if an agent is entrusted with the management of valuable securities, he is bound by written directions to apply the same in any particular manner, in violation of good faith converts it to his own use; or if an agent is appointed with any chattels, valuable security, or power of attorney for the transfer of property in any manner for special purpose, in violation of good faith, and without authority, sells or pledges, or in any manner converts the same to his own use, he is in either case guilty of a misdemeanor punishable with fourteen years imprisonment. [See MAXIM 398, 399, 400.]

And it is the maxim that, since, under the law, a principal is required to control the conduct of his agent, he is not responsible for his acts unless he knew, or should have known, that they would give rise to such punishment, or in such a case extend to prevent his disposing of so much of any securities or effects on which he has a lien or demand, as may be requisite for the satisfaction thereof. It may also be a misdemeanor, punishable in the same manner, if a factor or agent employed in the management of the property of another, or for that other's benefit, or with the express or implied authority relating to them, pledges either the one or the other, as a security for any money borrowed or intended to be borrowed, provided such sum of money is greater than the amount which was at the time due to the agent from the principal, divided by the number of years of such principal's account.

Stat. 7 and 8 Geo. IV., cap. 29, sect. 49, &c.

AGESILAUS, younger son of Archidamus, king of Lacedaemon, succeeded his brother Agis, n.c. 398, to the exclusion of his nephew Leuctrophylus, who laboured under the stigma of bastardy being the son of the king's second wife, biades, and not of Agis, his reputed father. As the crown descended in direct line from father to son, the succession of Agesilaus seemed, in his youth, to be barred; and his education was conducted as that of a private person, in all the strictness of Spartan discipline. But his father's personal advantage was taken of this to excite a prejudice against him: yet so high was his personal character, or so general the belief in the spurious birth of Leuctrophylus, that by a law of the body of the heinous parent was passed over, and Agesilaus was appointed king.

In the first year of his reign, a plot was formed to effect a change of government. The political constitution, established by Lycurgus, had degenerated into an oligarchy of a military kind. A few of the generality of the people, who entertained the hope to have their cause advanced by the right to hold high civil or military office, was engrossed by those families who boasted to be of pure Spartan blood, the term Spartan being opposed to Lacedemonian. This Spartan caste was supposed to have consisted of the legitimate and unmixed descendants of the noblest of the Spartan conquerors: the Lacedemonians are conjectured to have been the progeny of enfranchised Helots, strangers associated into the citizenship, a remnant of the Achaeis, and in a word, all who could not trace an unblemished line of Spartan descent to the early ages of the monarchy, were at this period only might become members of the community and Laceda-
monians: but they could never become Spartans; at least, Horodotus only knew of two instances up to his time (ix. 33, 35). The consequence was, that the bulk of the popula-
tion became constantly more Lacedemonian; in the time of Agesilaus, the number of Spartans had so dwindled, that they
could not be spared for foreign service in any rank below that of commanders. The ephors, and all the leading officers of
administration, civil and military, were taken from this rank.
The object of Cinadon's conspiracy was to claim that he
discounted, and 400 of his friends immediately fled to Athens.
Complaint was made at Sparta of this treacherous aggression
in time of peace. Agesilaus was, in general, more just and
liberal than the rest of his countrymen; but he contended
that it was necessary to examine whether the possession
of the Cadmeia was of advantage to Sparta, to which every
consideration must give way: and in this instance, he
not only discredited, but contradicted his better thoughts.
On a former occasion, speaking of the king of Persia,
he is said, 'at least among the Greeks, more so than
I, if he be not more just?': this anecdote rests on
Plutarch's authority. The decree of the Spartans was, as
we might expect, in their own favour. The assembly re-
solved to keep the citadel, and to bring Isimenias to trial,
who had his affairs bet at on the question consis-
tently on the vague charge of seeking Persian connexions,
but really for the vote which he had carried, forbidding any
Theban to join the army of Phobidas. But a counter-revo-
lution was soon effected; and the Spartans were compelled
to evacuate the citadel.
That the Lacedemonians, when now at the height of
power, were all at once involved in a train of misfortunes
which effectually broke that power, is ascribed by Xenon-
ph to the divine anger against their perfidious seizure of
Alexandria. Agesilaus had sworn, that he would not under-
take a war in the service of Persia, excepting when that
nation was being annihilated: as the powers which he
possessed in the government, he had perhaps tempted him to penetrate as far as Susa and Ecbatana, had been allowed to follow up his
successes. But the war that broke out in Greece, after he had
been about two years in Asia, saved the Persian monarchy
for a time, and seemed to crown the triumph of its overthrow
the Macedonians and Alexander.
The intrigues of the Persians and the hatred of the
Spartan influence had occasioned a dangerous league to be
entered against Sparta; nor were the Spartans sorry to have
an opportunity for settling any dispute with the Thebans, whom they detested for various causes (Xenophon
Hellenic. iii. 5). Thebes, Argos, and Corinth declared
against the Lacedemonians, and Athens followed the ex-
ample. Agesilaus prepared to march upon the
ordered Agesilaus home: in the height of his glory, and
with the prospect of victory, he instantly obeyed. The Lacede-
monians and their enemies met near Coroneia in Boeotia,
and a fierce battle took place (August, n. C. 394). The
Thebans alone made a gallant resistance; and the Spartan
king was wounded, who obtained only a doubtful victory.
He returned to Sparta, not importing with him the luxuries of
Asia, but adhering to the temperature and frugality char-
acteristic of his country's discipline. Those virtues were
perishing in the east; and that nation, which had been
the meanness of jealousy. The probability of Athens re-
covering her former power after her walls were rebuilt (n. C.
392), induced the Spartans to send Antalcidas (n. C. 387)
with proposals to Persia, favourable to themselves, but dis-
advantageous to the Thebans. The object of Cinadon's
was the personal enemy of Agesilaus, and was supposed
to have a mean pleasure in lessening his power and tarnishing
his glory. The Persians dictated the treaty in the language of
conquerors (Xen. Hellen. V. i. 31). All the Grecian citi-
ties of Asia were to be subject to the king of Persia: all the rest
to be independent: the king was to keep possession of
Cyprus and Cilaxomene; and the islands Lemnos, Imbros,
and Scyros, were given to the Athenians, to whom they for-
mained. Thus the object of Sparta was completely
against those who should not submit to his terms. The
Thebans refused; but their steadiness was shaken by prepara-
tions for coercion on the part of the ephors, inniously recom-
ended by Agesilaus, in revenge for a former affront. Thus
the members of the council of Sparta, in their various
ensions, disadvantages the advantages which should have
been the fruit of victories and military virtue of no common
stamp. Sparta had now, though not worthily, recovered her
power in Greece. Her virtues, indeed, were to be commend,
rather in adversity than prosperity; nor did she profit by
her own experience, that tyranny leads to the destruction of
the tyrant. Phobidas, one of her generals, on his march
into Thrace against Olynthus, was encamped in the neighbour-
city of Olynthus; while the partisans were about to
n in dose
that Isimenias and Leontiades, the heads of opposite factions,
exercised the chief magistracy together. Leontiades, who
courted the friendship of Lacedemon, secretly introduced
Phobidas and his troops into the Cadmeia, the citadel of
Thebes (n. C. 382). This at once gave the superiority to that
party of which he was the chief; and 400 of his friends immediately fled to Athens.
Complaint was made at Sparta of this treacherous aggression
in time of peace. Agesilaus was, in general, more just and
liberal than the rest of his countrymen; but he contended
that it was necessary to examine whether the possession
of the Cadmeia was of advantage to Sparta, to which every
consideration must give way: and in this instance, he
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he is said, 'at least among the Greeks, more so than
I, if he be not more just?': this anecdote rests on
Plutarch's authority. The decree of the Spartans was, as
we might expect, in their own favour. The assembly re-
solved to keep the citadel, and to bring Isimenias to trial,
who had his affairs bet at on the question consis-
tently on the vague charge of seeking Persian connexions,
but really for the vote which he had carried, forbidding any
Theban to join the army of Phobidas. But a counter-revo-
lution was soon effected; and the Spartans were compelled
to evacuate the citadel.
That the Lacedemonians, when now at the height of
power, were all at once involved in a train of misfortunes
which effectually broke that power, is ascribed by Xenon-
ph to the divine anger against their perfidious seizure of
Alexandria. Agesilaus had sworn, that he would not under-
}
pust kind, may very safely be asserted. After establishing
Nectanebos in the government of Egypt, the old king set
out on his voyage homewards, loaded with money and pre-
sents, the reward of his services and his treacher. Being
driven by contrary winds on the coast of Africa, he died there
at the advanced age of eighty-four. His attendants pre-
served the body in melted wax, and took it to Sparta to be
burned, consistently with the usages of their country, which
did not put to death a corpse. Enormous was the device by
which the immortality of Charles VI. had allowed the quarrels
of the nobility to reach a great height, prompted by his own
ambition, and perhaps desirous of finding employment for
the turbulent spirits of his own court, the English monarch,
who, at the beginning of 1615, conveyed to all his ministers
(provision at one time of his ancestors) a considerable army,
and having reduced the town of Harfleur near Havre, set out for
Calais. The siege of Harfleur occupied thirty-six days;
and the loss sustained by the English, principally by sick-
ness, during this period, was immense. Upon reaching
Abbeville and Amiens, Henry found the passes of the Somme
guarded, and the bridges broken down; but, having erected
a temporary bridge, at a place called Nesle, he passed his
army over, and, pursuing his route, came to an engagement
with his opponents on the 25th of October in the year above
mentioned. The disparity of forces was very great:
The English army, at the commencement of the invasion, con-
sisted of about 3500 men at arms, 4000 archers on foot and
on horseback, and 6000 men in the baggage train; the French,
10,000; but the attendants of the men at arms and other
followers swelled the whole to about 30,000. The loss during
the siege, the garrison left to defend the castle, the rat-
ted buildings, the valiant soldiers, and the killed, reduced this
force exceedingly. An ancient master-roll, still extant, gives 812
as the number of men at arms who were with the king at Agincourt,
and 3071 archers; so that, al-
lowing two attendants to each man at arms, we have a total of
5500. No ancient English writers
make the number more than 10,000; and two French
writers, one of whom was with the English army, say it was
about 11,000 or 12,000. Other French writers make it 15,000,
18,000, or even 20,000. The accounts of the number on the
other side differ immensely from 20,000 to 150,000.
The previous night was passed by the English near
the village of Maisoncelles, in preparing their weapons, confes-
sing themselves, and receiving the sacrament; by the French,
who were posted a mile off, in the same manner; and by an
archer, at an hundred men; the officers of the king, and
flanked by the wings of the Duke of York and
Lord Camoys respectively. The baggage had been left
under a guard near Maisoncelles, and with it several priests
on horseback, who put up their prayers for the success of
archers. The British army was placed in the wood of
mainly owing, wore little armour, but, in addition to their
bows, they had hatchets or swords hanging from their girdle;
many were barefooted and had no hats, while others had
leather caps crossed with iron. Henry had, during the
March, ordered them to provide themselves with long stakes,
which they might plant before them to resist the charge of
cavalry.
The French were drawn up in three lines; the first under
D'Albe, Constable of France (who commanded in chief),
accompanied by many noblemen; the second under
the Duke of Alençon, the Duke of Bar, and others; and the
third under Counts Marie, Dampmartin, &c. The ground,
between the two woods, was too narrow for the French to
make use of their superior numbers; and a heavy
which had fallen the night before, and the trampling
of the horses, who were kept moving all night by the pages,
had broken it up.

Henry, who lay upon his horse, heard the mass in the morning,
addressed his little army; and after an unailling negotiation (com-
 menced by the French), Sir Thomas Erpingham, who had
 drawn up the archers, threw up his truncheon, and gave
the signal for the attack. See Carver's "Topographical Dictionary of
Ireland, 1814." It is in the barony of Clonmaco, and is
situated twenty-eight miles east from the town of Galway, and
seventy-five miles west from Dublin. The village is now
much decayed. There is another Agrigum in Wicklow,
sometimes mistaken for that at which the battle took place,
which is a market-town, situated on the banks of the Ovoca,
or Ovoca, thirty-five miles from Dublin. There is also a
village named Anghir in the county of Roscommon.

AGINCOURT, or AZINCOURT, a Small Village in the Depart-
ment of Pas de Calais, France, in the ancient province of
Artois, celebrated for a great victory obtained by the English
under Henry V., over a French army vastly superior in numbers. Excepting the castle
where the immortality of Charles VI. had allowed the quarrels
of the nobility to reach a great height, prompted by his own
ambition, and perhaps desirous of finding employment for
the turbulent spirits of his own court, the English monarch,
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situated twenty-eight miles east from the town of Galway, and
seventy-five miles west from Dublin. The village is now
much decayed. There is another Agrigum in Wicklow,
hatchets. The French pressed on over the dead until they were piled up almost to the height of a man, and then the English mounted on the heaps, and slaughtered their enemies, whose heavy armour and crowded army rendered them almost incapable of resistance. The first and second lines of the French were routed, notwithstanding a brave attempt of the Duke of Alençon to rally his forces. That nobleman exchanged blows with the king himself, and was slain, as were a vast number of knights and noblemen. The third line, consisting of their lessers, was a few others, who were either killed or taken; and, after a contest of three hours, the victory remained with the English. During the battle the baggage of the victors was plundered by some peasants and a few townspeople of Dijon, who entered their town, taking the wives and children of the citizens of that place with them. Henry ordered the prisoners taken to be slain. This cruel order was, except with respect to a few men of rank, complied with.

The loss of the respective armies is variously stated: that of the French was probably 10,000, including the Captains, three Dukes, five Counts, and ninety Barons. The victors lost probably 12,000, including the Duke of York, the Earl of Suffolk, and one or two others of rank. Henry continued his march to Calais, which he reached on the 29th, and immediately disposed to Dijon, which he entered, with great pomp, on the 23rd of November. The immediate consequences of the battle were by no means important. It was a useless display of valour, prompted by personal ambition. Upon such fearful scenes of carnage mankind is not able to bestow a proper attention; and thus, the victories of the French and English were, and are, lost to every succeeding age.

[See Nicola's History of the Battle of Agincourt, 1427.]

AGIO, a term generally used to denote the per centage difference existing between the prices of the current and the standard coins of any place. The metallic currency of wealthy states generally consists of its own coin exclusively, and it is in the power of the state to prevent the depreciation of that coin below the standard, so that no calculations of agio, rigorously so called, are necessary. In smaller states, the currency seldom entirely consists of their own coin, but is made up of the clip, worn, and diminished coins of the neighbouring countries with which they have dealings. Under these circumstances, banks usually make different times, established by the government of Venice, Hamburg, Genoa, Amsterdam, &c., which, under the guarantee of the state, should be at all times bound to receive deposits and to make payments, according to some standard value. The money, or obligations of the bank, is then called the agio of that bank. The commercial money payments of the place are usually managed without the employment of coin, by a simple transfer in the books of the bank from the account of one merchant to that of another. The practical convenience, which this plan of managing the payments affords to merchants, who would otherwise be obliged, when discharging obligations incurred in standard money, to undergo troublesome and expensive examinations of the various coins in use, is the principal motive which the bank rests on its intrinsic superiority over the money in circulation, so that the agio of the bank does not usually form an exact measure of that superiority. The term agio is also used to signify the rate of premium which a person having a claim on another, be he legal demand in one only metal, elects to be paid in another. Thus in France, silver is the only legal standard, and payments can be demanded only in silver coin, a circumstance which is found to be so practically inconvenient that, for convenience, it had been deemed necessary to establish a premium in order to obtain gold coin, which is more easily transportable; this premium is called the agio on gold.

AGIS, son of Elamathia H. (n. c. 244). On his accession to the throne, which he had repossessed from his cousin, and which however did not exceed one hundred years, he maintained a large standing army, and set himself to establish a regular system of taxation. He had been raised to the throne at the age of forty-four, and it is not improbable that a very eventful part of his administration of which he was afterwards accused, in his own personal example. But unfortunately, at the expense of himself and his country, his colleague, Leonidas, had formed his habits in the luxurious court of Seleucus, king of Syria. The manners of the mass of the people, as well as of the courtiers, had become more luxurious than they had been before. Such was the change, that the man, who had been the departure from the original pattern of conduct, that it seemed hopeless to attempt a general correction of abuses. The privileged class, to whom the name of Spartans was confined, was now reduced to seven hundred heads of families, of whom not more than one hundred enjoyed the rank of the ancient wealth; such was the effect of the inequality introduced by intercourse with strangers, and especially the Persians, and
by the gains attendant on success in war. The oligarchy was rich, haughty, and licentious; the poor were oppressed and burdened with debt. These considerations suggested the immediate adoption of measures, sanctioned by the venerable authority of Lycurgus; but the event proved the hopes of the democrats were vain. The synod, in the reign of Agesilaus, had attempted to effect by conspiracy; namely, to abolish the distinction between Spartans and Laedescamonians, retaining that between the Laedescamonians and the Perioci, or people of the smaller towns. The latter, however, were to be trained in the strict discipline of Lycurgus, and to succeed to the privileges of citizenship as vacancies occurred. In laying his proposals before the senate, Agis recommended them most strongly by the analogy of the miles round, which limited the combination of his own lands and money to the common stock. His mother and his kindred followed his example. The multitude applauded: but Leonidas and the rich men opposed him, and persuaded the senate to reject it; but the question was thrice proposed, and again rejected. In the end of the king, Agis contrived to get Lyons appointed one of the ephors; who, with the utmost care of Lycurgus, having the laws, by marrying a stranger, and residing for a time in a foreign land; two acts forbidden to the race of Hellenes. In such cases, the king, Agis contrived, after the place of assembly, plucked the ephor, now; not only the anti-reforming party, from their seats, and placed others in their place. This violence was not followed up by personal injury. The life of Leonidas was saved; but the death of his friend, which had threatened the day during the storm of his faction, was unavailing; but Agis himself, to the last, was not to be moved. He was therefore persuaded the two kings to burn all deserts, registries, and securities in the first instance. When the division was proposed, he devised means to press the question. Before that the place of assembly, under the protection of the Achaean, who were allies of Sparta, applied for assistance against the Athenians, who threatened to lay waste the country of Peloponnese. Agis was, therefore, unavoidsably sent to command the army, and exhibited the same republican virtues in his military office, as in his civil administration. His popularity was deservedly great; and it enabled him, notwithstanding the licentious spirit of the times, to preserve the strictness of ancient discipline. He now joined his friends, the partisans of Agis, whose over-caution left no room for enhancing the glory of the Laedescamonian soldier: but the conduct of the two kings, and the rapid performance of every duty on the part of their commander, impressed both the army and the people with admiration. It was, therefore, to the people of the two kings, that the Achaean, who were allies of Sparta, applied for assistance against the Athenians, who threatened to lay waste the country of Peloponnese.

On the return of Agis, he found that a change had taken place in the condition of his country. The poor had been diverted by finding, that although Agis was was with the party of his enemies, and suffered them to detromon and restore Leonidas to power. The tide of popu-lar favour had turned against Agis, and the day of his misfortune had come. His friends entreated him to fly to sanctuary. Some treacherous friends entrapped him, got possession of his person, and dragged him to prison. Being questioned by the ephors, whether he did not repent of having introduced innovations into the state? he replied, that in the face of death, he would not repent of so worthy an enterprise. He was condemned, and executed with in-
AGNOLO. BACCIO di, a Florentine, was at first a wood-carver, and afterwards an architect. He was born in 1402 and had already acquired considerable reputation in the practice of his earlier profession at Florence, when he was attracted to the study of architecture, and went to Rome to pursue it among the remains of antiquity there. He appears, nevertheless, during his residence in Rome, to have continued to employ himself in his art and business as a wood-carver, probably for the means of subsistence, and his study or shop was frequented by the most eminent men of taste and learning then in Rome. Among these were Raffaello, Michael Angelo, Sansovino, and the brothers Squarcione.

On settling himself as an architect in Florence, Baccio was engaged in several works of importance there, and acquired notoriety of a disagreeable nature through deviations from the ordinary practice of the time. He adorned the windows of a mansion or palazzo, viz. the Italian term the large town-house of a distinguished person, in the Piazza di Santa Trinita, with frontispieces, and put a frontispiece, consisting of columns with a regular entablature, to the portal, in the manner, which had so long been practised ever since, and is at the present time in vogue, but which had been restricted to churches up to this time. All the wits in Florence set upon poor Baccio, who was lampooned and ridiculed in every possible way, for making, as they said, his abode into a temple, his work, he almost induced to retreat his steps, but being conscious that he had done well, 'the took heart and stood firmly.' It was a novelty, and as the biographer of all the architects says, "like almost all other novelties, it was at the first scorned and afterwards worshipped." But the same writer is somewhat severe on him for making, perhaps, too bold a crowning cornice to the front of this identical edifice, saying, that it looked like a boy with a huge hat on his head!

Baccio had been engaged to complete the architectural arrangements about the cloister or drum of the cupola of the metropolitan church of Santa Maria del Fiore, which were left incomplete by Brunelleschi, and whose design for that part was lost. Baccio was about to supply what Brunelleschi had left unfinished, and had intended to cut away the buttoings left by Brunelleschi in the work because they did not suit what he proposed to do. At this juncture Michael Angelo happened to come to Florence from Rome, and attacked him so violently on the unfitness of his design, that Baccio stopped, and in consequence of several disputes on the subject, the edifice, in that particular, still remains incomplete.

Baccio d' Agnolo died in 1513, being eighty-three years of age, and left a son Gidino, an engraver and architect, who succeeded to the direction of his father's works. The most esteemed of Baccio's productions are the villa Borghezini, near Florence, and the campanile or bell-tower of the church of Santo Spirito (a production of Brunelleschi's), in Florence. Among these, the magnificent frontispiece of the Transept of the church of the Lateran, is attributed to this architect, but it is more commonly referred to Nanni di Baccio Bigio, a man of far inferior merit and reputation to Baccio d'Agnolo.

AGONUS, in Ichthyology, a genus of Aracnothecous fishes, first separated from the Coddi by Bloch, and afterwards adopted, by Lacépede and Pallas, under the different names of Aspexanths and Phalangides. The greatest number of the species belonging to the genus Agonus are found in the northern Pacific ocean, particularly along the coast of Japan, and northwards as far as Behring's Straits. They are all of diminutive size, never exceeding nine or ten inches in length, and are no where used as an article of human food. One species only, the

[Agonus acoucensius]

Poggo, (A. Europaeus), inhabits our own coast, as well as the seas of Russia, Holland, and even Iceland; it is also found in the Baltic, but according to Baron Cuvier, never in the Mediterranean, though Brunnich expressly affirms the contrary.

The reader who desires a detailed description of the characters of this genus is referred to Schneider's edition of

Block's System: The Speciologia Zoologica of Pallas: an excellent monograph of the genus by Tischius, in the fourth volume of the Memorie della Reale Accademia delle Scienze di Torino, and more particularly, the Historia Naturalis des Poissons, of the late Baron Cuvier and M. Volencenees.

AGUSTA, or AUGUSTA, is a sea-port town on the south-east coast of Sicily in the island of the same name, built in the 12th century, by the Emperor Frederick the Second, on a low peninsula. On its north side the peninsula is connected with Sicily by a long narrow causeway, having considerable salt ponds on each side. The harbour is lined with the remains of the town, and the sea-port in the island of Sicily. This town suffered from an earthquake in the year 1693, by which it was nearly reduced to ruins: during the shock, the powder magazine in the citadel exploded, and the light-house was thrown into the sea. Various accounts are given, in stating, that one-third of the inhabitants were crushed to death by the falling buildings. The town has since been rebuilt on a regular plan, and in order to mitigate the evils of any similar visitation in future, the houses are all made very low. The place is moored fortified on three sides, and is protected towards the sea by three forts, built on as many small islands at the entrance of the port. Augusta has never recovered the degree of importance it enjoyed previous to the earthquake. The knights of Malta, during the time of their stay in this island, were eminently celebrated for their magazines at this port. The trade of Augusta is in wine, flex, olive-oil, salt, and sardines. The remarkable caves of Timp a are in its vicinity. The town is situated eighteen miles north of the equator, at 37° 28' lat. and 15° 8' long. Population said to be about 15,000.

AGOUTI, (Dasyprocta, Illiger: Chloronyx, F. Cuvier) in Zoology, a genus of animals belonging to the class Mammalia and order Rodentia. The peculiar and particular property of the Agouti is, that it has neither ears, nor teeth, the grinders, or front teeth, in each jaw, with which they not only mine and triturate the hard substances which serve them for food, but which they likewise apply to a great variety of other purposes, such as the formation of subterraneous burrows, and in order to lessen the weight of their bodies, among the roots of trees, sometimes even cutting down very large timber, as in the instance of the beaver, and generally in gnawing and destroying whatever they happen to encounter. To enable them to perform these operations, the teeth of these animals, as well as the most important organs of mastication, are shaped something like a chisel. They are extremely sharp on the external edge, and slope abruptly towards the internal, so that they constitute a more or less obtuse angle of the tooth a very acute angle. Neither is the external hard flinty principle of the teeth dispersed through the body of the oceans, in the manner of all animals which feed upon vegetable substances. The teeth of the Agouti are conical, and are formed by the external surface of the tooth like a thin crust, so that the heart and inner edge, being composed of softer substances, (viz., common bone or ivory,) wears much more rapidly than the external surface, and thus continually preserves the sharp-edged, chisel-shaped of the teeth, so essential to the economy of the animals. Leading as they do a peaceful, harmless life, and feeding principally upon vegetable substances, the rodentia are destitute of canine teeth; but in the molar form, and composition of their molar teeth, as well as in the number and fineness of their teeth, they present an almost infinite variety, and it is upon these differences that their generic characters are principally founded.

Though zoologists have not succeeded in subdividing the rodentia into natural families, distinguished by the same definite and logical characters as have been developed in some of the other orders of mammals, they admit of being distributed into small natural groups, the component parts of which are very intimately allied and connected. From these groups, certainly one of the most natural is that which composes the genus Cavia of Linnaeus, at present divided into five natural genera, differing equally in the conformation of their organs of mastication and of locomotion. These are the cavy (Dasyproctus, Bosc), the coypé or coyp (Cavia, F. Cuv.), the common cavia or guinea-pig, (Cavia, Cuv.) and the agouti. (Dasyprocta and Chloronyx of Naturalists.) Besides the large meck or rodent teeth, the genera of this
group have universally four molars in each side of each jaw, destitute of real roots, and penetrated by laminae of enamel, which assume various forms, and appear marking the crowns of the teeth with divergent irregular figures. This character, indeed, is not peculiar to the caviornia rodentia, but is equally apparent in the porcupines, armadillos, and other genera of the same order, but the number and form of the toes is, as far as we are aware, altogether peculiar to the present group. These are, four on the fore feet, and three on the hind ones. In this characteristic they appear to be among the cavies, that the only instance in which the general rule admits of exception, is the case of the paca, which have two small additional toes before and one behind. The toes are mere rudiments, and not in use in the functions of locomotion and prehension. Even in the qualities of their hair, these animals agree with one another, and differ from the generality of rodentia; and their habits and economy are in most respects alike: the hair is universally of a coarse, bristly quality; they inhabit the hotter parts of South America and the West Indian Islands, and are most especially fond of low, marshy situations, and the banks of inland lakes, and rivers.

The most prominent zoological characters of the Agoutis are found in the nature and conformation of the feet and toes. The toes are provided with large powerful claws, and yet the animals make no use of them in digging or burrowing: they are perfectly long and perfectly separate from one another, enabling them to hold their food between their fore-paws, and in this manner to convey it to their mouth. Like all other animals which are thus accustomed to use the fore-paws as hands, they have a habit of sitting upright upon their hind quarters to eat, and frequently also assume the same position when they would look about them: the horses are surprised by any unusual sound or occurrence. Their food is exclusively of a vegetable nature, and consists most commonly of wild yams, potatoes, and other tuberous roots in the islands of the different West India groups, they are particularly destructive to the sugar-cane, the sugarcane, in which they are extremely fond. The planters employ every artifice for destroying them, so that at present they have become comparatively rare in the sugar islands, though on the first settlement of the Antilles and Bahamas, they are said to have amounted in such countless multitudes, as to have constituted the principal article of food for the Indians. They were the largest quadrupeds indigenous in these islands upon their first discovery. The same rule of geographical distribution occurs generally in other parts of the world, where groups of animals are detached at so much distance from the mainland of a particular continent, the smaller species of inhabitants are usually found spread over both, whilst the larger and more bulky are confined to the mainland alone, and are never found to be indigenous in the small insulated lands.

Though the Agoutis use their fore-paws as hands to hold their food whilst they eat, yet their toes are nevertheless rigid and inflexible, and their claws large, blunt and nearly strait. They are consequently deprived of the power of ascending trees; and as they also do not construct burrows they wander at large among the woods, sheltering themselves beneath fallen timber, or in the hollow of some decayed tree. Here they produce and nurture their young, bringing forth, according to some accounts, three or four times in the year; according to others, never having more than a single litter in the same season, and even that consisting of not more than two or three individuals. It is probable that none of these animals are found in all the hotter parts of South America, notwithstanding the destruction made among them by small carnivorous animals, as well as by the Indians, and likewise from the close affinity which they bear to the hare and rabbit of our own country, that the Agoutis are tolerably prolific. The young are brought forth with the eyes closed, as in the case of most of the rodentia and carnivora; but they are covered with hair, or rather small bristles, of the same colour as the mother: they soon acquire the use of their limbs and members, and learn to shift for themselves.

The hind legs of the Agoutis are considerably longer than the fore, and their pace is tolerably rapid for a short distance. But they seldom trust to speed of foot for their safety, but seek for shelter and security in the first hollow tree, or unexplored forest which they meet with. Here they allow themselves to be captured, without any other complaint or resistance, than the emission of a sharp plaintive note. The head of the Agouti is large, the forehead and face convex, the nose swollen and tuberous, the ears round, short, and nearly naked, and the eyes large and black. The hair is annulated in different degrees, with black, yellow, and green; it is generally coarse and bristly, like the weak spines of a hedgehog, though in one species it approaches in fineness to the fur of the rabbit; the tail is most commonly a mere naked stump or tubercle, which in the acouy alone attains any apparent length, and is covered with a few short scattered hairs. The teeth are twenty in all; namely two incisors and eight molars, four on each side, in each jaw. The latter are all nearly of the same size, oval in figure, and with flat crowns, which exhibit the different convolutions of the enamel, as it penetrates the softer materials of which the body of the tooth is composed. It is impossible from mere description to convey an idea of the intricate figures which these convolutions assume; and we, therefore, refer to the annexed figure, where a and b represent respectively the upper and lower jaws, and the figures 1, 2, and 3, the appearances of the teeth at different ages, or after different degrees of trituration: No. 3, representing the teeth shortly after they begin to wear. No. 2, their intermediate state, and No. 1, when very much worn. This system, it

![Diagram of teeth of Agouti](https://via.placeholder.com/150)

**[Teeth of the Agouti, from Cuvier's *Dents des Mammiferes.***]

1. The common Agouti, (*Dasyprocta Acuta*), sometimes called the olive cavy, from the prevalent colour of its back and shoulders, is the size of a middling hare, being one foot eight inches in length, and about eleven or twelve inches high at the croup. The head resembles that of the rabbit, the nose is thick and swollen, the face arched, the upper lip divided, the ears round and naked, the eyes large, the upper jaw considerably longer than the lower, and the tail a naked flesh-coloured stump. The hairs of the upper and fore parts of the body are annulated with brown, yellow, and black, which give the animal a speckled yellow and green appearance on the neck, head, back, and sides; on the croup, however, they are of a uniform golden yellow, much longer than on any other part of the body, and directed backwards; the breast, belly, and inner face of the forearms and thighs are light straw colour, and the moustaches
and feet black. The general length of the hair on the upper and anterior parts of the body is about an inch, that of the croup is upwards of four inches long, and all, excepting the short coarse fur of the legs and feet, and that on the breast and belly, is of a stiff, harsh nature, partaking more of the quality of bristles than of simple hair.

2. The black Agouti (Dasyprocta Cristata) is rather improperly called the crested agouti, by M. Geoffroy St. Hilaire, as this species is not characterized by the presence of a single process of the skin, which is said to be found on a crested agouti. It is, however, a very different animal, and is considered by botanists to be related to the rabbits, or a distinct order. The general color of the fur is greyish-black, with a whiter under part of the body, and a more or less indefinable and imperceptible shade of grey on the back; the hair is sharp, and well defined in the croup, and the feet. The hair is of a most coarse nature, and the general appearance and form of the animal is that of a small stag or antelope, rather than of a rodent animal. The hair also is materially different from that of the Agoutis, and approaches in texture and quality to the fine soft hairs of the Leshcaco and Chinchilla. On the head, shoulders, and back, it is greyish-fawn colored with white, darker on the loins and hips, and terminating in a well defined curve over the croup, within which the color is almost a jet black. All the under parts of the body are white; and this color is separated from the greyish-fawn of the back and sides by a yellowish band, which passes along the flanks as in certain antelopes and gazelles. Under the chin and on the throat the color is white, and there is a band of the same color, and of a semicircular form, situated between the back and the hinder part of the thigh, near the groin, and surrounding the dark color of the croup. The male and female are in all respects alike; the latter has four mammae, and is said to bring forth but two young ones at a litter, which she conveys in the warrens of the Leshcaco, till they acquire strength to follow her abroad and learn to shift for themselves.

This species inhabits the open plains and wilds of Patagonia, as far south as the Straits of Magellan, where, according to M. Lesseyn, it is called Mara by the natives. It is often mentioned a hare in the voyages of Sir John Narborough, Commodore Byron, and other navigators, who found it in great plenty about Port Desire, on the eastern coast, and to whom its flesh was a welcome and wholesome substitute for the dried and salt provisions, which usually composed the only food of the sailor. The maras are said to go in pairs, to keep entirely in the open pampas or plains; they never form burrows, but couch in a lair by the side of some plant or shrub, run with great velocity for a short distance, but are easily fatigued. In the pampas, south of Buenos Ayres, Azara informs us that they are pursued on horseback, and killed with two heavy iron balls connected by a long cord, which the natives are very expert in throwing, and seldom miss their aim.

AGRA, CITY. The capital city of the province of Agra is situated on the south-west bank of the river Jumna, 27° 12' N. lat. and 77° 56' E. long. It was originally an insignificant village, but in the beginning of the sixteenth century was much enlarged by the Emperor Shender Lody, who bestowed on it the rank of an imperial city and made it the capital of his dominions, under the name of Badulghur. Half a century later, the city was further enlarged by the Emperor Akbar, who built here an extensive palace, and again changed its name to Akbarabad. This city continued to be the seat of the Mogul government until the year 1647, when Delhi was declared the capital by the Emperor Shah Jehan, from which p
sisted the decline of Agra may be dated. Shah Jehan, during his residence at Akbarabad, built a most superb mausoleum, as the cemetery of his favourite wife the Begum Noor-Jehan, about three miles from the city. This building, which is called the Hauz Khas, is a square of white marble, and is raised on an elevated terrace of white and yellow marble. It contains a central hall, within which are the tombs of the Begum and of Shah Jehan himself; and around this hall are several smaller apartments in which the other members of the family are interred. The spacious palace of Akbar has been used as warehouses, armories, offices, and lodging-rooms for the garrison.

The houses in Agra are built of stone, and are very lofty, while the streets are so narrow as scarcely to allow a carriage to pass through them. The city contains many public baths, caravansaries, and mosques.

Agra was taken, in 1784, by the Marhatta chief Madjade Seindiah, and was retained by him until 1803, when it was captured, after a siege, by the forces under Lord Lake. It is a city of 180,000 inhabitants, and contains 27,154 houses.

The Hindoo inhabitants hold the city in great veneration, as the place of the akbar, or incarnation of Vishnu, under the name of Purama Rast. Agra is one hundred and thirty miles south of Delhi, and is the residence of two soubahs, or hundreds, containing, together, 40 considerable towns and about 349 villages. The chief towns and forresses are Alwar, Bharatpur, Deeg, Mathura, or Muttra, Etawah, Gwalior, and Narwar. In the heat of the summer, this city is for three months a desert, and is thickly strewed with ivy.

AGRA, province, a souba or province of north-western India, bounded, on the north, by Delhi; on the south, by Malwa; on the east, by Oude and Allahabad; and on the west, by Nepal and Surt. It lies between lat. 27° and 31°, and long. 76° and 78°. Its length is about 260, and its breadth about 180 miles. The province is divided into thirteen circles, or districts, viz., Agra, Calpy, Kanage, Cowl, Gungal, Ired, Sarwan, Narwar, Mundlany, Alwar, Tejar, Naraul, and Sohbul. The province lies in the warmest part of Hindostan, and is bounded into 203 parishes, or hundreds, containing, together, 40 considerable towns and about 349 villages. The chief towns and forresses are Alwar, Bharatpur, Deeg, Mathura, or Muttra, Etawah, Gwalior, and Gohud, Calpy, and Narwar. In the heat of the summer, this city is for three months a desert, and is thickly strewed with ivy.

AGRAM, a fortified town on an eminence near the Save, 45° 40' N. lat., 16° 1' E. long. It is about 150 miles nearly due east of Delhi. It is the residence of the viceroy of COBRA, and the residence of the Viceroy of Croatia and Slavonia. The town consists of three parts, the upper, the lower, and the part called Opotwina.

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AGARIAN LAW was the general title of any law among the Roman citizens, which were derive from the public domain. As the subject of agrarian laws constitutes perhaps the most important element in the history of the Roman republic, and as an utter misconception of their application is prevailing in the public mind, we have thought it worth while to notice the subject, especially the popular writings of Hoole, Ferguson, &c, it seems desirable to place before the general reader a brief account of those more correct views which have been established by the researches of Heyne, Niebuhr, and others.

Ever since the revival of letters it has been a universal error to look upon the agrarian laws, with which the names of the Gracchi and others were connected, as attempts to limit the amount of landed property that any individual might hold. In fact, the laws which are thus termed are but a very superficial covering of the real rights which would indeed afford strong ground for condemning any statesman who could be the author of such a proposition, and any state where such a proposition could be favourably received. In the frenzy of the great French Revolution, it was even pretended, that all laws of this kind were invented by Charles the Fifth, who, following the advice of Machiavelli and Montesquieu, were willing to grant an agrarian law of this extravagant nature; and so much stress was laid upon the examples of Roman history, that Heyne, in March 1793, availed himself of the opportunity offered to him by the decree of the University of Göttingen, to address to that body a paper entitled Leges agrarum posterae at excrables, (see his Opuscules, vol. iv. p. 351.) in which he successfully contended that the laws so called among the Romans, instead of interfering with private property, actually afforded protection to the public domain. Heyden and Hugoniett have carried the inquiry further; but for the fullest and most satisfactory investigation of the whole subject we are indebted to Niebuhr and others.

As the victorious arms of the Romans extended their authority over one state of Italy after another, the right of conquest gave them a title to the lands of the conquered; but, except in cases of strong provocation, as in the defection of Capua in the second Punic war, it became the custom of the conquerors to restore a part of the territory to the unfortunate owners. Yet a portion would perhaps always be reserved and added to the public domain. With regard to the disposition of the territory so acquired, we will not go back to an earlier period. Here again, the argument as to whether the plebes or commonly a share in the government, though an inferior one, with the patricians. The disposition of the conquered land was then, we may perhaps say, fourfold. Part was given in full possession to religious foundations; part was sold by the state for the public service; and part gave to the plebes or commonly a share in the government, though an inferior one, with the patricians. The disposition of the conquered land was then, we may perhaps say, fourfold. Part was given in full possession to religious foundations; part was sold by the state for the public service; and part gave to the plebes or commonly a share in the government, though an inferior one, with the patricians. The disposition of the conquered land was then, we may perhaps say, fourfold. Part was given in full possession to religious foundations; part was sold by the state for the public service; and part gave to the plebes or commonly a share in the government, though an inferior one, with the patricians.
the territory which fell into the hands of the conquerors in the issue of a successful war must often have been in a state of utter desolation, for devastation by fire and sword was a constant and leading feature in ancient warfare; and in a conquered state, how much more in an important branch of agriculture, such desolation was not easily repaired. Thus large districts were unfit for distribution among the plebeians, or for sale by the questors. Moreover, much of the mountain land, and even of the unhealthy plains, was not cultivated so as it still involved turgage, and therefore equally unfit for partition, though far superior in immediate value. The disposition of this unappropriated land, which constituted the permanent public domain, led to a singular mode of occupation. An edict was issued by the government, most probably to the patricians alone, to cultivate these lands, but with the full understanding that the state reserved to itself the ownership, and might at any time resume possession,—a right which was from time to time exercised. Yet, though the occupants had no title, whatever as against the state, they appear to have been protected against individuals by the interdicts of the pretor, and a branch of law entitled causae possessionum. Under this protection these lands often passed from father to son by a kind of inheritance, or as doweries to daughters, or were even transferred to other citizens by purchase; and in this way even plebeians, it would appear, might come into the occupation of them. But, no matter through how many hands the lands might pass, the tenure to the last occupier was always accorded to the first; indeed, it always taken into account in estimating the value. On the other hand, the occupier was subject to certain restrictions and payments. He could not legally hold, at least after the Licinian law, more than 500 jugera (about 330 acres) of this public pasturage; the public pasture was divided into head of 500, and of 500 of small cattle; and he was bound to employ a fixed number of freemen. Some of these restrictions indeed did not always exist, but it seems highly improbable that so many regulations of this kind should not have existed from the very beginning, if only to protect one patrician from another. But whatever doubt there may be on this subject, the state was always entitled to the payment of a tenth upon all grain, and a fifth on the olives and the wine, besides some charge, we know not how determined, for the use of the common pasture land. The technical terms used with regard to these possessions were as follows: the lands themselves were called agru occupati, a. occupatori, a. possessi, a. concessi, a. arcfylmae, or generally possessiones. The turgae or possessiones were received head of, and of 500 small cattle; and the payment he made to the state was the fructus or vecitigal. Instead of collecting this branch of the revenue directly, it was the practice to farm it out, which was expressed by selling or letting the juccevecitigalis or fructus; such contracts were sueur or residual, and the lands, locare, or even more briefly, though somewhat ambiguously, agrum locare. It must be confessed, indeed, that in this view of the first agrarian laws there is a doubt; it was not, therefore, cleared up; for a mere edict, such as we have spoken of, without qualification or restriction, would have been little better than an invitation to a general scramble. Yet, however this may be, it is established incontrovertibly that the possession was simply permissive; and the original occupants were in collision, the case against the patricians will only be the stronger.

In the various uspurations of the patrician body the restrictions enumerated above were little attended to. The very fact that officials in the army abroad, the portion of the public domain possessed by them—and this could only be through purchase—was violently or fraudulently seized by a powerful neighbour. Large districts were monopolized and rendered more profitable to cultivate the land by slaves than by freemen, who were always liable and often called upon to perform military service. Those who held the chief power in the government conspired to deny the title of the state to those who had possessed; and the demands of the questors added to the domain, the most desperate efforts were made to resist all further assignments of land to the plebeians, that is, to the very veterans who had effected the conquest. To redress these grievances, or rather to moderate them, agrarian laws were from time to time brought forward; but we repeat, these laws never interfered with private property. The wealthy might hold land really their own to any amount. The sole object which the reformers had before them was to check usurpations of the public domain.

We cannot trace the subject historically through the whole existence of the republic, but a few remarks may still be useful. If we look at the birth of the republic, the first, and the character of the distinguished men whose names are connected with the promulgation of agrarian laws, we shall find little reason for considering them as demagogues. Spurius Cassius indeed lived in a time when we can place some reliance on his statements; as he himself a patrician, he had thrice been consul, and had thrice triumphed; and though he was eventually tried and executed for treason, the trial took place not before a plebeian court, as is generally stated, but, as Niebuhr has established, at the Comitia of the patricians. The interference of the usurers he had contended against, were at once his accusers and his judges. For understanding the true character of Licinius Stolo, and the wisdom and justice of his legislation, we will only refer to the forthcoming number of Niebuhr's third volume. In the time of the Cisalpine, it may be thought by many that injustice and tyranny had obtained a title by prescription; but though there may be a question about the policy of the reforms they were endeavouring to produce, it is decided that they were based not upon the purity of their intentions, or the baseness of the majority among those who resisted them by revolution and assassination. Except the presumed guilt of supporting these agrarian laws, not even their enemies could find a blot in their character. Of course, first and foremost, all the usages of land, such as agrumfruendum, were exercised. Velleius was no friend to democrats, but he says, speaking of the elder Gracchus, Vir aliquo vita innocensissimus, ingenio florentissimus, proposito sanctissimus, tantos demeg adnatus virutitibus, quistnas perfecta et natura et industria regem. The whole edict of Licinius Stolo (except in his opposition to the usurpations of the patricians) as to his life most blameless, in ability most distinguished, in principle most upright, in fine adorned with every virtue as high as a man could attain to, when the best gifts of nature are improved by discipline. Licinius, the last of all the fellow Octavius, and his murderer the Pontiff Maximus, Scipio Nasico, were actually offenders under the very law which Tiberius was endeavouring to enforce. On the other hand, the consul Q. Oppianus, who had put down the premeditated massacre of the younger Gracchus and three thousand of his defenceless countrymen, and then erected a temple to Concord, was afterwards convicted of sacrificing the interests of his country for the gold of Jugurtha. For a full examination of the whole of the agrarian laws, there is a historical translation by Hare and Thirlwall, vol. ii. pp. 129–178; and among the ancient writers, Appian's Civil Wars, book i. c. 7–27; Plutarch's Lives of the Gracchi; Dionysius and Livy: Cicero's speech against Rullius, &c.

AGREEMENT, levy. In law, an agreement, contract, or covenant. In its most extended sense, it comprehends a large proportion of the transactions of civilized man in the mutual intercourse of society, and may even be said to form the basis of civil society, as it is defined in the most limited sense, it gives rise to those obligations which it is the object of all government to enforce. The following is a short outline of the law of England, in reference to the latter class of contracts: it may, however, be noticed that, as it appears to be founded, for the most part, on the obvious wants of society and the civil maxims of natural justice, its provisions will be found to coincide, in their general features, with the laws of civilized communities.

1. Assent is the essence of an agreement; hence the parties to a legal and valid contract must assent, or be ready to assent, to it. Thus lunes, infants, and married women are, for obvious reasons, deemed incapable of binding themselves by any engagement. In some few exceptions, the assent is necessary, as in the purchase, for example, of those articles which, by the usual usages of society, have rendered it fit and necessary, the contracts of the two former classes of persons are obligatory on them; or, in the case of a married woman, on her husband, if the sale in her name is not made with her consent or other undue advantage taken by the party who has attempted to secure to himself a benefit by an agreement, will discharge the party who, from ignorance or the operation of external force, has yielded an apparent assent to it.

2. The subject of agreement must not be tainted with illegality; for it would be evidently repugnant to common sense that the law should be called upon to enforce perform.
ance of any act which it has expressly forbidden, or which
contravenes its general policy.

3. An agreement, in order to secure the aid of the law in
carrying it into effect, must have certain qualities mutually
beneficial to the parties, or must be entered into with certain
prescribed solemnities. Courts of justice cannot be called
upon to give effect to every idle or inconceivable promise.
An agreement must either be contracted by a formal instru-
ment signed by the chief settlor or settlor of the property,
and by the party who has bound himself by it, and which is technically
called a deed, or specialty contract; or if contracted in a less
formal manner, by word or otherwise, it must appear that the
parties intended the same to be legally binding. This is the
meaning of lawyers when they affirm that a parole agree-
ment (i.e., an agreement not contained in a deed) cannot be
legally enforced, unless there be a sufficient consideration
to support it. Thus A. cannot found legal proceedings
against B., in respect of any promise made by B. to A., unless
by the terms of the original agreement A. was either to con-
er some reciprocal advantage upon B., or was to put himself
to some specific disadvantage at B.'s request. Upon this
principle it is that, by our law, a promise to make a voluntary
gift can never be enforced, but there is a continuing right,
the party promising, to retract his promised donation,
until the gift is actually completed. An agreement, thus
defective for want of consideration, is called a 'nudum pact-
um,,' a phrase borrowed from the Roman law, though used
in a sense different from that which it bears in the
Roman code.

4. The form of agreements has in some cases been regu-
lated by positive law. The most remarkable instance of this
is Blackstone's Statute of Frauds; and, as the name of the
Charles II.; by which it is enacted that contracts in
such cases, shall not be available, unless there be some
memorandum or note of them in writing, duly signed by the
parties to be charged, or their agents. Doubts have been
entertained upon the efficacy of this provision for
preventing frauds; yet similar precautions have, we believe, been
adopted in other countries, and the legislature has, in our
own time, been induced to extend its application to cases
not within the scope of the original statute.

This doctrine, after appointment of acquiescent agreements,
the various modes by which parties may be released from the
performance of them; and the circumstances under which
they may excuse or justify non-performance, belong rather
to works exclusively adapted to legal students than to a
sketch like the present, but there is a continuing right,
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sketch like the present, but there is a continuing right,
the party promising, to retract his promised donation,
until the gift is actually completed. An agreement, thus
defective for want of consideration, is called a 'nudum pact-
um,,' a phrase borrowed from the Roman law, though used
in a sense different from that which it bears in the
Roman code.
AGRICOLA (RÓDÔLPHUS), one of the most learned and remarkable men of the fifteenth century, was born at a village, variously written Baldun, Bähel, Baffeln, Baffel, or Baffeln, in the Westphalian district of Bremelen from which he was banished about the end of August 1433, not in 1421 as often stated (see the inscription on his tombstone as given in M. Adam’s Apograph, Monument, Heidelburgens, p. 22). In a short notice of Agricola by M. Guizot, in the Biographie Universelle, it is said, but we do not know upon what authority, that his name was properly Huesmann. His first master is also there said to have been the famous Thomas à Kempis. After distinguishing himself at school, he proceeded to the college of Lowfri, where he remained till he took his degree of M.A. He was then solicited to accept a professorship in that college; but he declined an offer which would have prevented him from visiting the chief seats of learning in other countries. According to a custom common to the studium generale of that time, he proceeded to Italy and came to Paris. After remaining here for some time, he proceeded to Italy, and arrived at Ferrara in 1476, where he resided during that and the following year, and attended the lectures of Theodore Gaza on the Greek language. He there wrote an introduction to a new course on the language and literature of Rome. The favour of the duke, Hercules D’Este, and the admiration of the most famous scholars of Italy were liberally bestowed upon the accomplished stranger, who, to add to his merits, are told of him, that he began that year to write Latin prose, and with the Strazzoli in verse. After visiting Rome and some of the other cities of Italy, he left that country, probably in 1479. On his return to Holland he appears to have occupied a chair for a short time in the university of Groningen, and he was also chosen a synode of that city, in which capacity he spent about half a year at the court of the emperor Maximilian I. In the year 1482 he removed to Heidelberg on the invitation of Joannes Dalbargus, the bishop of Worms, whom he had taught Greek, and by whom he was appointed to one of the professorships in the university of Heidelberg. The remainder of his life seems to have been spent partly at Heidelberg and partly at Worms, where he lodged in the house of his friend the bishop. In the last part of his life he greatly delighted in his conversation, he composed a course of lectures on ancient history, which he delivered at Heidelberg, the Elector being one of his auditors. He also after coming the Palatinate, composed the story of the Hebrew tongue, under the tuition of a converted Jew, whom his friend the bishop kept in his house for that purpose. In this new study Agricola had made great progress, when a sudden attack of illness carried him off at Heidelberg, on the 28th of October, 1485, at the early age of forty-two. There was certainly no literary name out of Italy so celebrated as that of Agricola during his age; and, if we except Politian and Mirandola, perhaps not even Italy could produce a scholar equal to him. The most eminent cultivator of the well-known language has in placing Agricola among the first of his contemporaries. We need only mention Cardinal Bembo, Ludovico Vives, the elder Scaliger, and, above all, Erasmus. Agricola indeed may be regarded as the immediate forerunner of the last one, as he occupied a chair which was at that time, although he refrained from doing anything to urge on the crisis. Agricola did not write Latin with all the exactness of Erasmus, his compositions are not less distinguished by a natural ease and perspicuity of style, and often by an eloquence which gripped the ear. In speaking in spots, Erasmus has himself told us that in beauty of diction he placed him on a level with Politian, and in majesty before him. Besides his skill in ancient learning, Agricola was a skilful practicioner of the arts of music and painting. His collected works were published, as it is commonly stated, in two volumes 4to. at Cologne, in 1559, under the title of R. Agricolae Variorum Scholiorum, and of De Vita Compendiosa, the Bibliotheca Universalis, and the Bibliotheca Belgica of Popfen, the principal contents of this collection are his three books De Inventione Dialectica, some letters, orations, and poems, and some translations from Aptholus, Lucian, Philostratus, and others. The authority of which he contains, as commonly stated, his abridgment of Universal History. The work De Inventione Dialectica is the most celebrated of Agricola’s performances. It has been repeatedly printed with ample scholars; in 1534 a commission of it, he was in Paris, and an Italian translation of it was published in 1540 at Venice, in 1567, by Oratio Toscanella. It is considered to have been one of the earliest treatises which attempted to change the scholastic philosophy of the day. Morhof speaks of it as having anticipated in several respects the spirit of Pietram. In the injudicious given by Henry VIII. to the University of Cambridge, in 1535, the Dialectics of Agricola and the genuine Line of Aristotle are ordered to be taught ARABLE LAND, DAIRYING and BARLIC; and in the statutes of Trinity College, Oxford, founded some years later, we find a similar recommendation. Besides the works already mentioned, the following authors may be referred to for further information respecting Agricola: Bayle, Dic- tons, Scholia super Marcus Tullii Cicero, De famis Philosophorum, a Melchior Adamo; — Vie d’Erasmus, par Burigny, Paris, 1757, vol. i, p. 17; Vita R. Agricola, autore G. Gelhenhario Novimagno, in Proror eruditione et doctrina illustrium virorum, Francfort, 1556, p. 83, &c. See also, the works of J. J. Scultetus, on the history of Agricola, from Melanchton, dated Frankfort, 28 March, 1539, in the edition of Agricola’s works published at Cologne. AGRICULTURE. The important subject of the cultivation of the earth may be conveniently regarded in three distinct points of view, namely, practically, historically, and politically. If we were to attempt, as is done in several Cyclopaedias, to give a connected account of the practice, the history, and the statistics of Agriculture, many Numbers of this publication would be insufficient to the subject. We shall, therefore, only point out here some of the larger divisions in which the subject will be arranged. 1. The Practice will be found principally under the heads ARABLE LAND, DAIRYING and BARLIC; and in the margin the size of nine ECRUS, which bear certain testimony that the stories related of its extraordinary wealth in old times are not entirely without foundation. It was called by the Greeks Acragas, and by the Romans Agrigentum. It is situated on the southern coast of Sicily, about two and a half miles from the sea, 37° 11' lat. 13° 28' long. and was a colony from Gela, another city lying on the same coast, to the eastward, founded about Ol. 50, r.c. 560. We first hear of it in connexion with the Lucanians, and called Cyrene, or Agrigentum, of whom many improbable stories are told. Tufius, and others, supposed that part of his power, variously stated by ancient authors, is placed by Dr. Bentley from Ol. 53, 4, to Ol. 57, 3 (r.c. 555 to 559). It seems that he was a prince of considerable ability, who, by the aid of gold, made himself master of the island. His life was short, and he was put to death by the Syracusans. Dittius, was called taurit, a word having in itself no signification of cruelty, but merely expressing the assumption of unconstitutional or absolute power. He was destroyed in a popular tumult, by a general attack of the people, (Cic. Off. 7,) and after his death a democratic government was established for about sixty years, during which time we find the ex tant history no mention of Agrigentum. Anterior to the year 480, we find Therons fighting the city, with the title of prince, (Dod[py, DPlot. xI,) known to two dates of Pindar, composed in honour of victories gained by his chariots in the Olympic games. Therons was a valiant and popular ruler. He reduced Himer, a town on the northen
coast of Sicily, the tyrant of which, Terillus, sought help at Carthage, and gave occasion to the first important attempt of that city to extend its dominions in Sicily. A large army of Carthaginians passed over, and besieged Himera, but was defeated with great slaughter by the combined force of Agrigentum and Syracuse. A vast number of prisoners were taken and made slaves on this occasion, on which it is stated, probably with some exaggeration, that 400 fell to the share of many individual citizens, and yet the greatest part were retained for the public use, and employed in those stupendous buildings, of which we still admire the remains. Theron died Ol. 77, 1, B.C. 472, and Thrasius, his son, a man of licentious and cruel temper, succeeded. He provoked a war with Syracuse, in which he was defeated; and his power probably being shaken, he was expelled by the Agrigentines, who again established a democracy.

When the Athenians invaded Sicily in the Peloponnesian war, Agrigentum remained neutral. We find few notices of it again till B.C. 408. At that time the city flourished, according to Diodorus, in wealth and luxury, such as no other state but Rome itself had exhibited. Of the means by which such wealth was acquired, we know nothing, except that extraordinary fertility is ascribed to the soil, and that the resort of foreigners makes it likely that it was a great commercial depot. The number of citizens is stated by Diodorus (xiii.) at 20,000, and of foreigners settled there 180,000 more, a number probably much exaggerated. In B.C. 406, this prosperous city was again attacked by Carthage. The residents were supported by a body of Italian mercenaries, commanded by a Liturgian, Petippus; and a powerful diversion was made from without by Syracuse. But civil discord and insubordination rendered fruitless a resistance, which for some time was spirited, and might have been successful. The Carthaginians completed lines of circumvallation; and when the place was reduced to extremity by hunger, the bulk of the citizens passed the enemies lines in a winter night, and reached Gela in safety. The town was preserved by Hamileas or Limleos, the Carthaginian general, for winter quarters, but razed in the following spring: the pictures, statues, and most valuable spoil was taken to Carthage, the rest sold. The vacant town and territory of Leontini was given by the Syracusans to the fugitives.

At the foot of the high mountains which bound the plains of the Acrageans, a low ridge of hills extends from east to west. The southern side gently slopes towards the river, while the northern and western sides fall much more steeply towards the Hyppa, which still flows, though with a current much diminished. (Magna Gracia.)

The most remarkable objects mentioned by Diodorus in his account of the town, (Book xiii. c. 82.) are the temple of Jupiter Olympius; and an artificial lake, seven statius, or nearly a mile in circumference, and 20 feet deep, fed constantly by running streams, well stocked with fish, which were eaten at the public entertainments; the pond was also a favourite haunt of swans. This, before the war, was filled up in consequence of neglect, and turned into orchard or garden ground, which afforded a considerable revenue to the town. He also mentions the tomb of Theron as a considerable work. The temple of Jupiter is said by Diodorus to have been the largest in the island; indeed, it was so described by Euphorus, it was the largest Grecian building applied to sacred purposes. Its dimensions, as given by him, are—height, exclusive of the platform, 120 feet; length 343; breadth 60. It was of the Doric order, but optical, that is, it had an external portico, the interval between the columns being filled up by wall. This deviation from the general practice arose probably from the impossibility of finding stones large enough to serve as epistyles; for the distance from centre to centre of the columns being 30 feet, a series of masses of stone of that length, and of corresponding thickness, would have been required, had not the superincumbent entablature been sustained by a continued wall. As it is, many blocks of the entablature weigh eight tons and upwards. The columns are engaged, that is, more than half their mass projects from the wall. The circumference of the external and visible part is 20 feet, the diameter, as given by Mr. Cockerill, 13. Their proportions cannot be exactly ascertained; they are conjectured by Mr. Cockerill, from other examples at Agrigentum, to have been 47 diameters in height. The echnis of each (that is, the swelling part of the capital) was formed by two stones, each a quarter of the whole capital, had the pillar been disengaged. Two of them at least remain, each weighing (by computation we presume) 215 tons. These enormous masses were raised to the height of 70 feet from the ground. To the inside of the building, as Diodorus expresses it, they are square, and 12 feet in diameter, that is, there is a series of pilasters within, 1 foot in breadth, corresponding in position with the external columns. The columns were built in courses of masonry, not single blocks, so that in fact they formed an integral part of the wall. The fillings are said by Diodorus, and the account is verified by recent travellers, to be wide enough to contain a man in their hollow, as in a ruin.

When the town was first taken by the Carthaginians, the temple was completed except the roof, and this deficiency was never supplied. In the eastern pediment was sculptured the war of the Giants: in the western, the war of Troy. Within, the temple was divided into what we may call a nave and two aisles; and it may assist the reader's comprehension to state, that according to Mr. Cockerill's measurements, (whose description of the temple, in the 4th book of Stuart's Antiquities, is the latest and most complete,) the length of the nave was 18 feet more than that of the nave of St. Paul's, and its breadth 2 ft. 2 in. greater. The walls of the

war against Carthage, Ol. 95, 4. B.C. 397: but this may, perhaps, refer only to the Agrigentines established in Leonti. Ol. 117, 4. B.C. 319, they made an attempt to recover their ancient power in Sicily, and for a time seemed to prosper, but desisted from the attempt in the second year, in consequence of experiencing a defeat from the Syracusans. The prosperity of the city at a somewhat later period is rendered probable by a statement in Diodorus, (xxii. c. 14.) that Pyrrhus received from the Agrigentines 18,000 foot and 800 horse 'equal to the Epipot troops,' when they admitted him into their city. About B.C. 290, it was [c. 104] left to the state adhered to Carthage. During the struggle in Sicily between the Carthaginians and Romans, it was taken, retaken, and taken again; and suffered very severely in all these changes. Little more is known of its history, and there would be no profit in asking to att the supposition of the notices of a city which never again filled an important part.

For an account of the modern town, see GIKONTI.

The situation of Agrigentum is said by Mr. Wilkins to be one of the most beautiful in Sicily. 'At the foot of the high mountains which bound the plains of the Acrageans, a low ridge of hills extends from east to west. The southern side gently slopes towards the river, while the northern and western sides fall much more steeply towards the Hyppa, which still flows, though with a current much diminished.'

AGRIGENTUM. FROM CAPT. SMITH.

Of the subsequent history of Agrigentum only scattered notices remain. It is said, by Plutarch, to have been rebuilt by Timoleon, which must have been between the years B.C. 344 and 337. We find it stated, indeed, that the Agrigentines united with Dionysius the elder, when he declared
interior were strengthened by massive pilasters, supporting an entablature upon which stood a row of statues, as the Greeks called male figures when thus applied. These colossal figures were about 25 feet high, and supported an upper entablature, which rose about 110 feet above the floor of the temple. Fragments enough to restore one of these giants were collected by Mr. Cook. The width of the chest is more than 6 feet, the head is 3 ft. 11 in. high, and 3 ft. wide. The style of sculpture approaches that of the Egyptian marbles: these giants must, however, be consi-
derably later in date. Fazolli says, that 'one part con-
ected with three giants and some columns was long standing, but fell, December 9, 1301, and the common people still call the spot the Palace of the Giants.'

A thin coating of plaster, resembling the finest marble, covered the whole building. The breadth, as given by Dio-
dorus, is clearly wrong, unless we suppose him to mean the cell, or nave of the building, in which case he is not very far from the true dimensions as ascertained by measure-
ment. We may here remark, that some modern works give the height, as stated by Diodorus, at 220 feet. Wesseling, however, reads 120, and the other is so glaringly out of pro-
portion, that there can be no doubt which is right. The di-
mensions, given in English feet by Mr. Cookerill, are:

<table>
<thead>
<tr>
<th>Description</th>
<th>Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme length of basement</td>
<td>369 5</td>
</tr>
<tr>
<td>of cell</td>
<td>162 8</td>
</tr>
<tr>
<td>Height of podium or basement</td>
<td>68 6</td>
</tr>
<tr>
<td>From the basement to the top of the capitals</td>
<td>71 6</td>
</tr>
<tr>
<td>Entablature</td>
<td>25 6</td>
</tr>
<tr>
<td>Tympanum</td>
<td>23 6</td>
</tr>
<tr>
<td>Total height</td>
<td>120</td>
</tr>
</tbody>
</table>

Of this splendid building, with the exception of the base-
ment, scarce one stone remains above another. Traces of the walls, however, have been discovered by excavation, enough to enable the skilful architect to determine the ground plan with accuracy. Not a single column remains standing, but two capitals are still visible on the ground, one with a portion of the entablature attached,—which excite the wonder of the visitor by their gigantic size.

We have described at length this that most remarkable of the Agrigentine ruins in size and construction: of the others, we must speak very briefly—they differ little from other Greek remains. At the south-east angle of the ancient city, stood the remains of a temple formerly dedicated to Juno Lucina. Further to the west, stands the temple of Concord, in better preservation, owing to its having been converted into a Christian church. More recently it was restored according to the original design, by the late king of Naples. The portico is perfect, and the columns in good condition. These temples of the Doric order are nearly of the same size and plan. Both are peripteral, or surrounded by a portico, consisting of six columns in front and thirteen on the side, and their dimensions are about:—length 124 feet; breadth 54. They are situ-
ated on the immediate edge of an abrupt rock, and form most striking objects from the plain below. A good view of them and the surrounding scenery is to be seen in Mr. Wilkins Magna Graecia. Of the temple of Heracles but one pillar remains; of that of Asculapius, only three. The area of the fish-pond is still visible; it is now a garden, as in the time of Diodorus. The form is traceable, and the di-
mensions seem to be larger than those given by the his-
torian. Other remains of antiquity exist, and among them, one is said to be the tomb of Theron, but there is nothing further to call for particular description.

Many stories of the extraordinary wealth and profuseness of the Agrigentines are told, which are not without interest; they may be summed up in the pithy observation of Empe-
docles, that himself a native of the city, that the Agrigentines built as if they were to live for ever, and feasted as if they were to die on the morrow.

AGRIMONIA is a name of a plant of the rose-tribe, to which the English give the name of herb agrimony. It is known from all the other genera of the same tribe by its having only two or three pistillate enclosed in the deep tube of its calyx, from seven to twenty stamens, and small-
notched petals.

The common species, Agrimonia eupatoria, is an erect, hairy, herbaceous plant, frequent by the sides of hedges in fields, on the skirts of woods, and in similar situations all

over England. Its lower leaves are interruptedly-pinnate,
with the leaflets of an oval form, and coarsely serrated. When bruised, they yield a slight, but pleasant aromatic odour. The stem is nearly simple, and a foot and half or two feet high. The flowers, which are small and yellow, are succeeded by little bur-like fruits.

The leaves, which are aromatic and aromatic, have been found useful in the preparation of fever-drinks, and for the cure of slight inflammation in the mouth or throat; on this account agrimony is always reckoned one of our wild medi-
cinal plants, and is often employed as an ingredient in herb

Agríopes (Agripus, Civ.) in ichthyology, a genus of acanthopterygious fishes, belonging to the family which M. Cuvier denominates Jews Cuvisés, and which are dis-

Agríopes come from most other genera of fishes, is that they have only nine rays in the pectoral fins, a number very rarely found in this class of animals. Three species are enumerated by MM. Cuvier and Vol.:

1. The Agriopus Torus. This fish inhabits Table Bay and the seas around the Cape, and is called by the Dutch colonists Zeelboord or Sea Horse. This fish exceeds two feet in length, and is common in the markets of Cape Town.

2. The Warty Agriopus, (A. verrucosa,) is so called from having the skin of the head and body entirely covered with prominent conical tubercles, surrounded at the base with small papillae. It grows to the same size, and inhabits the same localities, as the preceding species.

3. The Agriopus Pervus, is found in the neighbour-

Agríppa (Henry Cornelius) a remarkable personage, who may be ranked with his contemporaries, Paracelsus and Cardan, as at once a man of learning and talent, and a quack. It may be added that each of the three was probably to a certain extent the dupe of his own pretensions. Agrippa was born at Cologne, of a noble and ancient family, on the 14th of September, 1486. His first employment was as secretary at the court of the Emperor Maximilian, after which he served in the wars in Italy, where, having repeatedly signalized himself by his bravery, he obtained the honour of knighthood. About his twentieth year he seems to have assumed the character of a scholar, and to have commenced a wandering life. The profession which he took up was that of a physician; but he allowed himself also to be regarded as an alchemist, an astrologer,
and even as a practitioner of magical arts. Not satisfied even with this extensive range, he thought proper to set up like-wise his name as an author, and to publish, with occasional excursions into other departments of literature and science. The effect of that age of all this pretension, supported as it was by unquestionable talent and by real acquirements of great extent, was to raise Agrippa, for a time, to the rank of an oracle, and to produce the most striking proofs that a well-versed and liberal education was capable of doing. His excessive imprudence, however, was continually involving him in difficulties; and especially, having by some of the effusions of his satiric spirit provoked the enmity of the monks and the church, he experienced the consequences to the end of his days of having marked out for himself by them the character of a fugal lute, this singular character died at Grenoble, in 1535. He had been thrice married, and had several children. The works of Agrippa were published in two volumes, octavo, at Leyden, in 1536, and also at Lyons in 1609. The most remarkable of them, and the only one which is now remembered, is his Treatise On the Vanities of the Sciences, which is a caustic satire on the kinds of learning most in fashion in that age. Bayles has dedicated a very long article on Agrippa, which was inserted into his book for more information respecting him. See also Gabriel Naudé's Apology for the Great Men who have been suspected of Magic.

AGRIPPA (HEROD, son of Aristobulus), king of Judea. [See Herod.]

AGRIPPA (MARCUS VIPSANIUS) was born about the year 63 B.C., and thus was within a few months of the same age as Octavius, afterwards the emperor Augustus, with whom his whole destiny was so intimately united. In the first part of the life of Julius Caesar, at the time when he was about to leave Italy for Germany, he had already received that strong impression of the emperor that was to follow him through life, and which he retained even after the death of his father. In this he had already shown a mind of extraordinary nature; for he should find in a youth of his own age and station, he could get to be addressed by his name, and be heard and admired by him. Agrippa, who was already in history as the companion of Octavius, while yet at Apollonia. The death of Caesar brought them both to Rome, and Agrippa appears for the first time in public life as the promoter of an accusation against Cassius, one of the assassins. Again, in 40 and 41, when he was still only twenty-two years of age, he joined with his cousin Marcus Vipsanius, whose character against Lucius Antonius, and indeed the capture of Persia, which brought that war to a conclusion, was a great object of public consequence, and which Agrippa, who never had the power to interfere, was present at the battle of Philippi, and in the consulate of the year 37 B.C. (or perhaps the year before his consularship,) he added to his reputation by a considerable victory over the Aquitani, and rivalled the glory of Julius Caesar by leading a second Roman army against the Rhine. A large portion of this year he was employed on the part of Augustus in preparing a fleet to oppose Sextus Pompeius, who desired superiority at sea, and enabled him to blockade the whole coast of Italy, so that it was difficult for Augustus to provide a fleet, much more to train a body of seamen to the marines of naval warfare. The fertile genius of Agrippa was able to meet the difficulty. By cutting a passage through the celebrated barrier of Hercules, which separated the Lucrine Lake from the sea, he compelled the Gallic provinces to pay the taxes of the emperor into a serviceable harbour, giving it the name of Portus Julius. In the following year he commanded the fleet of Augustus, in the victory of Myla; and afterwards in that more decisive contest which annihilated the power of Sextus Pompeius, Agrippa got the whole of the fleet under his own command. In the year 33, though already of consular rank, he held the office of sódile, his administration of which was distinguished by the restoration of the numerous aqueducts, and the erection of fountains throughout the city. In the naval war against Cæcina, Agrippa was his enemy, but he was already a rival in the empire, Agrippa was again the admiral of the successful fleet. In reward for those services he shared with Mæcenas the full confidence of Augustus, who associated him with himself in the important task of reviewing the senate; and in B.C. 28 again raised him to the consulate, giving him, at the same time, in marriage his own niece, the sister of the young Marcellus. Agrippa had indeed been married previously to the daughter of his own friend, Atticus, by whom he had a daughter, Vipsania, afterwards the wife of Tiberius. Attica may have been dead, or it is not improbable that he divorced her to make room for Marcella. A third consulate awaited him the year following, in which he was occupied in dedicating to the emperor, in the temple of Apollo, a number of magnificent inscriptions. The emperor, who was about to celebrate the Jubilee of the Empire, command ed him to proceed to the temple of Aesculapius at Athens, where vast sums of money had been collected for a great public work. Agrippa, the year following, married in marriage to the daughter of the Cantabri, and afterwards had the honour of representing the emperor at the marriage between the unfortunate Julia and Marcellus, who seemed to be the destined successor of the Augustan family. The notion of any claim, founded on hereditary descent, was not yet established among the Romans; and the splendid deeds of Agrippa, independently of his connexion with Marcella, gave him in some respects a superior title. A rivalry sprang up between them, and this was encouraged by the ambiguous conduct of Augustus, more especially during his severe illness in 22, when, apparently on his death-bed, he publicly sent his ring to Agrippa. On the recovery of the emperor, Marcellus resigned his influence, and Agrippa was sent by Augustus into honourable retirement at Perusia. Death in a few months removed his rival, and he was not merely recalled to Rome, but, at the request of the emperor, divorced his wife Marcella to marry the young Julia. For the first time in the family of the Caesars, there had again been in arms for more than two years. Agrippa was now looked upon as the undoubted successor of Augustus; and in the following year was so far associated in the imperial dignity as to share the tribunician power with the emperor for five years. In 17 he proceeded to the East, where his administration seems to have given general satisfaction, more especially among the Jewish nation, who benefited largely by his protection. On his return from that part of the world, his last military duty was to quell a mutiny on Mount Ida, which his presence was sufficient. In Italy he received a renewal of the tribunician power for a second period of five years, but lived only a few months. He died in March, A.D. 12. His family, by Julia, were the two young Caesars, Caius and Lucius, Julia, Agrippina, and Agrippa Postuma, born, as his name imports, after the death of his father; and it has been observed that every one of them came to a premature end. (Appian, Flutarch, Dion, Sotomius, &c.)

AGRIPPINA, the daughter of M. Vipsanius Agrippa and Julia, the only child of Augustus, married Germanicus, the son of Druanus, and nephew of Tiberius, to whom she bore nine children. Of these, the eldest died in his infancy, but the remaining six were Caligula, Germanicus, Tiberius, Drusilla, and the second Agrippina, the mother of Nero. On the death of Augustus (A.D. 14), Germanicus and his wife were with the army on the banks of the Rhine, where they had much difficulty in restraining the mutinous soldiers from proclaiming Germanicus in opposition to his uncle. On this occasion Agrippina, by her determined bearing, shewed herself worthy of her descent from Augustus, and the following year she had again an opportunity of evincing the same spirit, in a general panic occasioned by an exaggerated report, that the army of Cæcina had been cut off by Armi-nius, and that a large body of the successful Germans were on the point of crossing the Rhine, and inundating the Gallic provinces. A report was spread that Agrippina, in the absence of her husband, prevented this disgraceful expedition. In the year 17, the disturbed state of the East afforded the emperor a pretext for recalling Germanicus from the scene of his success in Germany, and in consequence deposed Agrippina, his wife, and was with him in Syria when he fell a victim, at least such was his own confession, to the arts of Piso and Planicia. Germanicus was not without suspicion that Piso and his wife had been urged on by the emperor and his confidant further, Livia, to unseat her. Agrippina was young, and her proud temper, and submit to the evil times. Disregarding his prudent advice, she at once proceeded to Italy, and at Brandusium seemed to court the attention of the people as she left the vessel with the youthful Caligula and her youngest infant, bearing herself the hume-
rual urn of Germanicus. The whole tenor of her conduct was such as to call upon her the anger of Tiberius, and when her cousin Claudius Pulcher (A.D. 26) was about to be the object of a similar attack, she appoium forecurred, she ventured to express her resentment to him in person in no measured terms. Agrippina had now remained in widowhood for seven years, when she requested the emperor to take pity on her single state and remarry her. Tiberius declared that the husband of Agrippina would be a dangerous enemy, and he parted from her without giving any answer to her pressing entreaties. The artifice of Sejanus completed the breach between them. By his agents he had managed to make out that there was an intention on the part of Tiberius to remove her by poison, and Agrippina, not accustomed to conceal her feelings, for ever offended the emperor, by plainly exhibiting to him her suspicions. She was banished to the island of Pandataria, and at last closed her life by starvation, October 18th, in the year 33. Her two eldest sons, Nero and Drusus, were also the victims of Tiberius. (Tacitus, Suetonius.)

AGrippina, the daughter of Germanicus and the Agrippina of the preceding article, was born in the chief town of the Ubi, in the second Roman colony, calling it after herself Colonia Agrippinenista (now Cologne). She was but fourteen years of age when Tiberius gave her in marriage to Cn. Domitius Aenobarbus, by whom she had a son, who at first bore the name of Thaddeus, but after the death of Tiberius, Emperor of Rome. After the death of Domitius, her disgraceful conduct was made by her brother Caligula a pretext for banishment; but on the accession of Claudius, she was recalled from exile and became the wife of Crispus Passiennus. There was some doubt whether Passiennus was her first or second husband, though the probability is in favour of the latter supposition. By assassinating her husband Passionus she soon made herself agreeable to the senate by her attentions to the affections of her uncle, the Emperor Claudius. Such a connection was held to be incestuous even among the Romans, but on the death of Messalina, the complaisant senator, influenced by the intrigues of Agrippina, affected to take the emperor's part, and compelled her to take a step so essential to the welfare of the state (A.D. 50). Claudius yielded, and for the fifth time entered the state of matrimony. The control of the beautiful Agrippina over her aged husband was unbounded, and her first object was to secure to her own son such expectations as to make him the heir of her dominion, the son of Claudius by the infamous Messalina, was more equitably entitled. The marriage of Domitius to Octavia, daughter of the emperor, and his adoption by the emperor himself, from which he derived the name of Nero, at once humbled the Britannia, who in this manner, Agrippina completed the object of her ambition by poisoning her imperial husband. Her son, now at the head of the empire, was not willing to allow his mother that share of the authority which she was desirous of assuming. Her power over him, as well as that of his wife, was for some time in danger, but she recovered it by means of an incestuous intercourse with him, the beauty of Poppaea finally destroyed even this influence; and in the sixth year of his reign Nero determined under the encouragement of Poppaea to remove his mother from the world by her own art. But it was not easy to poison one who, familiar herself with poison, was ever on her guard. Nero, therefore, changed his course. After an unsuccessful attempt to effect her death near Baiae by means of a vessel with a false bottom, which had been designed for this purpose, she was openly dispatched by assassins (March 60 A.D.). Her last words as she presented herself to the sword of her murderer were Ventrem feri! Strike the womb which gave birth to such a son. To enumerate all her deceptions, all her murders and other crimes, and to describe a prince who held such a much larger space than we think it necessary to assign to them. We will only add, that she wrote some commentaries of which Tacitus availed himself for his historical writings. They are also quoted by Pliny, vi. 8. (Tacitus, Suetonius, Dio.)

AGrostis is a genus of grasses, consisting of a considerable number of species with loose-branched, capillary panicles of flowers, and a creeping habit. Among British grasses, it is at once known by the glumes (a), or outer scales, and the two inner scales of a membranous texture, and containing but a single floret; while the panes, or inner scales, are short, very thin, almost transparent, and in two number; the larger of them occasionally having an awn at its back.

Two species only are native to this country,—one of which, A. vulgaris, is found everywhere in dry, exposed, barren situations, and is of very little value to the farmer, except for its earliness; the other, A. alba, is equally abundant in marshy places, where it forms a valuable pasture. Under the name of Irish flax-grass, this species has been the object of much attention from experimental agriculturists, some of whom, as Dr. Richardson, have extolled its qualities very highly as a marsh-fodder; but the experience of others does not confirm their opinion; nor does it happen that in England to the degree that is represented in Ireland, where its vigour is such as to have led to the belief that the Irish plant is a distinct species, called A. stolonifera. In England it is best known, along with A. vulgaris, under the name of quitch, or quicks, and generally occurs to farmers as troublesome weed, in consequence of the rapidity with which, by means of its creeping, rooting, vivacious stems, it spreads and overruns pasture and garden-ground.

AGUE. In treating of the individual diseases to which the human body is subject, it would be out of place in this publication to enter into the details which are proper and indeed necessary in works purely medical. All at which we can aim is to endeavour to convey a clear and correct conception of the nature of each disease, the signs by which its approach is denoted, the symptoms which demonstrate its existence, the circumstances which predispose to it, the causes which actually exist in its precipitations by which its attack may be averted, and the remedies which experience has shown to be the most effectual in curing it.

With the exception of those who have studied medicine as a profession, even the outward class in this country are grossly ignorant of everything relating to this subject. Yet there is no reason why sound knowledge may not be acquired by every man on this subject as well as on chemistry, for instance. That any one who does not study medicine with a view to making it a profession, should make himself as familiar with its details as to be able to dispense with the assistance of the physician when either himself, or any one in whom he takes an interest, is afflicted with a serious disease, is not indeed to be expected, and the attempt would be quite absurd. But the more real knowledge any person can acquire on subjects of this class, the better he will be able to guard against the ordinary causes of disease; the more surely he will know, at the very first moment of its attack, when any serious malady assails him; the better he will be able to communicate with his physician and his physician with him; and the more effectually he will be enabled to co-operate with whatever plan of treatment may be adopted for the removal of his disease.

For these reasons we conceive that there is no part of our conduct more likely to be of advantage to the public, than that of rendering intelligible, in all its practical bearings, to the unprofessional reader, the nature, the causes,
and the treatment of the more important diseases which afflict, and shorten, and destroy human life.

Of these diseases, the first of which we have to treat, is fever, which prevails in all climates, and in all seasons, and under all circumstances; a disease in which the peculiar interest which once attached to it, at least in this country, from its continual recurrence and general prevalence, is now greatly diminished. Ague belongs to the typhus, diarrheal, and is indeed commonly considered as a paradigm or example of fever. These fevers are divided into three great classes. In the first the morbid phenomena that constitute the disease continue for a certain length of time; then they wholly disappear; after having been present in the body, the repetition and return of the phenomena alternate with one another for many times. The period that elapses between the cessation of the febrile phenomena and their recurrence is called an intermission. Such fevers, then, as are attended with a cessation or intermission of the febrile symptoms for an observable space of time, are for this reason called intermittent fevers or agues. This is the first class. In the second class the febrile symptoms do not altogether disappear, but merely diminish; they do not remit, they only return; for this reason this second class of fevers are called remittent fevers. In the third class, during the whole course of the disease, there is not only no retracement of the symptoms, but no notable diminution of them. Such fevers are called paroxysmic, or ague, and is completely formed, such they continue to be with scarcely any variation until its close. For this reason this class of fevers is denominated continued fevers.

The concourse and succession of phenomena which constitute a paroxysm or intermittent fever, or an ague, is therefore a fever consisting of a succession of paroxysms, between each of which there is an intermission or more or less complete.

Of the nature which constitute a paroxysm of fever are the following: The person is affected first with a loss of mental vigour, commonly indicated by inaptitude to attend to his usual avocations, or by dulness or confusion of mind. If not simultaneously with, very shortly after this mental depression, a sense of heat in the skin occurs, the person is languid, listless, disinclined to move, while every movement is performed with difficulty, and the effort to move is exhausting. The muscles or organs of motion are not merely weak, they are, at the same time, the seat of several uneasy sensations; the muscles of the extremities, and of the back especially, are affected with the sensation of soreness, as if they had been over-exercised, and this soon increases to a degree of pain, which is often very severe.

The next train of symptoms is ushered in by palpitation of the heart, which is a great degree of rapidity in the pulse, of the external parts is diminished; and the skin over the whole body is in a morbid state, as is drawn tight. Some degree of coldness is now felt, which at first is so slight as scarcely to be observed, but the sense of coldness is increased in a sensation of cold, which he commonly feels first in his back, but which thence extends over the whole body. This sensation of coldness increases until it becomes so severe as to produce a tremor in the limbs, amounting sometimes to trembling and shaking, and almost always producing distinct shivering.

From the first approach of the mental and physical languor, the pulse becomes weaker than in health. As the sense of cold comes on the weakness of the pulse is still greater, and it is at the same time always more frequent than usual, often irregular, and sometimes intermittent. The respiration also is shorter, feebler, and more frequent than in a state of health. The appetite fails; there is sometimes even an aversion to food; frequently the taste of the appetite is succeeded by a sense of nausea and sickness, which occasionally increases to vomiting, and with the matter vomited there is, for the most part, a mixture of bile. From the commencement of the paroxysm there is generally some degree of thirst, which is increased, not merely from the production of cold sweat, which is the usual cause of thirst, but from the dryness and clamminess of the mouth and fauces. Not the secretions of the mouth alone, but all the secretions of the system are diminished. The excretions also are lessened in quantity, and especially the urine, which is scanty and nearly colourless, and the alvine evacuations are usually altogether suppressed. Even in this stage, headache may come on, but it usually does not appear until the following.

These symptoms having continued for some time, at length disappear, and a remarkable change takes place in the character of those that succeed. The sensation of cold is not continued; they again return, but not in the character of ague, but more resembles that of heat, the skin now becomes moderately warm, and the body becomes more hot and turgid. The pulse becomes more regular, strong, and full, the respiration fuller and more free, and the nausea and vomiting are less urgent; if before there were a fever, the perspiration now increases in severity; if there were none, it is now sure to come on, and while the sensibility is increased, the intellectual operations are more and more disorders.

By degrees these symptoms are successively, and are succeeded by a different train. A moisture now breaks out first on the forehead, which by degrees extends over the whole body. As the perspiration flows, the heat abates; the pulse becomes slower and softer; the respiration more free; the nausea and vomiting cease; the thirst diminishes; the secretions and excretions are restored; most of the functions return to their ordinary state, and the patient is left comparatively free from disease, feeling only weak and exhausted.

Such are the phenomena that constitute a febrile paroxysm, and such a phenomenon, when once it is completely formed, obviously constitute three distinct states, or, as they are called, stages or fits; viz., the cold, the hot, and the sweating stage.

After one such paroxysm has remained for a certain length of time it ceases; after it has ceased for a certain length of time, the same series of phenomena again arises, and observes the same course as before, and this alternation is repeated many times. It has been already stated, that the length of time from the end of one paroxysm to the beginning of another is called an intermission, while the length of time from the beginning of one paroxysm to the beginning of the next is termed an interval.

Different names are given to the different varieties of this fever, according to the symptoms which they present. If one paroxysm be succeeded by another within the space of twenty-four hours, the ague is termed a quantic; if after forty-eight hours, a tertian; if after seventy-two hours, a quartan; if after ninety-six hours, a quintian. Those with longer intervals are usually termed erratic. The most common form is a tertian; the next most common a quartan; the next a quintian; the least frequent a quantic. Aques are likewise divided into vernal and autumnal, the vernal beginning in February, and the autumnal in August. The former is common, the latter rare; the former are usually milder and easier cured, while the autumnal are often severe and obstinate.

It sometimes happens that two intermitting attacks attack the same person at the same time, and this may be the case for several days, during which the patient may be in the midst of a paroxysm, and in the midst of an intermission, or a tertian, with two paroxysms on each alternate day, and one only in the intervals. The double tertian also varies. It may occur with two paroxysms on the first day, none on the second or third, two again on the fourth and fifth, none on the sixth, and the paroxysm on the first day, another on the second, but none on the third.

But whatever be the form of fever, the nature of it is essentially the same: yet the form is of some consequences, as denoting the severity and tendency of the disease; for the tertian is far more obstinate than a tertian, which a tertian is apt to change into a continued fever. Quartans, for the most part, appear in autumn, while tertians are the most common in spring.

Whatever be the form of fever the duration of the pa
The disease is different in every different case. The shorter the paroxysm the shorter the intermission; the shorter the intermission the longer the paroxysm. An extension of the period of the intermission, or a postponement of the period of attack, is the general rule. It is generally, if not uniformly, the case that the intermission is about to lapse into a continued remission or a continued fever.

From the preceding history of the disease it is clear, that the distinguishing character of intermittent fever is the regular return of the paroxysm at a fixed period, the entire course of the disease being in their effect the renewal of it after a specific interval, according to the species of the ague. Nevertheless, though these distinct intermissions and accessions are always apparent when the ague is regular, yet in the most severe and formidable cases it entirely loses its intermittent character and assumes a remittent, or even a continued form.

Innumerable cases, which are commonly considered and treated as continued fevers, are really of the nature of intermittents, and of this the older physicians, who had so many more opportunities of witnessing this malady in its more formidable aspect than the physicians of the present day, were fully aware. 'Intermittents,' says Sydenham, 'take their names from the intervals between the fits. This is sufficiently plain to test, in the common seasons of the year wherein they happen, namely spring or fall, be considered; but some of these have no very visible character whereby they may be distinguished from continued fevers, though they really participate of the nature of intermittents. In general, the period of the paroxysms is very distinctly obvious; but when annual intermittents come early, namely, in July, and are common, these do not immediately assume their own proper shapes, for they imitate continuers. If, in the case of a person, who has been during the violence of the constitution of the season being a little quelled, about the end of autumn, they put off their disguise, and then openly appear to be intermittents, either tertians or quartans, as indeed they really were at first. And if this be the case, the fits of intermittent fever shall be observed in our prescriptions, while we mistake fevers of this kind which are to be accounted intermittents, for real continued fevers.'

The apparent change of character or type here stated, dependent on the severity of the disease, is constantly observed. If a fever, truly of an intermittent nature, be of a bad kind, it often commences with the form of an alarming and dangerous continued fever, but as the disease declines and becomes milder, the intermission becomes apparent, and the true nature of the malady manifest, while, if an intermittent fever is truly of a good kind, it hardens, and continues as such. But it is also possible the disease may be continued as a continued fever, and only the number of paroxysms be increased, as in the case of a man who, having a tertian fever, had many accessions, and his continued fever increased in the same way. In the case of a man who has a tertian fever, and is changed into a continued fever, it is possible the disease may never become a continued fever. Hence in all the densely wooded parts of England both intermittent and remittent fevers are rife. This is especially the case in the woody districts of Kent, Sussex, Hampshire, Wales, &c. The jungle of India is composed of woods and trees, and the disease is there a continued fever, but intermittent in the low grounds. The fever which exists in rice grounds, for the same reason, are notoriously productive of it. But it is curious that the clearing of a wood by the farmer makes the evil. Dr. Rush states that, in Pennsylvania, epidemics invariably follow the clearing and cultivation of forest lands, and that they do not disappear until after many years of continued cultivation. The same remark has been made in other quarters; and it is said that the same fowl is a comparatively healthy when full of woods, has become nearly depopulated since they were cut down. The shade of the trees keeps the sun in a good measure from the wet ground; and the respiration and humidity of the wood, as they absorb the full action of the sun. Meadow land, imperfectly drained, contains in abundance the two conditions, moisture and decaying vegetable matter, and is in England a frequent and extended source of this poison. It is commonly considered that a large space of land and all the condition of a marsh, a swamp, a thick and damp wood, or an undrained meadow is necessary to the production of the poison; but while it is not easy to fix the minimum of the space that is requisite, it is quite certain that an exceedingly small space is sufficient. Trees and thickets show the effects of it, and the folly of creating artificial marshes as ornaments in parks and gardens. 'Hereafter,' says Dr. Macculloch, 'perhaps an English gentleman will be as much surprised that his neighbour should die of a fever, as his door, that his feudal ancestor should have built his castle in a marsh, and inclosed it with a putrid mound. The pond which has been constructed for a few gold fishes, or the river which meanders through the woody valley, is often the scene of the death of a part of the inhabitants, and the product of a few bunches of rushes, or even a splendid display of water-lilies, are dearly purchased at the cost of the fevers and the tooth-aches which are the torments of the owner's family, the siring wife who is his own torment, and the scaitas which is the terror of his poorer neighbours.'

Wherever generated, this poison, either mechanically mixed or chemically combined in the air, is capable of being conveyed in unimpaired power to a considerable distance by
currents of wind. The influence of the Pontine marshes, situated at a distance of fourteen miles from Rome, is often felt in that city.

In warm climates, where this poison is generated in the highest degree of intensity, it sometimes proves suddenly fatal to individuals of a ship's crew when the vessel is several miles from land. It is said that with the land wind only seems certain that the poison can be carried as far as the smell of the land is perceptible. A memorable instance of this occurred in a vessel that was five miles from shore. The wind suddenly shifted; the smell of land was perceptible, and many of the neighboring vessels were warned by the people on board, and the danger duly appreciated; every one that could do so hastened below to save himself from the noxious breeze. Some of the crew, however, were unavailingly employed on deck; the armorer of the ship was disabled, and the commander to ground. Persons who work on the chain cable, and was seized with fatal cholera in the very act in which he was engaged. Of the men that remained on deck, several died of the same disease in a few hours, surprising that both living and dying demonstrated the very first perception of the land smell; and in our own country it is often conveyed by currents of wind to a distance of several miles. It frequently proceeds to the hills of Kent, for example, several miles distant from the marshes of Erith, Nore, or Thames, and brings the awful visitation to bathe its sadosaic in its diseases, and to arise in situations most favourable to the generation of this poison appears to be an exceedingly formidable conductor of it. Sir John Pringle, who had many opportunities of observing this fact in the campaigns in Flanders, about the middle of the century, finds that in every predisposing climate, the number of men who were seized with sickness during the prevalence of a fog, far exceeded the number attacked when the weather was clear, though he did not contribute to the fog the production of the poison, but justly considered it as merely the agent of the disease.

But to whatever distance a current of wind or a dense fog may be capable of conveying this poison in sufficient quantity and concentration to produce disease, yet there cannot be a question that the poison is most intense the nearer to the marsh or lake from which it is produced, and that persons live within a certain distance of an unhealthy spot often suffer severely, while those who reside at a somewhat greater distance escape. Persons who live in the basement story of a damp and undrained house, and especially those who sleep there, are constantly attacked with fever, while those who live in the upper apartments of the same house remain free from disease.

There are spots in which this poison is generated in such quantities as to be capable of being discerned by any nebulously whoever is exposed to it. Exposure to it in certain situations has proved fatal with a rapidity and certainty equalled only by a mortal dose of strychnic acid. Exposure to it in other situations produces what may appear to be, and what is, a remittent fever; in some cases, such as the brain causing death more rapidly than almost any other disease to which the human body is subject. Exposure to it when less concentrated produces malignant fever of a continued form, destroying life in a few days or hours. Exposition to a still smaller concentration produces remittent, and to a yet smaller, the milder form of intermittent fever. And it may be so minute in quantity or so destitute of virulence in its own nature, as to be incapable of producing even intermittent fever, in its regular and well-marked form, and yet in due time may produce a long continued form of grievous maladies. The secondary diseases which have this origin, and which have been much overlooked, consist for the most part of those painful affections of the nerves, which, in their evolution, the most closely bear the general term of neuralgia. The exquisitely painful, and too often unmanageable diseases called tic douloureux, the disease called sciatica, the toothache, and more especially periodical headache, are oftentimes clearly traceable to this poison, with regard to its producing fever, its producing a distinct and regular anger. Persons who live in situations where this poison is generated in abundance may not have anger, but at the same time they never enjoy a moment's health; while it is certain that long-continued exposure to this poison, with regard to its producing fever, is included in the catalogue of the nosologist, fearfully shrivels the term of life. Few persons in such situations attain the age of fifty. In some parts of America, few of the inhabitants formerly lived beyond the age of forty; those who survived thus long had, at that early period, all the characters of extreme old age; already in those very symptoms, by the tom-tom drumming of the general culture of the land, the average term of life has been extended fifteen or even twenty years. There can be no question that the value of life which, in modern times, has increased so much in the British, has mainly arisen from the general climate of the country, and which has improved in the rural districts in proportion to the better cultivation and the more complete draining of the land; and in the larger towns and cities to the better ventilation and the greater cleanliness for which they have been remarkable, has been mainly due to the improvements in all the arts that have been practiced for the present century, a celebrated physician, who had large experience of this matter, states, as a fact that came within his own observation and experience, that in small villages, in which the annual number of persons attacked with ague has been limited to 200, not one case had occurred for several years.

Dr. Macculloch gives a vivid and but too faithful picture of the external appearance and of the constitutional disorder of the people who constantly reside in the midst of this poison, and who are not suddenly cut off by it under some acute form of disease.

Of the remote or predisposing Cause. It has been stated that the remote, or the predisposing cause of disease is that on the contrary, a condition of the body capable of being affected by the immediate or exciting cause. Whatever diminishes the vigorous action of the organs, impairs their functions, and so weakens the general strength of the system, is capable of becoming a predisposing cause of fever; and that several acts in different climates, modes, and stages, becomes a predisposing cause only and in proportion as it lessens the energy of the system, or disturbs the balance of its actions, which in fact is to render some portion of it weak. During a state of vigorous health the body is endowed with the highest powers of resistance against the poisonous agents, which in a less perfect state of health are capable of producing intense and fatal disease; and the action of all predisposing causes is to lessen this resisting power, or to weaken the energies further.

Of all the predisposing causes of disease the most powerful is the continued presence, and the slow operation of the immediate or the exciting cause. The manner in which the immediate or the exciting cause of fever operates as a predisposing cause has been admirably illustrated by Dr. Potter and Smith. 'It is a matter of constant observation,' says this author, 'that the febrile poison may be present in sufficient intensity to affect the health, without being sufficiently potent to produce fever. In this case the energy of the system is not disturbed, but the constitution is so weakened, that when an exciting cause is given, the entire system is weakened, and this increases until at length the power of resistance is less than the power of the poison. Whenever this happens, fever is induced; not that the power of the poison may be at all increased, but the constitution of the system is changed, in consequence of which it is capable of offering less resistance to thenoxious agent that assails it.' We have seen that the vegetable or animal poison may exist in sufficient intensity to produce fever on the slightest exposure to it, without the operation of any predisposing cause, in a body in the state of the soundest health, and endowed with the greatest degree of strength. Examples of this kind are but too frequent in tropical climates. In countries where the temperature never rises so high, and seldom continues so long, it is rare that fever is produced immediately on exposure to the exciting cause. Concentrated and potent as that poison is in many parts of Flanders, yet Sir John Pringle states that, 'on removing to an unhealthy situation, then less intense, but the constitution of the system is changed, and in consequence of which it is capable of offering less resistance to the noxious agent that assails it.'
inhabitants. But the curious fact is, that such persons are unable permanently to resist the operation of the exciting cause; for, after a residence in America of some years, their constitution is so completely assimilated by the influence of the climate to that of the American, that they become equally sensitive to its febrile miasma, and are as exquisitely impressed by them as the American citizens themselves. The illustration is equally striking and instructive if the position be reversed. The natives of northern climates are extremely susceptible to the influence of these miasmas; that susceptibility is in exact proportion to the latitude of their country: those from the north of Europe scarcely ever escape an attack on their appearance; and the Great British Islands, or nearly as susceptible, are subject to the influence of the poison, while persons even from the more northern countries of the United States are more liable to the disease than the citizens of the southern and middle states.

Among the other predisposing causes may be reckoned the period of life. All persons between the age of puberty and that of thirty-eight are peculiarly predisposed to this disease. After the disease has once existed, there remains in the constitution a remarkable susceptibility to its recurrence; and that from very slight causes, as from the prevalence of an easterly wind, or exposure to a very minute quantity of the poison that originally produced it, such as would not affect a person who had never been the subject of the disease before. Persons who have or who often are affected with ague, are most delicate tests of the presence of the exciting poison. Deficient and poor diet; intemperance; physical and mental fatigue; anxiety, cold, damp, debility, however induced—all these are extremely powerful in producing a less effectual part of the poison to produce the fever, and they increase the intensity of it when established. They all act by weakening the resisting power inherent in the constitution, that is, by enfeebling the powers of life. In the vigorous state of the health, exposure to the poison, even the most concentrated state, may occasion no mischief, because the resisting power of the constitution may be greater than the power of the poison, but no human strength can resist a continued exposure to it, as has been above stated. If such a continued exposure do not produce disease in the form of afebrile ague, it will certainly produce it in some other shape; which, if it do not immediately kill, will assuredly shorten life.

Of the Cure.—The first object in the treatment of a person affected with ague is to remove him from the influence of the poison by taking him out of an unhealthy, and placing him in a healthy situation. Unless this can be done, every remedy employed must act at a great disadvantage, and the power of the poison, if the patient be not relieved, may be as such to render every effort to cure the disease unavailing without a change of residence. Often, however, circumstances will not admit of the removal of the patient from home. When this is the case, the sick person must at least be put and kept in an apartment the most remote from the noxious spot, and it is a good and important general rule to place him in the highest part of the house. When this precaution is neglected, remedies constantly fail which readily and completely succeed when it is observed.

A vast variety of medicines have been recommended as sovereign remedies in this disease, and such an enumeration may be useful to the experienced and judicious practitioner, because he knows how to select, and he may find in them indications which may suggest rules for the adaptation to any individual case of peculiarity and difficulty which he may chance to have in hand. But the student and the young practitioner require more precise direction, and the mode of procedure which proves the most effectual in this disease varies of cases cannot be too clearly and definitely pointed out.

Passing by the treatment adapted to the severest cases that occur in hot climates, in which, indeed, human art is too often of no avail whatever, we are fortunate in possessing three remedies, the proper employment of which seldom fails to cure the most formidable and invariable intermittent which ever occurs in this country, namely, ipecacuanha, bark, and arsenic.

The treatment of ague includes the management during the paroxysm, the intermission and the convalescence. None of these remedies is suitable to all these periods, and what will effectually cure in one, may prove positively injurious in another.

First of the treatment during the paroxysm. The approach of the paroxysm should be carefully watched. The moment the first indication of its accession is apparent, whether that indication be afforded by a return of languor, or listlessness, or pain of the head, or a sense of confusion, or, above all, of coldness or chilliness, an emetic, consisting of twenty grains of the powder of ipecacuanha with one grain of the tartar emetic, should be given. The operation of the emetic may be promoted by drinking freely warm water, or warm chamomile tea after (but not previously) the first act of vomiting has occurred. As soon as the operation of the emetic is over, a draught should be taken, consisting of a fragment of luke warm water in a bowl, or a jugful of the leaves and flowers of camphor flower. This plan, in almost all cases, will completely stop the coming on of the cold fit; in a great number of cases it will also prevent altogether the accession of the paroxysm during the time of its occurrence, which is the stage which constitutes the solution of the paroxysm. But if it should not actually stop the accession of the hot stage, it will assuredly diminish its violence and shorten its duration; and as soon as the hot stage is formed, the laudanum of aloes, or the infusion of senna with ephedrine, will be administered, or as soon as the paroxysm has finished.

As soon as the cessation of the sweating stage terminates the paroxysm, and the latter is succeeded by the stage of intermission, the greatest attention should be paid to the preparations of bark, the sulphate of quinine is incomparably the best. The dose is from two to four grains, and the most convenient mode of administering it is in the form of pill. During the whole period of the intermission, the patient should be placed in a like situation as in the fourth stage, and the bowels should be acted on by a dose of rhubarb, with a grain of blue pill, together with two grains of the extract of rhubarb; and if the bowels be constipated, the addition to each pill of from one to two grains of the extract of rhubarb will form an excellent aperient. Given in this mode, the extract of rhubarb moderately stimulates the stomach, generally increases its action, without producing purging.

If, however, the bowels be constitutionally torpid, or be rendered so by the disease, a more active aperient must be substituted, and such will be found in the compound decoction of aloes, or the infusion of senna with ephedrine. The condition of the bowels must never be neglected, for a state of constipation will powerfully counteract every remedy.

This plan should be continued without intermission until the recurrence of the symptoms which denote a fresh accession of the disease, and the duty of the physician be suspended, and the emetic be again repeated, which, as soon as its action has ceased, should be followed by the opiate, and this, on the solution of the paroxysm, by the bark, and so on in a constant series, until the paroxysm return and the symptoms persist for a period of time.

Bark, however powerful and acceptable during the paroxysm, is commonly conceived to be useless and even pernicious during the paroxysm. But this is the period when opium is most effectual. It has now been tried on a very
large scale, and the favourable report of it by those who first tried it has been fully confirmed by subsequent experience. Extended opportunities for observing auge do not occur in London, and when they do occur, the cases are never, perhaps, the most formidable. Cases, however, are continually occurring, and we have witnessed more than enough to satisfy us that the cure should be as expedient as it is probable, especially when the exhibition of it has been preceded by an emetic. It has, however, been given with success as the sole remedy. Dr. Trotter, who had an opportunity of observing its effects on a large scale in the Channel fleet, under which it was prescribed, states that whenever the sick felt the first approach of an attack, he prescribed from thirty to forty drops of laudanum; that if this dose did not bring on some warmth in the course of ten or fifteen minutes, he gave from twenty to thirty drops of oil of turpentine; and that the symptoms of opium were necessary to increase the quantity beyond sixty drops in the space of an hour, decided relief being always afforded in that time; that in a few minutes from the exhibition of the opiate the spirits became exhilarated; the constriction on the skin was removed, and was followed by relaxation; the countenance looked more animated; a flush spread itself over the cheek; the pulse, from having been weak, quick, irregular, and sometimes intermittent, became less frequent, and more full and more equal; an agreeable warmth was diffused, and the absortion of heat, and the urine vanished sometimes in a quarter of an hour. As soon as any symptoms indicated a return of the paroxysm, the laudanum was repeated in the same manner as at the accession of a former fit, and always with equal success, so that the paroxysms were sometimes very numerous; the cases were so numerous, and the paroxysms were so frequent, that it was observed that the second paroxysm was commonly an hour or two later in the day than the preceding, and but few instances occurred of a return of the disease after the third paroxysm. The patients themselves were so satisfied of the efficacy of this remedy that the moment they felt the first approach of an attack, they were sure to run to the cockpit for relief.

Dr. Lind, who also tried this remedy on a large scale, states, that, according to his experience, the good effects of the opium are more uniform and powerful in intermittent fever than in any other disease, and that it affects the disease more rapidly than any other medicine; that if taken during the intermissions, it has no effect either in preventing or mitigating the succeeding paroxysm; that, when given in the cold fit, it occasionally removed it; but that when administered half an hour after the commencement of a hot fit, it almost always afforded immediate relief. 1. It abated the violence of the fit and shortened its duration. 2. It relieved the patient, and enabled him to remain seated or to breathe in a profuse sweat, which was more copious than when not occasioned by opium, and attended with a softness of the skin instead of the intense burning sensation common in the sweating stage. 3. It constantly produced a sleep, deep and refreshing, of which the patient usually awoke bathed in sweat, and in a great measure free from all complaint. From the speedy and complete solution of the attack, it is contended that this remedy not only shortens the duration of the disease more than other medicine, but more effectually preserves the constitution from injury, inasmuch that, after its use, it is seldom that dropsy, jaundice, or ague, disease of the liver, spleen, or any other viscus, is witnessed. According to this physician, opium is the best preparative for the disease; since it is a powerful convulsant, in which case alone the bark is effectual or even safe, but it occasions such a copious and salutary evacuation by sweat, as generally to render a much less quantity of bark requisite.

In cases where both good and independent authorities, their statements are the result of observation and experience, and they show in a striking manner the efficacy of the practice we have recommended, which is also derived from ample experience.

Change of situation is a most powerful remedy; 1st, because it may remove the irritant from the poison that produces the malady; 2ndly, because this is one of the diseases in which mere change of air is beneficial. This disease is peculiarly apt to return. Relapse is brought on by very slight causes; a very small dose of the poison will renew it.

It is probable that errors in diet, or constipation will also do it. It is certain that cold, and that the east wind will do so; but it is probable that in the cold and moist air, and in the east wind, there is diffused some of the malaria. The patient should not go out in damp or cold weather, or during the east wind.

In protracted and obstinate cases which do not yield readily to quinine, arsenic, without doubt, is a very powerful remedy, and its efficacy is increased by its combination with opium or quinine. The proper dose of the arsenic is from two to three or ten drops of the liquor arsenicalis three times a day. This remedy should always be given soon after a meal; for if taken when the stomach is empty, it is apt to produce paroxysms. The operation of the remedy should also be carefully watched day by day; for, like other mineral poisons, it is apt to lie latent in the system for a considerable time, producing no apparent effect, and then suddenly to produce violent symptoms. The physician should not be warranted to have recourse to a remedy of this kind, when a milder medicine will accomplish the cure with equal efficiency and rapidity; but when the disease does not yield to ordinary remedies, the cautious and judicious employment of arsenic is called for to remove it. In no case, however, should this most active poison be administered without constant watching on the part of the medical attendant, and, of course, the employment of it without medical superintendence is altogether out of the question.
AGUESSEAU (HENRI FRANCOIS D'), a chancellor of France. He was born November 27, 1668, at Limoges, the son of D'Aguesscau, then procureur général, and the chief town of the department of Haute-Vienne. His father, who was intendant of that province, devoted himself to the education of his son. The sober judgment and the culture of the intendant's circle drew the young man towards the study of law. His station in life, reflect the highest honour upon his paternal teacher.

The abilities of Aguesseau brought him early into notice. At the age of 21, he was admitted an advocate at the Châtelet; and, three months after, he was made one of the three advocates of the highest court of the French nation, a high office which was conferred upon him through the recommendation of his father, in whom Louis XIV., the then reigning monarch, placed great confidence. During ten years that he filled the situation, he obtained that great reputation which secured his position.

In the year 1700, he was appointed procureur général (Solicitor General). His opposition to the registration in parliament of the papal bull Unigenitus, which he considered as an assumption of the papacy inconsistent with the rights of the French nation, and destructive of the independence of the Gallican church, had nearly caused his disgrace with the king. But he maintained his position by the force of his talents and integrity. He employed his authority to the reform of the system of the registration of petitions, and the institution of the Office of Public Accounts, by the king, who, accepted it, but granted him an annuity of 100,000 francs. This he did not enjoy long, as he died the following year, on the 9th of February. Aguesseau was buried by the side of his wife, in the churchyard of his native town, with liberal enactments in his will, which should be paid to the poor, to the sick, and to the destitute, and to those who should be near him in death. His remains were exiled to Blois, where they were removed during the horrors of the French revolution: the remains of the chancellors were made to yield up their annuities to the king, and the power resolved upon doing greater justice to the memory of so great and excellent a man. A suitable monument was therefore erected in the church of Blois; but it was removed during the revolutions of the revolution. His chancellors were then disturbed, and removed to another place into which they were thrown with the bones of thousands. A statue, representing him, is now in front of the Palace of the Department of Tours, by the side of the one erected in honour of the 'Hôpital.' It was placed there in 1810, under the reign of Napoleon.

The principal features of Aguesseau's character, say his biographers, were the Due de la Fosse's sagacity and talent, application, penetration, and general knowledge; gravity, justice, piety, and purity of manners. According to Voltaire, he was the most learned magistrate that France ever possessed. Independently of his thorough acquaintance with the laws of the commonwealth, he was versed in the laws of Spanish, Portuguese, &c. His knowledge of general literature, assisted by his intimacy with Boileau and Racine, gave an elegance to his forensic speeches which was previously unknown at the French bar. He was a great reformer, and the court, principal of his pleadings and appeals (régissiteurs) when advocate and solicitor general, and of his speeches at the opening of the sessions of parliament.

AHANT, the name of a small district lying along the Gold Coast, in Africa, which has been sometimes confounded with Ashantee. It is now, however, like the whole of the Gold Coast, subject to the sovereignty of that kingdom. In Mr. Bowdich's map it occupies the space along the coast lying between 3° and about 10° 16' of latitude from Greenwich; and its breadth from north to south is very inconsiderable. On the west of it is the river which the Portuguese call Ancroba, and the natives Seemna, beyond which is the district called Amanahoe; to the north is Warsaw; and to the south is the Niger. It is divided by the river Boosomes. Ahanta is itself divided into three districts, Amamfo, Adum, and Polo. Its chief town is Bossooa. At the town of Suconeede, on the coast, it is much used for building. It is considered by some to have been, and by others to have been abandoned. There are, or were, also two or three Dutch forts at other places. The principal projection of the coast is Cape Three Points. The district of Amamfo is stated by Mr. Bowdich to abound in fine gold. Bowdich's Mission to Ashantee, p. 216, &c. (See Ashantees.)

AHAUSEUS or ACHASHVEROSH, is the name of the Persian monarch whose feastsings, revelry, and decrees are recorded in the book of Esther. The apocryphal additions to that book, as well as the Septuagint and Josephus, call him Arbassatha or Artaxerxes; he is probably the same king as the Artaxerxes Longimanus of the Greek historians, whose reign commenced B.C. 465. His favourable disposition towards the Jews (Esther vii.) might be owing to the influence of the Jewish woman, Esther. The name Achaoservos occurs also, Dan. ix. 1, where some interpreters take it for Astyages, king of the Medes; and Est. iv. 6, where Cambyses seems to be meant by it. (See Eichhorn's Repertorium für biblische und orientalische Literatur, vol. xvi. acq. sec. 430, where the word Achashverosh has been explained by means of the modern Persian as signifying ' an excellent or noble prince' (see.Winer's Lexicon Hebr. s. v.); this would nearly agree with the explanation of the name, given by Herodotus. The name is derived from the name of the king as meaning 'a great warrior.' The signification of the name accounts for its being given to various monarchs.

AHAZ or ACHAZ, the son of Jotham (2 Kings, xv. 38, xxxv. 26.) a king of Judah, who reigned 743-726 B.C. and was contemporary with the prophets Isaiah, Hosea, and Micah.
AHMADABAD, a fortified city, situated in a district of the same name in the province of Gujarat, or Guzerat, and presidency of Bombay. This city is of great antiquity; it was formerly the capital of the kingdom of Cambay, which at one period contained 100,000 inhabitants, and was celebrated, as well for the number and beauty of its religious and other public buildings, as for the extent of its commerce and manufactories. This prosperity it lost under the sway of the Mahratta chieftains, who ruined its commerce and manufactures, and oppressed the inhabitants by taxing to the utmost all articles of consumption which were brought within the city.

In the year 1818, Ahmedabad came into the permanent possession of the East India Company, immediately upon which the exorbitant rates of duty exacted by their predecessors were abolished, and a uniform tax upon its commercial products was established in their stead; at the same time all articles of consumption were declared free, and the inhabitants were enabled to trade at their own pleasure with the utmost facility and advantage. The city, which is estimated to contain a population of 100,000 souls, is situated on the bank of the Subernerry river, in 25° 1' N. lat., and 72° 42' E. long. It suffered considerable damage from an earthquake in 1819.

The distance of Ahmedabad from Bombay, by the usual traveling route, is 230 miles. The most direct route, via Udaipur, 389, from Delhi 616, and from Calcutta 1234 miles. Rennell's Memoir of a Map of Hindostan; Sir John Malcolm's Memoirs of Central India; Part. Papers; Hamilton's E. I. Gazetteer.

AHMEDNUGGUR, a strongly fortified city in the province now known as Aurungabad, in the presidency of Bombay. This city was founded in 1493, by Ahmed Nizam Shah, who, having established the independence of the state, gave his own name to it and to the imperial city, and made it the capital of his dominions. He resided here until his death in 1508.

Following the common fate of the native states of India, Ahmednuggur was, from this time, the scene of a series of changes. It passed from the hands of the Nizams to the Delawar, the chiefs of the Deccan, and the Jumna Power, and was finally captured by the Company in 1680. When the Nizams were expelled, the city was fortified by General Wellesly, in 1836, and at the conclusion of the war, shortly after, was restored to the Peshwa. Ahmednuggur has since reverted to the possession of the Company, and is now under the government of a civil, military, and judicial establishment of Europeans.

About half a mile from the city stands a fort of an oval shape, one mile circumference, built of stone, and flanked by numerous round towers. The city is also surrounded by walls, which contain a broad moat faced by solid masonry. The fortress is altogether one of the strongest in India. It is estimated to contain about 30,000 inhabitants. It is situated in 20° 47' N. lat. 74° 55' E. long. distant 83 miles from Poona, 181 from Bombay, 830 from Delhi, and 1119 from Calcutta. Rennell's Memoir of a Map of Hindostan; Sir John Malcolm's Memoirs of Central India; Part. Papers; Hamilton's E. I. Gazetteer.

AHWAZ, or AHWUZ, is a town situated about 100 miles north-east of Bassorah, and 48 miles south of Shushter. The name of Alwaz occurs early in the annals of Islam, but the exact date of its foundation is unknown. It was probably founded by the first Khalif of the Ommanide dynasty; or, perhaps, these monarchs raised an insignificant town to its subsequent splendor. The zenith of its prosperity was attained under the earlier Khalifs of the house of Abbas, nor did it long survive their fall. Although the architectural decorations of the ruins of Alwaz are Moslem, bearing
Arab inscriptions in the early Cufic character, some in
tagios on carnelian or oriental onyx, brought from thence,
are of a higher antiquity than Mohammed. The city of
Ahbwa lies on the banks of the river Karun (31° 20' N. lat.
45° 50', E. long.) in a flat and uncultivated country, abandoned
by the nomad tribes of marauders and nomads, and by the
neculous Arabs, who occasionally pitch their flying camps
here, when in search of pasture or plunder. The
modern town of Ahbwa occupies but a small portion of the site
of the old city, on the eastern bank of the Karun, and exhibits
a uniform and solitary appearance in contrast to the
immense mass of ruins. Its houses are almost entirely built
of stone brought from the ruins, and it can only boast of
one decent building, a mosque, apparently modern. The
population at present does not exceed 1600 souls. Con-
siderable numbers of the inhabitants are Moslems, and the
was thrown across the river, chiefly, if not entirely, to
favour irrigation, by thus making a head of water. A part
of this stone wall is still standing, remarkable for its state
of preservation; it is in many places ten feet high, and
nearly as many in breadth; while it exists of one hundred feet
in length, without any intermediate breach. Many single blocks in it measure eight and ten
feet. The river rushes over the bund with great violence,
and is checked by the first cordon of the town; the
sound of the fall is heard from a considerable distance.
Boats of every description are obliged to unload previous to an
attempt at passing over, and even then the passage is attended
with much danger, and they are frequently swamped. The
river flows one hundred and sixty yards in breadth at the
middle of the dyke, and of great depth. The shallowness below
the town is caused by the great mass of masonry under
the surface. Towards the south end of the town, there are
several singular cavities, and a few water-mills erected
beneath the stone wall. On the latter, particular notice was
made of at the Kinneir's visit. Behind them are the remains of a bridge,
and here, too, commences the mass of ruins, extending
from ten to twenty miles in a south-easterly direction, while
their greatest breadth covers about half that space. All the
ruins are of considerable height, being composed of stones
of two hundred feet high. In many parts flights of steps are
in good preservation. At the base of this mass of ruins are
glades, in which are found stones measuring five or six feet
in height, several with Cufic inscriptions, and others with
fronted, indicative of arches; while the rest to the Moham-
medan. In every direction are found heaps of circular flat
stones perforated in the centre, four, five, or six feet in
diameter, and some with characters upon them—they have
probably been used for grinding. These circular stones
appear in some places to have been used for the conveyance
of water, and may be traced for great distances in suc-
cessive rows in small dry rivulets, placed so firmly together,
that it would require days to remove any of them. The
above-mentioned large mound extends as far as the eyes
can reach, varying in height and breadth, and is the first
in magnitude upon the plain. To the west of this is a
mound entirely of stone, fifty feet high, and twenty feet
broad, with several flights of steps traceable to its sum-
mits, but much mutilated and injured by the weather.
About a mile to the east, separated by a deep ravine, stands
an immense pile of materials, consisting of bricks, stone,
and tile of various colours. The Arabs call it kair or palace.
Its ascent is gradual, but fatiguing from the numerous
stairs, which have been apparently worn by water. The
height is, at the lowest estimate, one hundred and fifty feet
above the plain. At the summit are several floorings of
stone, as fresh as if only recently laid down; together with
several rounded troughs, some of which are of Persepolitan
marble in its rough state. From numerous cavities start
packs of jackals, and porcupine quills are strewed in every
direction. One side of this mound is nearly perpendicular,
so that it is impossible to descend. At its base the
canal is broad, which, by its green appearance, relieves the landscape from the general gloom of sterility
and dreariness. The kair is about three miles from the
est bank of the river. About half a mile north-west from
the kair is a circular mound measuring two hundred yards.
At its base, a wall of masonry may be traced for twenty-one
feet, the face of which is perfect and unbroken, and appears
to have been the front of some building. To this mound
is joined another ruined heap, covered with fragments
of glazed tile, a coarse kind of crystal, pieces of alabaster,
and bits of glass.

Several mounds form one connected chain of ruins, un-
shaped, flaked rock, lying in such naturally-formed strata,
that the very thought of any part of the materials having
been accumulated by human labour is scarcely admissible.
The soil on which these ruins rest appears to be soft and
sandly. Through the site, and the sugar was extracted to the
city was built. Glass of all colours is found in abun-
dance, and the fragments of pottery are remarkably fresh.
Many of the burnt bricks that lie on the surface of the
mound appear to have borne some written character; but
exposure to the weather, and probably occasional inunda-
tions, caused by the melting snows of the mountains in the
upper country, have nearly effaced all traces of it. On
the hewn stone, some characters are as fresh as from the
sculptor's hands. No bitumen was observed on the bricks.
A number of the buildings were covered by the mound of
bricks, small intagios, generally denominated seals, and
probably used as such, similar to those found at and near
Babylon. The Arabs are always digging up and removing
stones for the purpose of building; but a large city might
be erected from the materials still remaining. The ruins of
Ahbwa extend also on the west bank of the river in a
northerly direction, exhibiting the same appearance as the
mounds on the east side, but less in magnitude. Ahbwa
is generally supposed to be much lower in antiquity than
either Babylon, Persepolis, or Susa. Alexander navigated
the Karun, but his historians do not mention Ahbwa.

It appears from the extracts from oriental writers made by
Captain R. Taylor, that the sugar-cane was once largely
raised here. Through this site, the sugar was extracted to the
city, and, together with the genus Unau or Chelopetum, com-
position of Tardigrada, from the peculiar formation of their
extremities, and the remarkable slowness of their pace.
Both these genera were formerly included by Linnaeus in
the same group, under the common name of Bradypus or
Bradypus, Illiger, in zoology, a genus of mammals
belonging to the order Edentata of the Rêgne Animal,
and, together with the genus Unau or Chelopetum, com-
posing of Tardigrada, from the peculiar formation of their
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the same group, under the common name of Bradypus or
Bradypus, Illiger, in zoology, a genus of mammals
belonging to the order Edentata of the Rêgne Animal,
The order Edentata comprises a number of genera, perhaps the most singular and anomalous among mammals, differing widely from all other quadrupeds, but unfortunately possessing so few natural affinities or relations of resemblance among themselves, that we cannot help regarding the order edentata as the most arbitrary and artificial of all the primary groups into which MM. Cuvier and Geoffroy have divided the mammals. In other respects, every thing which relates to these animals, their habits and economy, but still more particularly their osteological structure, is in itself exceedingly interesting. The family of tardigrada, or sloths, are more especially deserving of attention, as well from the singularity of their physical structure, and the mistakes which have hitherto prevailed among naturalists concerning the habits and manners of these singular animals, as on account of the relation which they present in their osteological details to the megatherium, the most curious and anomalous of extinct animals. This family is distinguished from the other edentata by a short round head, and the presence both of molar and canine teeth, the incisors alone being deficient; but, above all, by the great length and singular structure of their arms, which, adapting them to a mode of progression altogether peculiar to themselves, and consequently disqualifying them for the exercise of that species of locomotion common to ordinary quadrupeds, has caused them to be considered as the most miserable and unfortunate of beings, imperfect monsters of creation, equally remarkable for their disgusting appearance and helpless condition. The valuable observations of a recent traveller have at length dissipated the obscurity which so long prevailed upon this subject, and have shown in this instance, as in all others, that every modification in nature is adapted to a wise and useful end; and that deformity and imperfection appear only when, from our own imperfect knowledge, we fail to discover the adaptation of organic structure to the habits and economy of particular beings.

To enable us clearly to comprehend the nature and functions of these animals, it will be necessary to enter into a short description of parts of their osteological structure. The next view of the skeleton of the A1 seems to indicate a distortion of certain parts, and proportions altogether opposed to freedom of motion, at least of that kind of motion which we are familiar with in ordinary quadrupeds. The arm and fore-arm taken together are nearly twice as long as the leg and thigh, so that if the animal attempts to walk on all fours, it is obliged to trials itself painfully and slowly on its elbows, and if it stands upright on the hind legs, the arms are so long that the fore-fingers touch the ground. This disproportion between the anterior and posterior extremities, obviously depresses these animals of the power of moving on a plain surface with that speed which is so admirable in the generality of quadrupeds; and, accordingly, we are assured by all observers, that their mode of progression, under these circumstances, is of the most slow and painful nature. The sloths, however, are not terrestrial animals, but live entirely among the thick branches of trees in the most extensive and solitary forests. This remarkable disproportion of their fore-arms is common to another genus of arboreal mammals, the real apes, in which, far from retarding their motions, this peculiar structure is of the most essential importance in adding to their agility. But the sloths partake of none of the accessory advantages which the apes possess. They have no opposable thumb; their fingers are short, and so perfectly rigid that the joints ossify at a very early period of the animal's life, leaving them totally incapable of individual motion, whilst they are at the same time so completely enveloped in the common integuments of the hand, that nothing is to be seen externally except the immense crooked claws with which they are provided. The wrist and ankle, also, are articulated or joined to the fore-arm and leg in an oblique direction; so that the palm or sole, instead of being directed downwards towards the surface of the ground, as in other animals,

[Skeleton of the Sloth.]
remains of a former order of things, the living relics of that prevalent nature of which we are obliged to seek the other

ruins beneath the surface of the earth, and that they escaped, by some miracle, the catastrophe which destroyed their contemporary species.

The false and exaggerated opinions which have been entertained concerning the functions and condition of these animals, arise from preconceived notions which do not apply in any manner to the conformation of its sloth. If placed upon a plain surface, the sloth moves indeed with great pain and difficulty and only by seizing upon the little asperities which he finds in his way, and by that means dragging his body slowly forward, just as we may observe a bat to do under similar circumstances. But this is a situation equally foreign to the habits and economy both of the sloth and of the bat: and we are no more justified in judging of the nature of the one under these circumstances, than we should be in reasoning of the habits of the other. The sloth is thinnest an arboreal quadruped: it is produced, it lives, and it dies in the trees: it never voluntarily descends to the surface of the earth, and those, therefore, who observe it in that situation, have not a favourable opportunity of judging of its nature and functions.

Yet if we attentively consider the organization of the extremities as already described, it will appear that the amazing disproportion between the hind and fore legs in point of length, the immovableness of the toes, the reversed position of the claws, the oblique articulation of the feet, and the great rigidity of all the members, are circumstances which should equally disqualify this animal for moving along the branches of trees with anything like the ease and security of the squirrel or monkey. We are indebted to the valuable observations of Mr. Waterston, during his residence in South America, for a final and satisfactory explanation of all these apparent difficulties and inconsistencies in the structure and habits of the sloth. ‘The sloth, says this traveller,’ in its wild state, spends its whole life in the trees, and never leaves them but through force or accident; and what is more extraordinary, not upon the branches like the squirrel and monkey, but under them. He moves suspended from the branch, he rests suspended from the branch, and he sleeps suspended from the branch. Hence his seemingly bungled composition is at once accounted for; and in lieu of the sloth leading a painful life and entailing a melancholy existence upon its progeny, it is but fair to conclude that it just enjoys life as much as any other animal, and that its extraordinary formation and singular habits are but further proofs to engage us to admire the wonderful works of Omnipotence. ‘Nor are the motions of this animal so slow while suspended in this strange position, nor his habitat so circumscribed as naturalists have hitherto imagined. The Indian’ concludes Mr. Waterston, ‘has a saying, and when the wind blows the sloths begin to travel. In fact, during calm weather they remain tranquil, probably not liking to cling to the brittle extremities of the branches, lest they should break whilst the animals are passing from one tree to another; but as soon as the wind raises the branches of the neighbouring trees become interwoven, and then the sloths seize hold of them and pursues its journey in safety. He travels at a good round pace, and were you to see him, as I have done, passing from tree to tree, you would never think of calling him a sloth.’ Though the merit of explaining and accounting for the many apparent inconsistencies and anomalies observable in the conformation of these animals is undoubtedly due to Mr. Waterston, yet their habit of resting suspended from a branch or tree, as long since noticed by different authors, and which is particularly described in a communication to Buffon from the Magpie de Montmirail, in whose menagerie a sloth was preserved for upwards of three years. Stehman, in his History of Ophiura, has engraved a sloth in this position, which we have copied, as illustrating its singular mode of progression.

The conformation of the extraneous is not the only part of its anatomy in which the sloth differs from ordinary mammals. The number and form of the bones which compose the trunk, the nature of its teeth, and the conformation of its stomach and intestines, are all peculiar. The stomach is divided by transverse ligatures into four separate compartments, which bear a distant resemblance to the four stomachs of ruminating animals: they do not, however, exercise the functions of these organs, nor do the sloths regurgitate their food, or subject it to a second process of mastication like the ox and the sheep. The intestines, also, are unusually short for an animal which lives entirely upon vegetable substance, scarcely equalling twice the length of the body, whilst those of ruminants frequently exceed ten times those dimensions. Their simplicity and diminutive size in the sloths appear to be compensated by the superior and unusual complication of the stomach, which, retaining the food for a longer period than in ordinary non-ruminating animals, allows it to be more perfectly macerated, and prepared for the action of the absorbent vessels which imbibe its nutritious particles in its passage through the intestines. The number of vertebrae in the necks of mammals is generally seven, so that the whales and dolphins, which have scarcely any neck at all, as well as the giraffe and camel, which have it developed at a most unusual degree, are all found to agree in this particular, whereas, in the sloth, the lower vertebra of the spine alone forms an exception to this otherwise universal rule in having nine cervical vertebrae. What renders this circumstance still more surprising, is, that the neck of the Ate, notwithstanding its two supernumerary vertebra, is so far long—being, on the contrary, much too short for its big fore-legs, if it were compelled to seek its food on the ground, like other animals. But this defect is compensated, as well by the nature of the situation in which it habitually occupies, suspended from the horizontal branches of the trees, as by its power of using the fore-paw as a hand in conveying the food to its mouth, which, notwithstanding the rigidity of its members, it does with great address and one paw, whilst it clings firmly to the branches by means of the other three.

The dental system of the sloths is the most singular that can well be conceived. They have no incisor teeth, but canines and molars only; and in the Ate the canines are diminutive, and in all respects very similar to the other teeth. The molar teeth are universally eight in the upper jaw and five in the lower, having a saying of them respectively. Their construction is most simple, consisting merely of a cylinder of bone, enveloped in enamel, and hollow at both ends,—at the upper by continual dilatation, and at the under by eventual ossification. They have no mere instruments in grinding and mas-saceting vegetable substances. Hence it results that the mastication of the sloth must be extremely imperfect, though the defect of
dentition is probably compensated, in some degree, by the superior complication of the stomach.

The genius Ai, for which the name of Bradyops has been more properly reserved, differs from the Unau, Choleopus, in many respects, but at the same time approximates more nearly to it than any other known animal: these two genera, together with the extinct fossil animals which have been called Megatherium and Megalonyx, and which, with the form and organization of a sloth, nearly equalled the elephant in size, constitute the Cuvierian family, Tardigrada. Before the invention of the term tundruktus, these genera were completely developed in the Unau, and in the Ai of the same form and subject to the same detrition as the molars, these two genera are distinguished from one another by the number of toes on the fore-feet, which are in the Ai and only two in the Unau. The length of the common urns of the former are much longer in the former than in the latter; by the number of cervical vertebrae in the Ai, as already mentioned; by the equally-unusual number of ribs in the Unau, which amount to no fewer than forty-six, the greatest number hitherto found in any mammal, the Ai having but thirty-two; and by numerous other modifications which it is unnecessary to enumerate.

The sloths are known to bring forth, and suckle their young unaided; for that purpose they have two mammae, which are situated on the lower jaw; the young sloth, from the moment of its birth, adheres to the body of its parent till it acquires sufficient size and strength to shift for itself. The head of the Ai is short, the ears large, and rounded like the African ass. Behind them, the keys, the ears concealed in the long hair which surrounds them, the eyes small and deeply sunk in the head, and the tail a mere rudiment. The Ai is found only in the most gloomy and retired tropical forests of South America. The Indians like his flesh, and are in continual pursuit of him.

Naturalists reckon two distinct species of the Ai, and three or four varieties, some of which may probably be found in the future: when they come to be dissected and carefully compared, it will be found that the common Ai, Bradyops Communis, has a short round head, furnished with coarse shaggy hair, disposed on the crown in verging rays, like that of the human species: the face is of a yellowish colour, covered with very short hair, whilst that of the body and extremities is universally long and shaggy: the eyes are encircled by a brown ring; the hair of the body varied with irregular patches of dark and light brown, or silvery white: between the shoulders there is a crest of long hair, which is often exceedingly beautiful. The texture of the hair is altogether peculiar, and more necessary for the person is it well known to the botanist than by the sun, than the hair of ordinary quadrupeds. It is coarse and flattened at the extremity, but as small at the root as the finest spider's web; and its dry and withered appearance is the cause why the animal is so singularly difficult to detect the whilst at rest among the branches covered with bark and moss of the same colour; it is only when in motion that it can be readily distinguished from the trunk beneath which it hangs suspended. In some respects, different individuals of this species differ considerably from one another, in the shades and disposition of their colours, and in the intensity of the mark between the shoulders; some even want this latter mark altogether, others are of a uniform ash colour over the whole of their bodies, whilst others have the hair of the head partied in the centre, and hanging down upon each side; but whether these constitute distinct species or mere varieties of the common Ai, is a point hitherto undetermined. In other respects, the various materials for an extensive comparison, and no naturalist has ever examined the Ai with this view in their native regions.

2. The Colored Ai (Bradyops coluris), is a very distinct species from the bony structure of its cranium. Its face is naked and of a black colour; the hair of its body less flattened, and withered-looking than in the common species; the forehead, temples, chin, throat, and breast covered with reddish or rust-coloured hair, slightly frizzled; on the crown of the head it is long and yellow, and on the rest of the body pale orange; but the most distinguishing mark of the species is a large black collar which completely surrounds the neck, and from which its specific name of collaris is derived. Beneath this outer coat there is an inner one of very fine fur, which is of a dark brown colour on the collar, but gradually diminishes in intensity towards the crown, where it is entirely white.

Both these species feed upon the leaves of trees, and bring forth but a single young one at a birth. When in motion in the forests they emit a feebie, plaintive cry, resembling the word Ai, and which is of the origin of the name they bear among the Indians, whilst in America, it is a term extremely reflective of life, and have been seen to move their legs and exhibit other symptoms of vivacity, a full half hour after being deprived of the heart and other viscera.

AIA-SOLOUK, or AIA-SALUK, a small village of Asia Minor, on the banks of the Kitchich Mindur, the old Caysurus; many remains are found there, which have given rise to the supposition that it occupies the site of Ephesus. But the remains of Ephesus are two miles lower down the river. (See Ephesus, for an account of both places.)

AIDÉ-DE-CAMP, a French term, denoting a military officer usually of the rank of captain, one or more of whom is attached to every general officer, and conveys all his orders to the different parts of his command. A field-marshall is usually accompanied by several aide-de-camps, major-general to one. The king appoints as many aide-de-camps as he pleases, and this situation confers the rank of colonel.

AIDS, called by ancient legal writers auxilia, were a kind of pecuniary tribute paid by a feudal vassal to his superior or lord, on occasions of peculiar emergency. The kinds of aids of most usual occurrence were, 1st, when the lord made his eldest son a knight,—this ceremony occasioned a considerable expense; and 2d, the granting of a tenant for extraordinary assistance: 2d, when the lord gave his eldest daughter in marriage, he had her dowry to provide, and was entitled by law to claim a contribution from his tenants for this purpose. The amount of these kinds of aids are stated in the Statute Westminster. 2d. c. 36., namely, at 20s. for a knight's fee, and at 20s. for every 20l. per annum value of socage lands, and so on in proportion. The third species of aid, which was to ransom the lord's person when taken prisoner, was of less frequent occurrence than the other two, and was of necessity altogether uncertain in amount; because, if the lord were taken prisoner, it was absolutely necessary to restore him, otherwise exorbitant the required ransom might be refused. When the lord's person was held captive he was a vast collection of abstruse learning upon the various kinds of aids; but as aids for knightling the lord's son and marrying the lord's daughter are expressly abolished by the stat. 12 Car. II. c. 24. and as aids for ransomning the lord's person are given up to be abolished by the statutes, the aid of these subjects has long lost all practical utility, and is become merely matter of historical curiosity.

AIKIN, JOHN, M.D., was the only son of the Rev. John Aikin, D.D., and was placed in the dissenting academy of Warrington in Lancashire. John was born at the village of Kibworth-Harcourt in Leicestershire, on the 15th January, 1747. Here, and afterwards at Warrington, he received a classical education under his father, from whom he imbibed the love of letters for which he was distinguished through life.

Having made choice of the medical profession, he was at an early age articled to a surgeon and apothecary at Uppingham, in Rutlandshire, where he remained for eight years, and then studied at Edinburgh. Having completed here during two winters, he returned to England in May, 1766, and after paying a short visit to Warrington, renewed his medical studies at Manchester, and, on the expiration of three years in Manchester, he proceeded to London, and joined the class of Dr. William Hunter.

The first field which he chose for his professional exertions was the city of Chester, where he settled in the autumn of 1770, and here his residence was first established. This was entitled Observations on the External Use of Preparations of Lead, with some General Remarks on Topical Medicines. This work met with a satisfactory reception from the members of the medical profession, and is still held in esteem. Notwithstanding sufficient encouragement at Chester, in little more than a year he re-
moved to Warrington, where he immediately succeeded in obtaining a moderate amount of practice. Shortly after this time, he published a pamphlet entitled Thoughts on Hospitals, which was well received both by the medical profession and by the public generally. Mr. Aikin's earliest publication, unconnected with his, upon that occasion, was a small volume entitled Days on Song Writing; this was first published in 1772, and was speedily carried through a second edition. Very many years afterwards this little work was remodelled, and published with additions, under the title of Days on Music.

In the year just mentioned, Mr. Aikin married Miss Martha Jennings, the daughter of his maternal uncle, a union from which he derived the truest domestic happiness during the remaining years of his lengthened life. In 1777, his sister, Mrs. Aikin, published a small volume of Miscellaneous Pieces in Prose, and in the following year published a translation of The Life of Agricola, by Tacitus, with copious notes, which was soon followed by a translation of The Manners of the Germans, by the same author. His next was A Specimen of the Medical Biography of Great Britain, and this essay meeting with considerable attention from many professional and literary persons of celebrity, by whom he was invited to put together a second volume, published, five years after, in the form of a series of Biographical Memoirs of Medicine in Great Britain from the Revival of Literature to the Time of Hervey. It was Mr. Aikin's intention to still further extend the work, but it was found impossible for him, as then situated, to produce materials for completing his purpose in a satisfactory manner.

To these literary occupations, and to the labour attendant on an extensive medical practice, were at this time added the task of delivering chemical lectures to the students at the Warrington academy, and the charge of privately instructing a few medical pupils.

The next publication of any consequence which we owe to Mr. Aikin appeared in 1784. This was a much enlarged and revised edition of Lewis's Experiments and Observations in the History of the Materia Medica, in vol. 4to., the preparation of which had occupied him during a large portion of the preceding year. About the same time was published the first of his works composed for the benefit of young people. This, which was entitled The Catechism of the Manners of the Germans, contained an instructive sketch of many striking circumstances in animal and vegetable life, and of the changes attendant upon the revolution of the seasons in our latitude. This little piece was republished fifteen years after, and enriched by the addition of many eminent authors, and the charge of privately instructing a few medical pupils.

Having lost his father by death, and the breaking up of the Warrington academy having scattered the literary and scientific society of that town, so much in accordance with his character and dispositions, he then determined to leave his small professional friends, to take his degree as a doctor of medicine, and to seek some more promising field than Warrington for the employment of his professional talents. With this view he proceeded, in July, 1784, to the University of Leyden, where, through the means and cajolery of the examiners, he received his degree, and returned to England.

At the end of some months spent in inquiries after a suitable opening for practice, Dr. Aikin was persuaded that such an opportunity presented itself at Yarmouth, in Norfolk, from many of the inhabitants of which place he received promises of support. The experiment of a year convinced the doctor, however, that the ground he had chosen was not sufficiently prepared as a mediable expectation of success, and he then removed to London, where he appeared to be rapidly making his way, when the retirement from practice of one of his former competitors at Yarmouth occasioned an invitation for his return to that town, which he accepted. From that time he supported the necessary expenses of his family, as well as his professional engagements, without any considerable assistance from external sources.

In 1788, Mr. Aikin wrote his popular little work, England Described, which he produced a new edition of Lewis's Materia Medica, with all the alterations called for by the then recent progress of medical science. Two years afterwards, upon the refusal of the legislature to repeal the Test and Corporation acts, Dr. Aikin, who was bound by the ties of birth, blood, and connections, as well as by principle, to the dissenters, employed his pen as their champion, and published two strongly-exprised pamphlets on the question. This set of partizanship produced him many enemies. The clergy with their connections, as well as the members of the corporation, chose to consider themselves thereby absolved from their promises of support, which they secretly transferred to another candidate, who was invited by them to settle in the town. Dr. Aikin's situation was, in consequence, rendered so much less lucrative and agreeable, that early in 1792 he again removed his family to London, where he recommenced his medical practice.

In the same year, Dr. Aikin, who had before assisted Howard in preparing his works for the press, published, in one small octavo volume, A View of the Character and Public Services of the late John Howard, Esq., LL.D., F.R.S. This work comprised an account of the principal events of Mr. Howard's life, and of the operations for the improvement of prisons, both within and without the state of prisons, hospitals, and lazaretts, and it gives a summary of his character and exertions; a task for which Dr. Aikin was peculiarly qualified, as well by the information and unreserved intercourse which had passed between Howard and himself, as by the peculiar turn of his own mind, which led him to view with interest approaching to enthusiasm every scheme which promised in any way to diminish human suffering.

The first volume of Evenings at Home, the most popular, and probably also the most useful of all Dr. Aikin's works, was published very soon after he had settled in London. The volumes of this work appeared successively, the sixth and last in June, 1795. This work was the joint production of Drs. Aikin and his sister, and the contributions, however, did not exceed half a volume in the whole. The object of these volumes was a favourite one with their authors, who desired to teach things rather than words. In the execution of the task, they presented it in a manner sufficiently attractive to every reader, and comprising a great variety of persons of all degrees, a good deal of natural history, with some of the elements of chemistry and mineralogy; but the principal charm and value of the work consist in its just views and wise and tactful management of the subject, which is visible in every line. 'Things by their Right Names is the title of one of the papers inserted in these volumes, which might, with great propriety, have been adopted for the entire work. At the expiration of nearly half a century from its first publication, it is still the best known of all works of the highest and most sedentary of the last age. The literature of the last age was well covered and closed by this work, and it has been, and remains in the possession of public favour, and the work has been translated into almost all the European languages.

In the beginning of 1794 Dr. Aikin published a volume of Letters from a Father to his Son on various Topics relative to Literature and the Conduct of Youth. This was characterised as an original work; as it was not designed for children, it is less elementary than the Evenings at Home. The chief aim of these letters, thirty in number, was to instruct the youth in the art of reading, and to enable them to form a correct judgment. The son shall study them to judge and enjoy and act for himself, inculcating freedom of thinking on all occasions, lest the deference to authorities on small matters should induce the same bad habit of passive compliance in affairs of capital importance.

In 1795 Dr. Aikin published in a large quarto volume, A Description of the Country from thirty to forty Miles round Manchester. The author brought local knowledge to the execution of this task, which is written with such clearness and accuracy, and displays throughout the doctor's characteristic good sense and freedom from vulgar prejudices.

On the establishment of the Monthly Magazine, in the beginning of 1796, Dr. Aikin became its literary editor. The political position of that period caused him to become at no time connected with its press, and the editor retained for ten years with considerable credit to his literary reputation. At the close of the year (1796) Dr. Aikin engaged in his greatest work, the General Bio-

logy, which we have already noticed, and which was completed in nineteen years, and was extended to ten quarto volumes. In this undertaking he had the assistance, first of Dr. Enfield, and, after his decease, of the late Dr. Thomas Morgan. The portion of matter contributed by Dr. Aikin amounted to nearly one half the contents of the whole work, and he passed through the remaining period of the work with the most arduous labours.

His health, which had been declining from the summer of 1796, became so seriously bad in the spring of 1798, that Dr. Aikin was then obliged to have recourse to the relaxation of a country life; and he passed four months at Dorking, in Surrey. Even under these circumstances, however, he gave evidence of the activity of his mind by
producing a second volume of Letters from a Father to his Son.

So little benefit to his health was derived from this residence at Dorking, that a total renunciation of London and of his profession became a matter of necessity, and he accordingly removed, in October, 1799, to Stoke Newton, where he continued to reside during the remainder of his life. Dr. Aikin did not, however, by any means relax in his literary exertions, but, on the contrary, undertook, in addition to the 'Monthly Magazine' and the 'Biography,' to superintend a number of new periodicals, and was engaged in the execution of this engagement he supplied several critical prefaces and biographical notices which had been omitted by Dr. Johnson.

During 1801 Dr. Aikin wrote an instructive little volume for the use of young persons, entitled, The Arts of Life. In the preface, which was called A Mission and to which he continued to be its editor during the two and a half years that the publication was continued.

Towards the close of 1811 Dr. Aikin accepted the office of editor of Dodson's 'Annual Register,' an undertaking which occupied him his whole time, so that he now had no ample occupation without any attempts at original composition. Constant employment appears to have been a necessary condition of his existence, and on the completion of his work in the 'Annuals,' he formed a collection entitled Select Works of the British Poets, with some Account of their Uses. In 1803 appeared his Letters to a Young Lady on a Course of English Poetry. In 1806, when his connexion ceased with the 'Monthly Magazine,' Dr. Aikin was engaged in establishing a new periodical which was called The Saturday Review, and he continued to be its editor during the two and a half years that the publication was continued.

The number 1817, a few months after the appearance of the Annals, Dr. Aikin experienced a dangerous attack of paralysis, and for some time he was deprived of the use of his faculties. After a few months he partially recovered, and survived more than five years. He died of a stroke of apoplexy, December 7, 1822.

Dr. Aikin's temper was naturally cheerful and affectionate, a disposition which he cultivated as a principle. His attachment to the cause of rational freedom was ardent and uniform. His diligence in the performance of whatever he undertook was unwearying. His moral purity was unblemished.

AIMOIN, a benedictine monk, and an historian. He was a native of Ville Franche, in the province of Perigord. He wrote, or rather began, a history of the French, which he dedicated to his patron and principal, Abbot, Abbot of Fleurs-sur-Loure. It is said in his preface, that he intended to give an account of the origin of the French nation, and to bring his narrative down to Pepin le Bref, father of Charles the Bald (741); but, either he did not accomplish his task, or some part of it has been lost, for what we have from him brings us down only to the sixteenth year of Clovis II. (650). Two books were afterwards added by an unknown writer. This history of Aimoin is not esteemed; it is incorrect, and he does not dwell sufficiently upon the events with which it deals, which was his chief defect. His chief interest, is the account of the life of Abbot; it contains a great number of anecdotes, and frequently alludes to the political and public circumstances of the times. Aimoin died in 1047, was buried in a river in France which, rising among the slopes of the Jura, pursues a S.S.W. course into the Rhone. Its length is more than ninety miles, and its junction with the Rhone takes place about twenty miles above Lyon. Although not a large river, its sources give rise to a department pretty nearly coincident with the district of Bresse, Bourgoye, Dombes, &c., sub-divisions of the former province of Burgundy (Bourgundy). This river separates the department into two parts of nearly equal extent, containing some eighty to a hundred thousand inhabitants, and at the end of 1826, a population of about 342,800 persons. It sends five deputies, and is subdivided into five arrondissements. The district on the western or right bank of the Ain, though marly in some parts, produces harvests sufficient for the inhabitants, whose chief occupation is agriculture: the eastern district, which is crowned by the ridges of the Jura and the intervening vallies, affords pasturage for a great number of horses and sheep, and yields iron and stone, which the inhabitants work. The best lithographic stones in France are procured here. The Lake of Nantua, which is about the middle of the department, is not less than 1300 feet above the level of the sea. In the S.W. of the department there are several remains of antiquity, which have been examined during a part of the year for cultivation; but they are very injurious to the health of the people. Among the manufactures carried on in different places, are those of cloth at Montfail, near the Rhone, a town of about 4000 inhabitants, and at the capital, Bourg, a town of about 10,000 inhabitants, and of the department; and of watches at Bourg and Ferney, the latter celebrated as the residence of Voltaire, by whom this branch of industry was introduced there. The chief towns beside the main road noticed are Belley (population 5300), near the S.E. corner of the department; Gex (population 2600), at the N.E. extremity; and Trevoux (population 3000), on the Saône. These, with Nantua, are the seats of sub-prefects; and we must add to these, and to Bourg, the towns of Barthelemy and Savigny on the Saône. Bourg, the capital, is on the Reysousse, a feeder of the Saône, and contains between 8000 and 9000 inhabitants.

The Saône bounds the department on the west; the Rhone (on the right or French bank of which is the Jura) limits it on the south; the Sallanches drain it by the river of Dombes, which is formed near Nantua, and it is not from the Arabic A'in, eye or fountain. It is about seventy miles N. by E. from Alep. It is a large town, inhabited both by Mohammedans, Greeks, and Armenian Christians. The Turkish is a common language. The houses, which is found in the kingdom: some of the streets are refreshed by streams of water, and the air is wholesome. On the north is a castle standing on an artificial elevation. The extensive burying-ground, looking at a distance like a banner, is in a suburb, like the streets of Rome. The manufactures are, leather made of goat's skin dyed red and yellow, cotton, and various coloured woollens. The chief trade is in leather and raw hides.

Ain-tab is a village, but without any reason, to have been anciently called Antiochia ad Taurus. It was taken by Tamerlane in 1400. The population was computed at about 20,000 some years ago, [See Browne's Travels, p. 411.]

AINSWORTH, ROBERT, the author of a well-known Latin Dictionary. He was born at Woodydale, about four miles from Manchester, in September, 1860. Having received, or at least completed his education at Bolton, he afterwards taught a school for some time in that town. He then came to London, and formed an establishment at Bethnal Green, from which he removed, first to Hackney, and afterwards to other villages in the neighbourhood of the metropolis. It is said to have been about the year 1714 that he was induced by the officers of the booksellers to complete the compilation of his Dictionary; but the execution of the work was frequently suspended, and it did not appear till 1736. He tells us himself, indeed, that it had been begun more than twenty years before. The first edition, as it appears to Dr. Watkins, was in two volumes, and the Latin address, was in one volume quarto; and it was the only one published during the lifetime of the author, who died at London on the 4th of April, 1743, and was buried at Poplar, where an inscription of his own composition, in Latin verse, was placed over his remains. Those of his wife, having acquired a competency, he had retired from teaching for some time before his death. These particulars are given in a notice prefixed to the second edition of his Dictionary. Dr. Ainsworth, in his edition of Tindal, gives full credit to a private communication, in the latter part of his life he was used to be fond of rummaging in the shops of the low book-sellers; by which means he often picked up old coins and other valuable curiosities at little expense. He is said to have engaged in the business of making a dictionary of the Arabic language, for making Education less Chargeable, and some other treatises, the list of which may be seen in Watt's Bibliotheca;
The air is the only work for which he is now remembered. A second edition, four years later, by Mr. Samuel Paterson, appeared in two volumes, quart, 1746, and it has since been frequently republished. One edition, which came out in 1752, is in two folio volumes, and used to be in some request as a hand-bound specimen of typography. It was subsequently altered by the Rev. William Young. The supposition is original of Fielding's Parson Adams. Another, in two volumes, quart, was published in 1753, by Dr. Thomas Morell, the author of the Lexicon of Greek Proverbs. Both Young and Morvell also edited Abridgments of Ainsworth's Dictionary, which were much used in schools. There is also an abridgment of the work, published in two volumes, octavo, in 1759, by Mr. Thoma. The latest and best edition of the larger work is that which appeared in 1816, in one volume, quart, under the care of Dr. Carew-Townson. The anonymous dedication to Dr. Townson is a laborious and useful work; but it has no claim to be considered as a philosophical exposition of the etymology of the Latin language, or as anything like a complete exhibition of the usage of words by Latin authors. Notwithstanding the corrections which it has received from the labours of its successive editors, it still remains disfigured by many errors and deficiencies, which some scarcely have been avoided when it was first compiled, but which leave the book a great way behind the popular and successful dictionaries of the language.

AIR. This word is derived from the Greek and Latin aer. Though generally applied only to the material of the atmosphere, this term was, about the middle of the last century, extended to all the gases, as they were successively discovered or known. The name is, however, still applied to a mixture of air, which contains no new component element, and which seems to be the common cause of the properties of atmospheric air only, we give the references to the modern names of the principal airs, as they were then called, which will be found mentioned in the chemical works of the last century.


The air which envelops the globe is a mixture of two of these simple substances, to which chemists have given the names of oxygen and nitrogen; with a very small proportion of carbooric acid, and water in the state of vapour. The last two are considered as accidental ingredients, and not constituent parts; as well on account of the smallness of their quantity, as because they occur in the air in a state of diffusion, and according to the language of the atomic theory, air is composed of one equivalent of oxygen and two of nitrogen, or its atoms are one atom of oxygen united with two of nitrogen. The atomic weights of oxygen and nitrogen being as 8 to 14, the proportion between the weights of the two contained in any quantity of air will be that of 8 to 28 or 2 to 7, that is, nine grains of air contain two grains of oxygen, and seven of nitrogen. The best experiments are found to agree very nearly with this, when the air is perfectly pure. In measuring these proportions by volume, as it is called, that is, ascertaining the relative spaces which would be occupied by the gases which form air when at the same pressure and temperature, it is found that one cubic inch of oxygen, mixed with four of nitrogen, in a vessel containing five cubic inches, will fill it with air of the same pressure and temperature as the oxygen and nitrogen.

The quantity of carbooric acid found in air, varies from three to eight parts out of a thousand in weight; and the quantity of water in a state of vapour is very variable, but is not generally more than 14 per cent. of the whole weight. The proportions of oxygen and nitrogen are found not to be accurately either for the whole globe, or for the heights of the surrounding atmosphere. This was tried by M. Gay Lussac on air which he brought down with him from a height of 22,000 feet above the level of the sea. [See 658/9.]

A thousand cubic inches of dry air, the barometer standing at thirty inches, and Fahrenheit's thermometer at 60°, weigh about 30 grains. This is at present considered as the mean, and by small numbers of grains not exceeding six; that is, the weight of the above volume of air may possibly be as much as 311 grains. Biot and Thirard agree in stating the latter, and the former has been long used by British chemists, on the authority of Sir G. C. Sturkburg. The supposed law of pressure and temperature, weighs 252,525 grains; that is, water must be reckoned as about 628 or 812 times as heavy as air, according as we prefer the first or second determination above cited.

We have stated that the air is a mixture of oxygen and nitrogen, and not a chemical combination. In what the difference consists, it is impossible at present to say; but the distinction may be illustrated by the following experiment.

To a mixture of air, oxygen, and one grain of hydrogen, be confined in a glass tube from which the air has been previously excluded, they may be mixed in that state, and the mixture thus formed will not prevent either gas from separating from the other, and combining with any third body. That is, the oxygen, for example, will combine as readily with any substance which has a great affinity for it, as if the hydrogen were not present. But if a succession of electric sparks be passed through the tube, a mixture of hydrogen and oxygen is produced, and by some species of mutual connexion very different from the former one, and which has the name of chemical combination. Nine grains of common water are formed from the eight of oxygen and one of hydrogen. The oxygen will not combine with the hydrogen as well as the oxygen of a mixture of a third substance, and there are few for which the oxygen has a greater affinity than for the hydrogen. The general characters which distinguish chemical combination from simple mixture, are, that in the former there is usually an alteration in the specific gravity, resistive power, law of dilatation from heat, &c.; that is, the specific gravity for example, of the compound, does not follow the rule for determining the specific gravity of the mixture (see from a mixture of the ingredients of the compound) agreed that when, as happens with regard to the air, no change takes place in any of the above mentioned phenomena, other than might be directly inferred from our knowledge of the component elements, the compound should receive the name of a mixture, and not of a chemical combination.

We have seen in the experiments already cited, that two elements which, when properly combined, produce a substance very different from either, may be placed in juxtaposition, and do so without any such consequence following. If nitrogen and oxygen formed no other compound except atmospheric air, we might, perhaps, call the latter a chemical compound, but we should then be obliged to say, that the affinity of nitrogen for oxygen is so strong, as to produce this is the fact. One equivalent of nitrogen may unite with one, two, three, four, or five equivalents of oxygen, forming the nitrous and nitric oxides, the hypomuriuric acid, and the nitric and nitrous acids; all of which have every characteristic of chemical combinations. It must be acknowledged, however, that it is difficult to account for the constant proportion of the oxygen and nitrogen in every part of the atmosphere and in every part of the globe. The explanations which have been proposed seem inconclusive.

The composition of air may be ascertained either synthetically or analytically. Synthetically, by mixing the proportions already noticed of oxygen and nitrogen; in which case it is found, that the mixture differs in no respect from common air. Analytically, by an experiment similar to the one already cited; in which, however, it is presumed, that we know the composition of water. If hydrogen be added or mixed with a portion of common air, and the electric spark be passed repeatedly through this, it will be found that the hydrogen has combined with eight times its weight of oxygen (if there be so much,) and has produced nine times its weight of water. In this way, by trial, the quantity of hydrogen may be found which will combine with all the oxygen in the mixture, and the remainder is then found to be simply nitrogen.

Such are the principal chemical properties of air. For its effects upon animal life, see Respiration.

We have already observed that the air, in common with all other bodies, has weight. This is proved by weighing a bottle which contains air in a very delicate balance, and
Then by repeating the process after the air has been exhausted from the bottle by the air-pump. From this we are immediately led to conclude that, like all other heavy fluids, it exercises pressure upon all substances which are in contact with it, and which are not fixed by other orders of discovery. The pressure was ascertained long before there was any other reason except analogy for inferring the weight, and the latter discovery was a consequence of the former. It is true, that Aristotle (Stanley's History of Philosophy, Aristotle, p. 155.) had observed that the air has weight, and even cites the experiment of a bladder, which he asserts weighs more when filled with air than when empty: but his followers of the middle ages entirely abandoned the doctrine. We shall speak more at length of the discovery, under the head of the pressure of the atmosphere, which we are about to observe, that the density of the air depends upon, and is a consequence of, the pressure of the superincumbent atmosphere. For the air is an elastic fluid, that is, its bulk increases, and its density diminishes, whenever the exterior pressure is wholly or partially removed. Let a loose bladder, tied at the mouth, and not so full of air as to be distended, be placed under the receiver of an air-pump, so that the air which presses the outside of the bladder can be exhausted. When the tube is stopped, and the bladder is allowed to remain for some time, it will manifestly be found to have increased in volume. This is explained by the air having in itself a force which tends to separate the particles from one another, or to expand the whole bulk, but which force grows less and less as the particles are separated, that is, as the bulk increases, the state of rest will always be that in which the elastic force upon a square inch of the surface of air, arising from its own constitution, just balances the external pressure upon that square inch. To illustrate this, suppose a vertical tube, A B C D, open at both ends, at first, and filled with air, which communicates with the exterior atmosphere. Place a slight membrane, E F, across it, which can be moved up and down the tube. When the tube is closed, that is, when the membrane is stationary, the pressure of the air is equal to the weight of the column of air above E F. If the tube were perfectly free to expand, it would be found that the pressure of the air above and below would be in the least degree unequal. At present there are two equal and opposite pressures on the two sides of E F, arising from the weight of the column of air above E F. For if the pressure from underneath were less than that from above, E F would move downwards, and rise. Now cover the end B D of the tube, so that the air in E F B D shall have no communication with the exterior air. The membrane, E F, still remains at rest; that is, the air in E F B D, without being united by the exterior atmosphere through the section B D, exerts the same force upon E F from below as the exterior atmosphere does from above. This is what we mean by the elastic force of the atmosphere, as distinguished from the weight of the superincumbent column of air. The first confounds us; we only wish to impress upon the reader, that this repulsive force of the particles of air, of which we know nothing but its effects, is a counterbalancing force from without, to speak, to the pressure from without, and is greater or less according to the less or greater nearness of the particles, as we shall proceed to exemplify. To get a more distinct idea of the superincumbent pressure on E F, suppose the air to be entirely removed from above E F, so that the membrane must keep the pressure counterbalanced force beneath from driving it up, and exhibiting the phenomena of the air-gun. Let a liquid, mercury for example, be poured into the tube, until there is no longer any occasion to hold down E F, or until the force of the mercury can just set into play the pressure of the air from below. In the average state of the atmosphere, this will require about thirty inches of the tube above E F to be filled with mercury. Now let half the mercury be removed, that is, let it only stand fifteen inches above E F. This is not sufficient to counterbalance the pressure from beneath, and the membrane will rise to twice its height above B D, that is, the air will now occupy twice the space which it did before. But this will not happen immediately, for it will settle at first at something less than the height before mentioned, and attain that height by degrees. The reason would be manifest if a thermometer were placed in the space E B F D; for it would be found that the thermometer would fall when the experiment was begun, and would rise on the air having set free, to its original height as the membrane acquired its full distance from B D. Similarly, if the quantity of mercury were doubled and made to stand at sixty inches above E F, the pressure on E F would be greater than that from beneath; the membrane would descend, the thermometer would fall to the same time; and by the time the thermometer again indicated the same temperature as at first, the membrane E F would stand at half its original distance from B D. If any other quantities of mercury were added or taken away, similar results would be found, so soon as the alternation of temperature was balanced by the surrounding atmosphere, which, in the first case, imparts heat to the apparatus, and, in the other, receives heat from it. Thus, if only one-third of the air were left in the tube, the air would not rise until it had expanded into three times its dimensions. If the mercury were increased five-fold, the air would never furnish a counterpoise until it was reduced to one-fifth of its former dimensions. This remarkable law, which holds for all gases as well as air, may be expressed as this:—If the temperature, the elastic forces of two portions of air (or, which is the same thing, the weights of mercury they will balance) are in direct proportion to the densities, or in inverse proportion to the spaces occupied by these portions. In the apparatus above described, it may be easily shown that the practical method of actually performing the experiment. For this purpose we must refer to Air-pump. The very great pressure of the atmosphere is illustrated by the following experiment. Two hollow hemispheres, loosely placed one upon the other as in the figure: the lower communicates by a tube, in which is a stop-cock, (open for the present,) with the exhausting apparatus of an air-pump. At present there is no impediment to lifting the upper from the lower except its weight; the pressure of the air from within counterbalances that from without. But if the air be withdrawn from the tube, the stop-cock closed, so that the apparatus can be unscrewed from the air-pump without allowing the air to enter, it will require an enormous force to separate the two. But if the diameter of the circle be fourteen inches, the least force that will separate them will be equivalent to about half a ton. Such being the external pressure, it may appear extraordinary that the human body is capable of supporting it without being crushed to atoms. The pressure on the body is computed at several tons. But the cause of wonder is purely imaginary. In the words of Dr. Robson, 'the human body is a bundle of solids, filled or mixed with fluids, and there are few or no parts of it which are empty. All communicate either by vessels or pores; and the whole surface is a sieve, through which the insensible perspiration is performed. The whole extended surface of the lungs is open to the pressure of the atmosphere; everything that requires air to be admitted, and to have speedy access given to every part, the body will not be damaged by the pressure, however great, any more than a wet sponge would be drenched by pressing it any depth in water.' (Mechanical Philosophy, vol. iii. p. 541.). The temperature of the air is already mentioned to influence its elastic force. We have every reason to conclude, that the principal properties of this and all other gases are a consequence of the presence of heat, though we do not know what the latter is. It is probable that the first liquid, and then solid, if it could be made sufficiently cold. Like all other substances, air gives off heat when it is compressed, that is, raises the temperature of surrounding bodies, and are set free. This is strikingly illustrated by the fact that tinder can easily be set on fire by pouring into an air-pump, which is contained is suddenly and violently compressed. From careful experiments it appears, that air and all other gases, as well as vapours, and also all mixtures o
gases and vapours, obtain an increase of elastic force for every increase of temperature, and expand, therefore, if expansion be possible, in the vessel which contains them. The quantity of this expansion, when the temperature passes from the freezing to the boiling point of water, (that is, from 32° to 212° of Fahrenheit's, from 0° to 100° of Réaumur's, and from 4° to 100° of the Centigrade, thermometers,) is 35% parts out of a thousand of the bulk which it had at the freezing point. That is, in the apparatus of the preceding part of this article, form a graduated scale along AS, and suppose that BE contains a thousand parts, and that, the upper air being removed, as much as is poured in which EF will cause the membrane EF to stand at E, when the temperature of the air is at the freezing point of water. Then, if the air be gradually heated from the freezing to the boiling point of water, either more mercury must be poured in, or the membrane with the superincumbent mercury will rise through 357 divisions more of the scale, and EF will stand at 1375. And this dilatation is uniform: that is, whatever expansion arises from an increase of 1° of temperature, half as much again arises from an increase of 6°, twice as much from one of 24°, and so on. This remarkable law, which holds, with perhaps a slight variation, at very high and very low temperatures, was discovered nearly at the same time by Dalton in England, and Gay-Lussac in France. Fahrenheit's thermometer, from 212° to 32°, or 180° between the boiling and freezing points of water; 80° in Réaumur's, and 100 in the Centigrade. Consequently the whole increase of bulk, or \( \Delta V \), will give \( \Delta T \times V_0 \times 3 \times 32 \), for the variations of bulk corresponding to a rise of one degree of the Centigrade, of Fahrenheit's, and of Réaumur's, the three thermometers; that is, \( \Delta T \), \( \Delta T \), and \( \Delta T \), respectively. But in applying these rules, it must be recollected, that, taking Fahrenheit's thermometer, for example, the expansion is \( \Delta T \) of the bulk which it had at the freezing point. Suppose, for instance, we have a bulk of air which occupies 1000 cubic inches at the temperature of 62° Fahrenheit, and we wish to know how much it would occupy under the same pressure at 82° of the same. The first temperature is 30° above the freezing point, so that the 1000 cubic inches are composed of—firstly, the bulk at the freezing point, secondly, \( \Delta T \) or \( \frac{1}{2} \Delta T \) of that bulk due to the additional 30° of temperature. Therefore, the 1000 cubic inches are \( \frac{1}{2} \Delta T \) or \( \frac{1}{4} \Delta T \) of the bulk at the freezing point, which latter must, therefore, be \( \frac{1}{2} \Delta T \) of 1000 cubic inches, or \( \frac{1}{4} \Delta T \). It is \( \frac{1}{2} \Delta T \) of this which is added for every degree between 62° and 82° or \( \Delta T \) that is, for the whole 20°. Now \( \frac{1}{2} \Delta T \) of \( \frac{1}{2} \Delta T \) is \( \frac{1}{4} \) cubic inches, whereas \( 1000 \times \frac{1}{4} \) cubic inches is the bulk at 82°.

This law appears not to be quite exact at very high or very low temperatures. We subjoin the results of the experiments of MM. Dulong and Petit upon the relative expansions of air and mercury. [Pouillet, Éléments de Physique, first edition, vol. i. part i. p. 259.]

From the first two columns of which we see that the dilatation of air and mercury are not exactly in the same proportion at high temperatures. The third column is derived from the first two, thus: if, in passing through 100° on the air thermometer, the bulk 10,000 increased to 13,750, what increase of bulk will arise from supposing a further increase of 48.70 degrees? We see that when the mercury is dilated as so to increase half as much as it increased from the freezing to the boiling point of water, (from 100° to 150°,) the air does not gain quite so much (from 100° to 148° 70). This is, either the mercury is more, or the air, suspended in mercury, comes to the boiling point of water, than below. Certain theoretical considerations, into which we cannot here enter, make it highly probable that it is the mercury which takes a greater rate of expansion, and that the law above stated is rigorously true for air and glass at the temperature on which it is based. On the properties of air with regard to other bodies, we may notice that probably there is a slight adhesion of air to many, if not to all, surfaces. A small needle may be made to swim on water, and in this state the water evidently requires to be drawn around it by a force, as it is, suspended in air. This fluid is attributed to the adhesion of a coat of air, which, with the iron, makes the whole specifically lighter than the water. Recent experiments on the pendulum, the most delicate of all philosophical instruments, have led some to suspect, that in addition to the resistance of the air, a slight coating of this substance travels with the pendulum, and thereby causes an irregular addition to its weight. [See Pendulum.]

In this article we have considered only the chemical and mechanical properties of air. The constitution of the whole mass will come under the article Atmosphere. To complete the subject, refer to Oxygen, Respiration, Combustion, Ventilation, Acoustics, Aerodynamics, and also to Turner's Chemistry, fourth edition, p. 293; Bispo. Précis de Physique, 207; and the various articles on the subject in the Encyclopædia Metropolitana.

AIR-GUN. An instrument for projecting bullets, in which the moving power is the rush of condensed air allowed to escape, instead of the formation of gases arising from the ignition of gunpowder. The air-gun and the common gun are therefore the same in principle, and it is only necessary to describe the peculiarity of its mechanism.

The above given is the section of one of the earlier species of air-guns.

In the stock of the gun is a condensing syringe, the piston of which is MS, by means of which air is condensed into the cavity CS, which has a valve opening inwards, just beating the muzzle. The barrel A, is open, and the bullet (which should just fit the barrel) is inserted in the usual way. The trigger, O, opens the valve behind the bullet, and permits the rush of the condensed air, which propels it forward. The moment the trigger is withdrawn from the trigger, the air closes the valve, and expands somewhat less condensed than before, for the next discharge.

The same principle has been variously applied. In the magazine air-gun, there is a reservoir of bullets, in a channel under the barrel, one of which is turned in by a cylindrical cock pierced by a tube, in which one position is a continuation of the reservoir of bullets, and in another, of the barrel. Thus by turning the gun upside down and turning the cock, a bullet falls into it from the reservoir, which, on returning the cock, is of course in the barrel. In some air-guns, the cavity containing the condensed air is a hollow copper ball, which can be screwed on to the gun after condensation. The air-cane is so called because it is usually in the form of a walking-stick. The handle contains the condensed air, and can be unscrewed and filled by a separate condensing syringe. There is some mention of an instrument similar in principle to the air-gun among the ancients; and it is said that Ctesibius, a celebrated mechanical philosopher, who lived, a.c. 120, at Alexandria, constructed an instrument which the air, by its elastic force, discharged an arrow from a tube. (Montucla, Histoire des Mathématiques, vol. i. p. 267.) The invention, such as we have described, is ascribed to Marin, a native of Lisieux, in France, who is said to have presented an air-gun to Henry IV.
No power, but only a convenient adaptation of power, is gained in an air-gun, since the condensation of the air requires force. If the arm which condenses the air into the cavity could, without exertion, follow the bullet, and employ its force only in pushing the latter onwards, it would communicate the velocity which the bullet would receive from the gun, before as much force had been expended as would be required for the condensation; for the whole force employed in overcoming the friction of the piston would be saved. This consideration will be more fully discussed in the article Machine.

The elastic force of the gas produced from gunpowder is stated by Dr. cottton to be about 1600 times that of common air, at the moment when it is produced. And the velocities which are produced by different forces are not as the forces themselves, but as the square roots of the forces. Attending to this consideration only, a compression of forty atmospheres, as it is called,—that is, a condensation of forty equal bulks of air into one,—would give a velocity bearing to that of gunpowder the proportion of the square root of 40 to that of 1000, or one-fifth. But there is another circumstance to be attended to. The gas generated from gunpowder quickly expands itself into many times its first dimensions, thereby diminishing its elastic force in the same proportion; whereas, if the cavity be large, the expansion of the air in the cavity, when it has also filled the barrel, will not materially alter its force. Attending to this proposition, and making a rough calculation, that, from the preceding supposition, we might expect to have more than half the velocity of gunpowder.

The air-gun has never been used in war, on account of its expense, and the force which must be exerted to condense the air. The latter objection has disappeared since the use of steam: a very small and portable engines kept constantly at work would provide ammunition for a large army. For great guns, the use of condensed air has never, to our knowledge, been attempted; in fact, the air-gun itself has always been considered as a toy, unless in a very few cases, where it has been the instrument of private and cowardly revenge.

AIR-PUMP. A philosophical instrument for removing the air out of a vessel. We shall also include under this head the apparatus for forcing more air into a vessel, better known by the name of the Condensing Syringe, as the two differ very slightly in their main principle and simplest construction.

Above we have the sections of the simplest forms of an exhausting and of a condensing syringe. Both consist of a tube closed at one end, excepting an orifice to which a valve or lid is attached. A piston, with a rod and handle, enters at the other end, and can be moved up and down the tube. The piston is not entirely closed, but has a valve opening the same way as the other valve. Both are attached to vessels, the air of which is to be rared or condensed. In fig. 1, or the exhausting syringe, both valves open upwards; or let air only out of the vessel and the piston: in fig. 2, or the condensing syringe, both open downwards, or let air only into the vessel and the piston.

Let the whole content of each vessel be, for example, six times that of the tube of the syringe, and let both pistons be pushed down. We first take the exhausting syringe. The instant the piston begins to rise, there is no air between a and s, the valve is kept shut by the pressure of the exterior air, while the air in the vessel, pressing on n from underneath at the rate of about fifteen pounds to the square inch, raises it, and the air in the vessel is thus distributed between the vessel and the tube. If we call the tube one measure, the vessel is six measures; so that the air which occupied six measures now occupies seven, or is only six-sevenths of its former density. When the piston is returned again, the air in the tube is compressed, but cannot return into the vessel, because a does not open inwards. By the time the piston has returned through one-seventh of its descent, the equilibrium between the air in the tube and the external air will be re-established; and by the time the piston has descended so far that half the force acquired from compression will suffice to lift the valve a, the latter will open, and the air will rush out. This continues until the piston has quite returned to a. That is to say, after every stroke of the piston, the air in the vessel has only six-sevenths of the density which it had before the stroke, since the air contained in six measures is expanded into seven by the rise of the piston. Therefore at the end of the second stroke, the density is $\frac{6}{7}$ of $\frac{5}{6}$, that is, 36 measures of common air would weigh as much as 40 of this air we have now got inside the vessel. At the end of the third stroke the density is $\frac{6}{7}$ of $\frac{5}{6}$ of $\frac{4}{5}$; Without going farther, suffice it to say, that at the end of the twentieth stroke, the density of the rarefied air is about $\frac{1}{10}$; and at the end of 100 strokes, it will be $\frac{1}{10}$ of a measure, or seven times as much. The number of strokes will not be the case, for the elastic force of the air diminishes in the same proportion as its density, being at first fifteen pounds to the square inch; so that by the time the density is reduced to $\frac{1}{10}$, the valve, if it should not open, would not, if it be too heavy as half an ounce. Let us, then, suppose a to be fastened to the piston by a loose string, so long that it becomes tightened just before the piston reaches its greatest height. The string then opens the valve, and the rarefaction will take place as usual.

The condensing instrument will now be easily understood. Let the piston be raised, the valves will then be open; but the moment the piston begins to descend, the rush of air outward will shut c, and the whole of the air to the whole of the air in the tube will be forced into the vessel, which admits it, since d opens inwards. If this be done quickly, so that hardly any air escapes, seven measures of air, after the stroke, will occupy the space filled by six measures before it, so that the quantity of air in the tube will be $\frac{7}{6}$, and the measures of condensed air will weigh as much as seven of common air. When the piston returns, air rushes in through c, and presses the valve d, which nevertheless, unless made too heavy, does not open, because it is pressed with a force from within. In every succeeding stroke an additional measure of common air is added to the stock already contained in the vessel. At the end of the second stroke the density is $\frac{6}{7}$; at the end of the third $\frac{5}{6}$, and so on. Every succeeding stroke will be more difficult; for the air contained between c and d in the descent of the piston, will not force d open, until it is more compressed than the air within the vessel. Also the condensation increases only in arithmetic progression, while the corresponding rarefaction in the exhausting syringe takes place in geometrical progression. It would take 30,000,000 of strokes, all but one, to produce a condensation, the corresponding rarefaction to which is gained in a hundred. It is needless to say that no materials we could put together would bear such a pressure, and no force we could exert would create it.

The exhausting syringe we have described, is, in principle, the common air-pump. We shall now proceed to describe Cuthbertson's air-pump, containing the most recent material improvements.

The circular plate at the top is metal ground to a perfect plane surface, on which is placed an inverted glass jar, from which the air is to be exhausted, called the receiver, the base of which is also carefully ground, so that the plate be slightly smeared with grease and the receiver placed upon it, the junction of the two is air-tight. The hole in the middle of the plate is the end of a tube, which extends vertically downwards until, curving at the bottom, it passes through the front beam below the barrels, with the interior
in our first exemplification are performed. A little higher up the barrel we find the piston, as better shown in the adjoining figure. The external part is a partial piston not connected with the piston-rod, but fitting closely to the barrel. The piston-rod, when rising, fits this exactly, renders it air-tight, and causes it also to rise. But when the piston-rod is descending, it will not cause the descent of the exterior, and, as we have called it, partial, piston, until the projecting shoulders a as (in the figure) come upon it; and, as these shoulders do not go all the way round, the piston in descending is not air-tight. This apparatus supplies the place of the upper valve, being air-tight in the ascent, but not so in the descent. Looking above the piston, we find that its rod works in metal shoulders, the interval between which is occupied by stiff leathers. The space above the leathers opposite to o is filled with oil, which is communicated slowly to the leathers, and also to the barrel beneath. From the latter, however, it is immediately expelled by the rise of the piston, which forces it, as well as the air in the barrel, through the channel a. The oil and the air then force up the rod in the cavity r, which rod, working in collars, answers the purpose of a valve. The
oil is there lodged until it is collected in sufficient quantity to flow again into the reservoir at r. The air escapes into the exterior atmosphere.

Having shown that we have here an under valve shut during the descent, and open during the ascent; with an upper valve open during the descent and shut during the ascent, we need not repeat the manner in which the rarefaction is produced, or the manner in which it is preceded. By this valve is shut the branch from the main tube which enters the receiver, is carried through the under wood-work in front, and emerges at s. It is here stopped by a screw; but when the operator desires to discharge the air under the receiver, he opens this screw, upon which the communication between the exterior atmosphere and the receiver is restored, and the air rushes in. In the perspective figure, a cross bar, in which the upper parts of the barrels are enclosed to strengthen them in their position, is omitted for clearness.

The following experiments are among the most common of those shown with the air-pump:—1. If the receiver be open at both ends, and the upper orifice be stopped by the hand,—on exhaustion, the pressure of the exterior air will prevent the removal of the hand. If a piece of blader be tied tight over the orifice, as the exhaustion proceeds, the bladder will be pressed inwards, and will finally burst with a loud noise. The pressure of the air is also proved by the experiment of the hemispheres, described in the article Air.

2. The weight of the air is proved by exhausting a copper ball furnished with a stop-cock, which is shut before the ball is removed from the air-pump. It will then be found to weigh less than before the exhaustion was made.

3. The pressure of the air in general may be detected. A glass of liquid placed under the receiver will give out bubbles of air as soon as the exhaustion begins. A shrivelled apple will be restored to apparent freshness by the exhaustion. The receiver, air contained in the bladder will be forced out to a certain degree, and will resume its original appearance when the air is allowed to enter.

4. The elasticity of air may be shown by placing a bladder under the receiver, not distended, and the mouth of which is tied up. On exhausting the receiver, the air contained in the bladder will be forced out; but will resume its original appearance when the air is allowed to enter.

The first vacuum was made by Torricelli (see Torricelli, Barometer, but the first air-pump was constructed by Otto von Guericke, who exhibited it publicly at the Imperial Diet of Ratisbon in 1654. It was an exhausting syringe, attached underneath a spherical glass receiver, and worked somewhat like a common pump. The syringe was entirely immersed in water to render it air-tight. Shortly afterwards, Boyle constructed an air-pump in which the syringe was so far improved that the water could be dispens'd with. He also first applied rack work to the syringe. The second syringe and the barometer-gauge were afterwards added by Hawksbee, and several minor improvements were made by Gravesend and Smeaton. All the alterations which have been made since the time of the invention, how-
ever important, relate to the mechanism only, and not to the principle on which the pump acts.

We give, in the preceding diagram, a drawing of a more portable and less expensive species of air-pump, which, after what we have said, will need no description.

The small plate behind the receiver is for another small receiver in which a gauge is placed. This gauge is nothing more than a common barometer, which falls in the diminution of pressure from the air in the receiver, in the same way as the common barometer when the pressure of the exterior air is lessened by a change of weather.

For further details see Huxton's Mathematic Dictionary, Encyclopædia Londinensis, article 'Pneumatic.' Lardner's Cyclopædia, article 'Pneumatics.' Biot, Traité de Phüne, i. 127.

AIR, in music, signifies Melody; the terms are synonymous; it being understood that by both words is meant succession of single sounds in measured time.

The etymology of this word is very uncertain. The Delta Crucca Dictionary quotes Redi, who died in 1659, as the first who used the term in a musical sense; but had the compilers of that ponderous work been more diligent in their research, they would have discovered that an eminent writer of their own country, Zarlino, in his Istitioni Harmomiche (Veneti, 1589), had employed it more than a century and a half earlier. It is found in Morley's Introduction and in the Tempest both of which were published in 1597; and, about the same time, Shakespeare introduced it in his Tempest.

The term air, as employed in music, is most likely not derived from any word that bears the same meaning, but has its origin, we are inclined to think, from the word aether, which owed its birth to the perception of a certain resemblance between elemental air and melody (or musical air) in the qualities of lightness and buoyancy, elemental air occupying the upper part of our sphere, as melody occupies the upper part of music. And here it is necessary to our hypothesis to state, that the term air certainly was not applied to musical purposes till long after harmony, or music in parts, was commonly practised, and treated as an important branch of the art.

Rousseau says that the name of air is given to all melodies, to distinguish them from recitative. M. Suard, in the Encyclopædie Methodique, mildly censures this opinion, and, with some hesitation, offers the following definition:—"A composition of music composed of certain representative phrases, united in a regular symmetrical form, and terminating in the key in which it began. Sulzer has followed M. Suard; so has Pietro Lichenthall; but, without objecting to his definition, we consider the term air as comprehending the best, namely that succession of single sounds, regulated by the laws of musical rhythm, which constitutes what, in homely language, is called a tune. [See Rhythm.]

Air is, allowedly, the most important of the constituents of music. A composition may be completely imitated with learned and ingenious harmony, may abound in fuge, in imitation, and all the contrivances of science, but without good melody will never appeal to the heart, and seldom afford any gratification to the ear. Haydn carried this opinion so far as to say, 'Let your air be good, and your composition, whatever it may be, will possess beauty, and must certainly please.' Air is in music what design and outline are in the sister art of painting; harmony is the filling up, and the colouring. (See Marcello's Precepts to his Pupils, quoted in an article on Ancient Greek Music, in No. V. of the Philological Museum.)

The Greeks had many kinds of airs, which they called nomes, or songs; and we learn from the work of Philodemus on Music, recovered from the ruins of Herculaneum, that every trade and occupation had its Neme, or appropriate airs, which were played or sung to the workmen while they laboured.

The various kinds of airs, instrumental as well as vocal, will be found under their different heads. [See Allemand, Barcarolle, &c.] In music composed for the theatre and which is constantly introduced into the concert-room, the following varieties of air, designated by Italian denominations, are

1. The Aria di Carattere (characteristic air), which is distinguished by force and energy of expression, and by dramatic effect.

2. The Aria Parlante (speaking air), which is rather declined than sung, and is best suited to the buffo, or comic performer.
3. The *Aria di Cantabile* (singing air), a tender, pathetic air, calling forth the expression and taste of the singer.

AIR-BLADDER, in ichthyology, a peculiar organ with which the great majority of fishes are provided, and by which they are enabled to adapt the specific gravity of their bodies to the various pressures of the supermartenum water at different depths. Generally speaking, the specific gravity of the muscles, cartilages, &c., or, if we may be permitted to use the expression, of the flesh, of fishes, differs in no sensible degree from that of the elements of which it is composed; but it will be observed, that this specific gravity cannot be altered by the operation of the animal: hence arises the necessity of some peculiarity to enable the individual to adapt itself to the varied and rapid change of circumstances, to which fishes, above all other animals, are particularly subject. This important object is accomplished by means of the organ usually called the air-bladder, because it serves as a receptacle for a certain quantity of air, by the increase or decrease of which the individual can, in a great measure, adjust the relative weight, compared with that of the surrounding fluid, is accomplished. The vessel itself is composed of a lengthened sack, sometimes simple, as in the common perch, or sometimes divided into two or more compartments, by a lateral or transverse partition, and sometimes furnished with appendages, more or less numerous, according to the particular species. In all cases, it is composed of a thin internal coat of a fibrous texture, and of a very thin external coat; the whole being enveloped in the general integument of the intestines.

The modifications of this organ are infinitely varied in different genera and species of fishes. In the greater number of instances, it has no external opening, and the air which is introduced into it is intended to be produced by the secretion of a certain glandular organ, with which it is in all these cases provided. In fresh-water fishes, the air-bladder communicates sometimes with the oesophagus, and sometimes with the stomach, by means of a small tubular opening, that in some instances, in which it has a direct external communication with the intestines, the secreting glands above-mentioned do not exist: thus giving us strong reason to believe that its functions and uses are not uniformly the same in all the different classes of fishes. A very limited number of species, among others the common eel, have air-bladders, not only opening by an external duct, but likewise provided with secreting glands; and this occupying an intermediate station between the two larger classes, at least as far as the matter of the origin of this organ is concerned.

In general, all fishes which enjoy great powers of locomotion, and have occasion to pass through various degrees of supermartenum pressure in their rapid transitions from the surface of the ocean to the bottom, are equipped with this important organ; and so indispensably is it in their economy, that those which, for the sake of experiment, have been deprived of it, have sinks helplessly to the bottom, and then remained incapable of moving, or even of maintaining their equilibrium. But to fishes whose habits and occupation confine them either to the surface of the water or to the bottom of the sea, and which, therefore, do not require to pass through different depths, or to encounter different degrees of pressure, the possession of an air-bladder is by no means so essential. Accordingly we find, that in various species of rays and placodontes or flat fish, such as skate-s, sole-s, turbot-s, brilis, &c, which live only upon the coasts and sand-banks at the bottom of the ocean, as well as the monk-fish and others which find their food entirely at the surface, have no air-bladder; and so small is the relation of this otherwise important organ to the general constitution of fishes, that we sometimes find it present in one species, and wanting altogether in another of the same genus. Notwithstanding, this organ, when properly supplied, may be connected with the respiration of fishes, and have added facts in support of this opinion, which certainly render it extremely probable. At present, however, nothing certain in this respect is known: for we are told that the air-bladder is well connected with the nature and functions of the air-bladder, or, as they most commonly call it, the swim. They are accustomed to perforate this vessel with a fine needle in eel, and other species which require to be brought hither market, sometimes from a very great distance. By this operation, the confined air is allowed to escape, and the fish contained to remain quiet at the bottom of their well-boats, where they live for a very considerable time. All species which are brought in great quantities from Newfoundland, are nothing more than the salted air-bladders of these fishes.

The Iceland fishermen, as well as those of America, prepare singlass of a very excellent quality from eel-sounds, though they are not acquainted with the method of preparing it, which the Russians practise in preparing that article from the sound of the sturgeon. [See *Singlass*.]

AIR-CCELS, in plants, are cavities in the leaves or stems, or other parts, containing air. In water-plants they have a very definite use. Their development is due to the excess of cellular gas, which is brought in great quantities from Newfoundland, nothing more than the salted air-bladders of these fishes. The Iceland fishermen, as well as those of America, prepare singlass of a very excellent quality from eel-sounds, though they are not acquainted with the method of preparing it, which the Russians practise in preparing that article from the sound of the sturgeon. [See *Singlass*.

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AIR-PLANTS are so called because they possess the power of living for a considerable time if suspended in air without being in contact with any substance from which they can absorb food. It is, however, a mistake to suppose that these plants live without the aid of water, and that such a situation is that in which they will thrive; they will only exist in air for a shorter or longer period, according to the species and to other circumstances, but in the end they will perish.

There are two different tribes to which the name of air-plants has been applied; of which one, containing the moss-like *Tiarella* variegata, which hangs in festoons from the branches of trees in the hot damp forests of tropical America; the other, which is believed to be the balloons of the house of *Baygues Ayers* is called by botanists *parachute*, the other, abundantly in species of the most different nature and appearance, is named *Orchideae*. It is to the latter, almost exclusively, that the gardener has hitherto turned his attention, it being necessary to preserve such perfect domiciles. The method of growing them was so entirely unknown, that no one ever expected to preserve a species beyond a few months after its importation. The application of physiological principles has, however, at length overcome all obstacles, so that air-plants have become comparatively common in the hot-houses of the lovers of beautiful flowers; and there appears little reason to doubt that in a few years it will be as common in the domestic gardens of the rich inhabitants of this country as they long have been in the houses of the Chinese: a purpose for which the surpassing beauty and delicious fragrance of many render them particularly well adapted.

The native country of these curious plants is wherever a climate is found in which heat and moisture are in excess. Within the tropics in Asia, Africa, and America, in damp and shady forests, by the side of waters, within reach of the spray of waterfalls, perched upon the branches of trees, or clinging by means of a short stem at a distance from the ground, they are found in abundance, and produce their leafy fronds, creeper up mass, rearing their flowers in the midst of leaves and other moisture-loving tribes,—in all such situations they are found in abundance. But in those regions where the heat is accompanied by the presence of dryness, such as the open plains of India, and the sandy deserts of Arabia and Africa, they are almost entirely unknown. The principal stations for them are the woods of Brazil and Peru, the lower mountains of Mexico, the West Indies, Malacca, and the Atlantic islands; the air-bladder may be connected with the respiration of fishes, and have added facts in support of this opinion, which certainly render it extremely probable. At present, however, nothing certain in this respect is known: for we are told that the air-bladder is well connected with the nature and functions of the air-bladder, or, as they most commonly call it, the swim. They are accustomed to perforate this vessel with a fine needle in eel, and other species which require to be brought hither market, sometimes from a very great distance. By this
solar light; 3. a great degree of dampness; and, 4. a perfect freedom from stagnant water round their roots: for on the trunks of trees or on stones and rocks no water can lodge, and all the moisture they receive must necessarily be in the form of falling rain. And it is to circumstances of this nature that the gardener has chiefly to attend. Damp, shade, heat, and good drainage will be his objects; the three former will cause him no trouble, but the latter will require him to sit entirely his usual mode of cultivation. Instead of considerable spaces of earth being placed, he will endeavour to dispense with soil, and to supply its place with bits of rotten wood, chopped moss in very small quantities, fragments of half-baked pottery, such as garden-pots, and the like.

The following is the manner which enable modern gardeners to obtain a certain degree of success. But equal at least in importance to all of them is a circumstance of which they are only just beginning to be aware, namely, that air-plants and all other tropical plants require a period of repose and cessation from vigorous growth. If a gardener were to be told that he ought to keep his vines or his peaches growing incessantly without any season of rest, he would consider his adviser either a madman, or an ignorant pretender; and yet he himself considers a tree to be more lively than his hothouse and greenhouse plants. He is incessantly endeavouring to maintain the perpetual spring of the poets, and he wonders that his plants are sickly and barren. This arises from misunderstanding the well-known fact, that there is no winter in hot countries; but in these regions, there is neither frost nor snow, and that in many climates there is no cold season—but it does not, therefore, follow that plants have no season of repose. The fact is, that within the tropics, or in those latitudes where frost and snow and perpetual cold do not exist, the season of rest, which is the time of the year vegetation is arrested by a parching air and a fervid sun; the current of life in the trees of the forest becomes languid, herds lose their stumps and disappear, leaves drop from the trees, some are flown away by the hard, thin rind that encloses it, and naturally for a time desolation; plants are then in a state of rest analogous to that to which they are subjected by the winters of Europe. But after a season rain begins to fall, at first gentle and of little benefit: it is rare for that period to pass, but the ground is moist, flowers expand—and the air-plants, which had hung during the dry season from the branches like withered, shapeless things, are roused from their slumber, fill themselves with moisture, and rapidly participate in the general forces of nature.

This is to which the gardener should attend; it is this which explains the difference between the success of one cultivator and another; and it is to a knowledge of this, that the frequent structure of air-plants is evidently the cause of the rapid development which they are presently to undergo; as it becomes more abundant, the dry and heated ground reeks with the ceaseless showers; the whole country is enveloped in vapour; grass and herbs start up in the fields and wood. Flowers, leaves, flowers, trees, flow—there are no air-plants, which had hung during the dry season from the branches like withered, shapeless things, are roused from their slumber, fill themselves with moisture, and rapidly participate in the general forces of nature.

For further information upon this subject, see Dr. Lindley's Observations in the Transactions of the Horticultural Society, vol. i., New Series, p. 42, and the latter volumes of the Botanical Register. [See Orchidace.]

AIR-VESSELS, in plants, are what botanists call spiral-vessels. It is supposed by some that these are the only parts of the plants containing sap, and that it has been proved that, in some cases at least, the air that they contain consists of a larger proportion of oxygen than atmospheric air. But it is doubtful whether the action of these vessels is more than local, and it is certain that air has tolerably free access to many parts, as the leaves, for example, by means entirely independent of the spiral vessels. [See Tissue of Plants.]

AIR, a river which rises on the north side of Maltby, a civil parish of Kirkby, in the West Riding of Yorkshire, and about six miles east of Settle. The source of this river is a sheet of water about a mile in circumference, called Malham Tarn. From this basin the stream rushes in a torrent down a highly picturesque rocky chasm, and falls through a distance of 100 feet to the valley of Airedale. Flowing then in a south-east direction for about thirty miles, it passes through Leeds, where it becomes navigable; and twelve miles farther on, at Castleford, a village three miles north-west of Pontefract, it forms a junction with the river Calder. The united stream holds then an easterly course to the immediate vicinity of the market-town of Wakefield, when it is joined by the young waters of the five lesser streams which communicate with the river Ouse, a little below the village of Armin. Thus augmented, the stream then takes the name of the Humber, and flows past the town of Kingston-upon-Hull into the German Ocean.

AIR AND CALDER NAVIGATION. [See Calder.]

AIRE, a town in the former province of Artois, and the present department of Pas de Calais (Straits of Calais), stands on the Lys, (which joins the Scheldt at Ghent), and is about nine miles south-west of S. E. of the town of Malmaison, which communicates by a canal. It is a neat town and well paved, but situated in a low marshy soil. It is adorned with fountains, which are so many natural jets; the water, on digging to the depth of 150 feet, rises rapidly to the surface. The chief trade of the town is in linen and fustians: it also makes tiles and soap. The population of Aire is about 9000, and its distance from Paris 132 miles. Aire was the birth-place of Malmaison. It is in 50° 38' N. lat., 2° 23' W. long.

There is another town of the same name in the department of Landes, on the River Adour; but it is now a place of small importance, with a population of about 3500. This place was once the residence of Alaric, king of the Goths; and is the ancient Vercingetorix. It is 468 miles from Paris S.S.W., 43° 43' N. lat. 14° W. long.

AISLE, or AILE, (in Architecture,) indirectly from the Latin word aula, a wing, through the French aile, which has the same signification. In French, this term is applied to the curtained aisles of churches, or the series of courts which separate the nave, or grand central division,—when the structure is so arranged. Sometimes, but incorrectly, with reference to modern churches and chapels in this country, the mere passages or corridors which run between, and give access to the pews, are called aisles. Still more incorrectly, some writers, and even ecclesiastical writers, have called all the longitudinal divisions of the body of a church, aisles, thus excluding the nave and the chancel. The denomination which belongs only to its adjuncts and accessories.

The division of a church into what we term nave and aisles arose simply out of the difficulty which existed of spanning a great breadth with a roof without some intermediate support; and thus the principal churches or basilicas of Rome were built with four rows of columns, forming five longitudinal divisions; that is, with two aisles on each side of the nave. This was imitated in France, and the division which belongs only to its adjuncts and accessories.

In some English books, though perhaps in none of the present century, this term will be found written without the a—

AISNE, in France, one of the many streams whose waters ultimately swell the current of the Seine. It rises just to the west of a chain of hills which form the western boundary of the basin of the Meuse; and, after a course of above 150 miles, first to the north by west, and then to the south, joins the Oise. It flows past St. Menehould, Vouziers, Rethel, (just below which it becomes navigable,) and Soissons. The chief commodities floated down it are wood for fuel, and timber. It has been attempted, but in vain, to unite the Aisne to the Meuse by a canal at its source. This river gives name to a department which lies between those of Ardenne and Marne on the east, and of Somme and Oise on the west; and is bounded on
the south by that of Scine and Marne, and on the north (except where it touches the frontier) by that of Nord. It contains 2196 square miles, and had in 1820 a population of about 490,000 persons. It sends six deputies, and is subdivided into two arrondissements. It includes portions of the ancient Paris, Isle of France, and Champagne; and is traversed by the Oise in the north, the Aisne in the centre, and the Marne in the south. Various tributaries of these streams water it, and the Seine, the Somme, and the other rivers also rise in or on its surface generally consists of undulating plains; there are no hills more than 500 or 600 feet above the level of the sea. The most fertile parts are the high table lands. Chalk in Aix-la-Chapelle, and sand in the others, are found in this department. The quantity of forest land is considerable, and the oil of the beech must bring in, in some years, as much as 26,000 florins. The agricultural produce of the department is abundant. The inhabitants export two-thirds of their harvest; and more oxen, horses, and sheep, compared with the extent of the district, are reared than in most other departments. Excellence cheese is sent to different parts of France. The vine is not cultivated to any great extent. The manufactures are of Aix-en-Thiérache, Famenne, and St. Gobain (the last of which places is known for its mirrors); cotton, at Guise, on the Oise (population 3300); and linens, cottons, shawls in imitation of Calhoun, soap, and vitriolic acid, at St. Quentin. The city is the centre of the department, with a population of above 7000; it also contains St. Quentin on the Somme (population 17,600); Soissons on the Aisne (population 7500)—(see the article upon the latter place); Château-Thierry on the Aisne (population 4100); and Vertins, about twenty miles N.E. of Laon (population 2700), all of which are sub-prefectures. To these may be added La Fère (population 2500), a fortress on the Oise; and La Ferte Milon (population 2300), the birthplace of Racine, on the Ourcq.

AIX, a considerable town of France, in the department of the Bouches du Rhone, (mouths of the Rhone) situated just to the north of the River Are, in a plain surrounded with hills which produce good oil, wine, and fruit. The town owes its origin and its name to the Romans: it is the town of Cys, the Roman name of Aix, Saxerius Calvinus, having defeated the Salluvii, a Gaul tribe, founded a colony here about 120 B.C. and gave it, on account of its medicinal springs, the name of Aqua Sutixae (the waters of Saxerius)—wherein the name of Aix. These springs have been discovered in modern days, and identified by medals and inscriptions dug up: the water is clear, light, and moderately warm, without much taste or smell: and is now in small repute for its virtues. From altars of the god Pantheon, and its image, it has been said, the Romans ascribed the efficacy of the springs to his influence. There are now few remains of antiquity at Aix. In the middle ages, this town was the residence of the Counts of Provence. Aix was a barrier place: the streets are straight and well paved and lighted; and the public buildings handsome. It is surrounded by a wall, but is not fortified, and has eight gates. Among the public buildings may be mentioned the cathedral, a noble structure, which suffered less during the revolution than the other religious edifices, of which there were previously a great number. Among the chief ornaments of the cathedral are the baptistry constructed with the remains of a Roman temple—and the gate of carved walnut tree, which is a curious specimen of the style of the sixteenth century. The town-hall, though situated in a narrow street, is built with some taste; and contains a collection of articles of antiquity, and a library which is occasionally open to the public. The clock tower, near the train in the markethouse place, was erected in the middle ages, and is remarkable for machinery which puts in motion some figures when the clock strikes. The "palais," an ancient building, contains several large halls, in one of which the parliaments of Provence have formerly met. It is surrounded by a large park, with 10,000 trees, and numberless plants and flowers. It was also the residence of the Prince of Peveches — a square of 500 feet, planted with elms, and adorned with a jet de canal in the centre. But the finest public place in the city is the 'Orbiotille,' a large promenade, planted with avenues of trees, and adorned with fountains and gardens, one of which is a license founded in 1149 by Pope Alexander V.; and has now many institutions for the promotion of learning, which, with its valuable libraries and collections of the objects of art or science, public or private, render it an eligible place of study, and have obtained for it the title of the 'Athens' of the south of France. It possesses an academy and schools of theology and law. The public library, one of the richest in France, contains 36,000 volumes. Amongst the charitable institutions are three well-endowed hospitals, those of La Trinite, La Charite, and Hotel Dieu, the last for lunatics. It is the seat of an archbishoprie, of a court royal, and of some other public boards. The procession of the Fete Dieu, which is held at the beginning of the month of August, is still kept up; though the friends of religion did little service in reviving it after its abolition at the revolution. It is a singular masque, in which the clergy and the municipal officers take part.

The population of Aix amounts to 23,000—or, according to other accounts, 27,000—persons, who carry on a considerable trade in hardware, fish, and the productions of the neighbouring country, such as wool, silk, wine, brandy, almonds and other fruits, and oil. This last is much esteemed, but the trade has been deceiving since the destruction of many olive trees in 1787. Among the manufactures are silks, velvets, woolen cloth, and printed calicoes. Its industry and commerce have much increased within the present century.

Aix is in 43° 32' N. lat., and 5° 27' E. long., of Greenwich. It is 478 miles S.S.E. of Paris, and 19° N. of Marseilles.

AIX, a small town of Savoy, with upwards of 2000 inhabitants, may be considered as a place of great antiquity, as is proved by the Roman remains that have been found there, but owes its present importance to two hot springs, which annually attract a great number of visitors. Their temperature is from 112° to 178 F. F. The waters contain a gas, derived from the carbonic acid in the earth, which is called Aqua Albiream, and Aqua Gratiam or Domitiam, and its inhabitants, according to an ancient inscription, were called Aquenses. The origin of the name is the Celtic term Ac' (water), which is the same word as the Latin Aqua (water). The town stands in a pleasant and healthy valley, on the east side of the Lake Bourget, and at an elevation of 823 English feet above the level of the sea. It is seven miles N. by E. of Chambery, the capital of Savoy, and was included in the French department of Mont Blanc, in the year 1814.

AIX-LA-CHAPELLE, 80,000 inhabitants, is situated near the right bank of the Rhine, about 15 miles from the English frontier, or Arken, is now the chief city of the district of Aix-la-Chapelpe, one of the three divisions of the Prussian province of the Lower Rhine. It stands in 50° 47' N. lat., 6° 3' E. long., and 75 miles E. by S., from Brussels, the capital of Belgium. The situation of the city is agreeable: it stands on uneven ground, surrounded by hills of moderate elevation, generally covered with wood. The style of building is en the whole pretty good, and the ramparts, which serve as pre-serve, are well kept, and are height the best in Germany. The city consists of two parts, the inner and outer; and contains seventy-five streets, the hand-most of which is that called the New Street; with three monasteries and eighteen churches. There are many public buildings in the city deserving of notice, either for their antiquity or beauty. The town-house is an old building in the Gothic style, containing the portraits of the pleiopotentaries who made the peace of 1718. The minister, which is said to have been constructed by Charlemagne, contains the tomb of this monarch, a great number of relics, and doors of bronze. The emperors of Germany were once crowned here; and, indeed, as long as the Germanic empire lasted, this city claimed the privilege of being the place of coronation, as it was also the residence of the emperor's relatives and court. The emperors and kingst crowned here varies, according to different accounts, from forty to fifty. The imperial insignia were carried from Aix-la-Chapelpe to Vienna in 1794. There is a handsome theatre in the city of Aix-la-Chapelpe, a public library of 18,000 volumes, a gymnasium, three hospitals, and other charitable foundations.

Aix-la-Chapelpe once possessed a much more extensive commerce than it has at present. This decline has been counterbalanced both by the position of its port on the Rhine, and the facilities for traffic afforded through the city, and, perhaps more particularly, by the sprouting up of other rival seats of industry all around it. It is, however, still a considerable place, with 25,300 houses, and 1829, 36,809 inhabitants. It has manufactures of woolen-cloth, hats, and karakul, and three foundries for the establishment for refining sugar. The chief fabrics of Aix-la-Chapelpe are, however, woolen-cloths and needles. Its manufactures have been promoted by the real which is found
and worked near the town. The needle manufactury has maintained itself better than any thing else under the changed political circumstances of this city: in 1818, there were 21 establishments. Aix-la-Chapelle are said by the Germans to be equal to those of England for fineness and polish; the steel wire of which they are made is chiefly brought from Altona. Pin-making, in imitation of the English manufactories, was introduced from Upper Germany in 1815.

The Latin name of Aix-la-Chapelle, is said to be Aquisgranum; and the foundation of the first known town on this spot is most generally assigned to Severus Granius, a commandor among the Belgae, under Hadrian; he is supposed to have built a town about 83 B.C. This is found in modern times undoubtedly that it was known to the Romans. Though the place had probably been at least the occasional residence of the Frank kings before the time of Charlemagne, the political importance of the city certainly does not date earlier than his time. Charlemagne is said to have resided there regularly after 768, whenever he was not engaged in war. He built a palace, a town-house, a part of the present cathedral, and fitted up several baths. In the market-place a basin and a gilded bronze statue of the great emperor, who did so much to beautify this place of his favourite residence. The fountain has a bronze basin twenty-four feet in circumference. In 882 the Normans ravaged the city. From 1794 to 1813 France ruled it, during which time it was the capital of the department of the Roer.

Though reduced in rank from an imperial city, once the first in the empire, Aix-la-Chapelle still maintains some importance, and attracts many visitors to its mineral waters, which have long been celebrated. The provisions of the Catalan, signifying chapel or church, has reference, it is supposed, to the cathedral which Charlemagne commenced in 773. The hot springs have a temperature of about 143° Fahrenheit, and contain a large portion of sulphur; eight bathing-houses are provided for the accommodation of strangers. That called the Emperor's spring is the strongest impregnated with sulphur, and most used by invalids. These waters, like others of the same kind, are both used for bathing in, and drunk by invalids. (See Monheim and Reumond, Analyse des Eaux Sulphureuses d'Aix-la-Chapelle, 1810.)

About 500 paces E. of Aix-la-Chapelle, on the slope of a steep hill, is the little town of Burtscheid, with near 5000 inhabitants. This has both hot and cold springs without any sulphur in them. The two hot springs have respectively a temperature of 138° and 129° of Fahrenheit's scale. The higher springs send forth such a copious stream of water, that they form a considerable brook called the Warm Brook, which flows between a ridge of hills and Austria. The river Roer is a tributary to the Roer; the Roer flows into the Maas. In the neighbourhood, on an eminence, stand the ruins of the old castle of Frankenberg. This town manufactures and polishes needles, and also has fabrics of woollen cloth. See Louis XIV. [See Cannabich's Geographie. Ersch. and Gruber. &c.]

Treaty of, 1668. A treaty was concluded at Aix-la-Chapelle between France and Spain, on the 2nd of May, 1668, by which an end was put to a war between those powers, arising out of the following circumstances:—On the death of Philip IV. of Spain, in 1655, Louis XIV. thought proper to make a claim to certain possessions of Spain, comprising the Spanish Netherlands (now Belgium), the province of Flanders, which was ruled by the right of his wife Maria Theresa, notwithstanding her formal renunciation of all claim to those provinces on her marriage. To enforce his demand, he declared war in 1667, and by the spring of 1668 the whole of France Comité and much of the south and west of Belgium were in his power.

The preservation of the Spanish Netherlands was considered by Holland essential to her security as a barrier against France; and by her influence an alliance with England it became an object for France to induce the Spanish court to listen to terms of accommodation, rather than to provoke further aggression on the part of France. The two powers were soon brought to acquiesce, and Aix-la-Chapelle was the place of meeting; it is now inhabited. It is agreed to be restored to Spain the whole of Franco Comité, on condition of being allowed to retain her conquests in the Netherlands. A portion of these states, including the towns of Lille, Armentières, and Bergues, has ever since formed part of France; the other provinces were restored to Spain by the treaty of Nimègue in 1678, when Franche Comité was given to France, in whose possession it still remains.

The Treaty of 1748. A congress was opened at Aix-la-Chapelle in March, 1748, between France, England, Holland, Austria, Spain, Sardinia, and Modena, in order to adjust the political interests of those powers, which had hitherto been out of the question, and to form a branch of the house of Austria, by the death of Charles V. in 1740. Five princes had started forth to dispute the succession with Maria Theresa, the daughter of the last emperor. France sided with the elector of Bavaria, the chief claimant, and supported him at the risk of the war. In the course of the war, the Elector of Bavaria seized upon Upper Austria and Bohemia, and was crowned emperor in 1742, while, in the mean time, Maria Theresa gained possession of Bavaria, and soon after recovered Bohemia. The king of Prussia occupied Silesia, and compelled the queen formally to renounce all right to it. France fought with little success in Europe, but she gained the celebrated battle of Dettingen, and in America took Louisburg and Cape Santiago. In India, she lost Madras which the French took. France had great success in the north, but was beaten out of Italy. All parties at length wished for peace, and each sent a plenipotentiary to Aix-la-Chapelle to treat on the terms. Several of them found impracticable to accord so many divided interests. France, England, and Holland agreed to sign a separate treaty on the 18th October, and to gain subsequently the assent of the other powers; all of whom, except Spain, came successively into the terms of the treaty. The terms of that treaty provided the satisfaction both in France and England, and the general system of the last stipulation gave rise to the seven years war, which began in 1755.

Congress of 1818.—The occupation of France by foreign troops had continued nearly three years, when the submission of the French to the new political arrangements seemed to warrant the allied sovereigns in delivering the nation from its burden before the expiration of the term of five years, originally provided by the treaty of 9th November, 1813. The emperors of Russia, England, Prussia, Austria, and France agreed to convene a congress at Aix-la-Chapelle in September 1818, and the plenipotentiaries of Great Britain and France were sent thither by their respective governments. The conference was opened in September, and a treaty was signed on the 9th of October, by which it was stipulated that the French troops should evacuate France on or before the 30th November following.

In pursuance of this arrangement the cantonnements in France broke up on the 17th November, and the territory was free before the end of the month. It was settled by the same treaty (Art. 4), that the sums remaining due by France to the allied powers, amounted to 262 millions of francs; of which 100,000,000 should be liquidated on the evacuation of the territory, and the remainder paid by nine monthly instalments, commencing with the 4th January, 1819. AJACCIO, the chief town of the island of Corsica, on the western coast of Corsica, on the southern side of the gulf of Ajaccio, is surrounded by high mountains, which shelter it from the north winds and easterly winds. The port is spacious and commodious. The town consists of two broad streets intersecting each other at right angles, and other inferior streets and lanes which are very narrow and dirty. It was burnt by the English here the 15th of August, 1769. The register of his baptism is to be seen in the books of the parish. The house in which he was born is one of the best in the town, and forms one side of a little court branching out of the rue principale. The name of Ramolino. Ajaccio is a bishop's see, and has a cathedral. The climate of Ajaccio is extremely mild, owing to the situation of the place being open only to the west and south; there is no winter deserving the name, and the
fall of a few flakes of snow is an extremely rare occurrence. The east, the south, and the west are hence more temperate. The northern is nearly as pleasant. The three seasons are nearly rain filling for six months; and the climate is considered unhealthy from the beginning of July till the end of September. A fine and fertile plain called Campo di Loro extends from the Gulf of Salerno to the north. There are two ranges of high mountains, of which Monte Civita and Monte dell Oro are the highest summits. The former is 9,000, and the latter 7,000 feet high. Snow is to be seen on them even in summer. The trade of Ajaccio is in oil and wine; and it also has a famous fishery for sardines. The fishery is at Bastia and on the north coast of Africa. Ajaccio contains a college, a library of about 12,000 volumes, a botanical garden, and an agricultural society. Ajaccio is sixty miles S.W. of Bastia, 6° E. long. 41° 53' N. lat. AJAK, the name by which the almost unknown tract of the coast east of Africa is designated. It extends from near Madagascar, which is included within the limits of Zanguebar, northwards to Cape Guardafui, a distance roughly estimated at about ten degrees of the equator. But the extent of the coast of Asia cannot be accurately determined, as the name itself is very indefinite. The southern coast is sandy, barren, and low: but the northern is higher about Cape Delogna and Cape D'Or. Between these two points a very long, low bay directs towards the sea, and is backed by lofty and singular-shaped mountains (Said). It is in N. lat. 10° 30', E. long. 51° 12'. Cape Guardafui, the most eastern point of Africa, is also a bold promontory with high mountains in the background; it is 9° 30' E. long. 18° 30' lat. It is described, as entering the sea on the coast of Ajax. The neighbourhood of D'Or is inhabited by a tribe of Senoufris. (See Salt's Abyssinia.) Achi was the name of two rivers in the Persians, and comprehends not only the modern Ajan, but the coast of Zanguebar as far as Quilao; provided this place be the Rhapta of the Perusids. Rhapta is the most southern point described on this coast by the author of the Perusids, but Podany mentions the promontory of Praswm as lying still farther south than Rhapta. The Perusids was certainly not written later than the middle of the second century, and at this period we find the Arabs carrying on a brisk trade with the natives of Azania, and furnishing them with their wares. This coast was at that time almost entirely under Arab influence: Rhapta traded with Musa near the present Mocha, and sent ivory, rhinoceros horns, tortoise shell, &c. (See Vincent's Perusids of T. 1747.) Though he describes Berenice as being in the Persian Gulf, it is the same coast of which he speaks in the 14th book of Ovid's Metamorphoses. Allison is also made to it in the xith Odyssey. The circumstances of his death are differently told by other authors: but it is certain that he had not been long here to do more than his usual part in the very common in these semi-historical tales. The Greeks honoured him with a splendid funeral, and raised a vast tumulus on the promontory of Rhematum, corresponding in position with that of Achilles, on the opposite promontory of Naxos. He left a son named Eurytos, who succeeded Telamon on the throne of Salamis. It is said that Philotheus, son of Eurytos, resigned the sovereignty to Athens, on condition that he might be admitted as a citizen. The last time that he is heard of was killed by Ajax. The Aeschyl, or descendants of Ares, were held in high reverence as demigods in Attic. One of the tribes was named Amittus, after Ajax: who, in conjunction with Telamon, and other heroes of the race, was supposed to have been the father of the battle of Salamis; and they were believed to have obeyed the call. See Herod. viii. 64, 65. AJAK. Son of Odysseus, another distinguished leader in the Trojan war, remarkable for swiftness of foot, and skill in using the bow and javelin. He fills a less important part in the Iliad than his namesake, though he is distinguished by his defence of the ships in company with Ajax, son of Telamon. His notoriety is chiefly derived from events subsequent to the close of the Iliad. At the sack of Troy he offered violence to Cassandra in the temple of Pallas. Indignant at the profanation, the goddess raised a tempest, which wrecked his vessel on its voyage home, and many others of the Greek fleet. Ajax escaped to Sicily, and there, by the advice of his tutor Eudemus, he gloriously defied the gods, and said he would escape in spite of them: whereupon Neptune clung the rock with his trident, and tumbled him into the sea, where he perished. (Od. x. 39, 40. Theoc. i. 97.) Ajuab, the son of the Phoenician Ajax, was celebrated as a poet, and is said to have been a friend of Aesop, and to have written a book of fables in Arabic, which was said to have been a fiction of Aesop's, who wished to secure it for himself. 

AJERIEN, or AJERIEN. (See Rapofozan.) 

AKAB (a.e. 1541) to strengthen the sense of the word, Akbar. Humayun, was born on the 15th of October, 1542, at Amerkote, in the great sandy desert east of the Indus; and on the death of his father, succeeded him in the government of Delhi, in the fourteenth year of his age, (Feb. 1556, 1557.) Feeling deficient on account of his youth and inexperience, he coveted the temporal dignity of khan.
baba (i.e. regent and parent, or protector) on Beiram Khan, a Turkoman, and one of the most distinguished officers of the Mogol court, who had already rendered important services to Humayun against the Afghans. The aid of an experienced military minister and military commander was of particular importance for the youthful Murad. In 1527, as the history about the beginning of his reign, was much disturbed, partly by revolts in the interior, and partly by a long continued conflict with an Afghan pretender to the throne, Mohammad Khan, the general of the Afghans, and a Hindu by birth, had taken Agra, and had now actually seated himself on the throne of Delhi, with an army of 100,000 horse around him. So doubtful were the Mogol nobles, in Akbar's army, of the possibility of subduing Humayun actually occupied the throne of Delhi, that they resolved to remove the seat of government to Kabul. This measure was, however, rejected by Beiram Khan, who insisted on an immediate attack upon Humayun. The result was, that Humayun was defeated in a decisive battle near Paniput, (Nov. 5, 1556), in consequence of which Akbar and Beiram Khan entered Delhi without opposition. The Mogol dynasty was thus re-established mainly through Beiram Khan's courage and presence of mind: but several arbitrary measures pursued by Beiram Khan excited the jealousy of Akbar, and he was superseded by a new governor from the court, and made a vassal in Malwa. Akbar sent a large army under Pir Mohammed Khan against him, before whom Beiram Khan retreated to the Panjab, and afterwards into the Afghan dominions, where he was at length forced to surrender, (December, 1560.) Akbar pardoned him, and assigned him a sum of 50,000 rupees (500l.) annually for his support. Beiram Khan was proceeding on a pilgrimage to Mecca, when he was murdered near Putton in Guzerat.

In 1561, Akbar accomplished, through his general Pir Mohammed Khan, the recovery of Malwa from the hands of its usurper Baz Bahadar. Soon afterwards, Shir Khan, a son of Mohammed Shah Adil, advanced from Bengal with an army, and occupied the throne of Delhi, but was defeated by a comparatively small army of the Mogols.

In 1564, Akbar had again to quell a rebellion in the interior of his empire, which had been excited in Behar and Jassan. The leading chiefs, Asif Khan, Khan Borsodi, Khan Zoman, and Sekander Khan. Shortly afterwards (1565), Akbar was obliged to proceed with an army to the Panjab, where his own brother, Mohammed Hakim Mirza, had usurped the government; and at the same time, excited in Guzerat by the sons of Mohammed Sultan Mirza. The Usbek were vanquished after a desperate conflict (June 6, 1565): Khan Zoman, and many other chiefs, suffered death; and it was not till July, 1567, that the Usbecks took possession of their own dominion. In 1568, the king of Guzerat, Mozaffir Shah, endeavoured to reside as a pensioner at Agra. In 1575, Dawud Khan, the ruler of Bengal, excited a war in that direction: he was subdued by Akbar's generals, Raja Todar Mal and Monayyin Khan, and the kingdom of Behar and Bengal became finally annexed to Delhi.

In 1579, Akbar's brother, Wazir Allah Khan, succeeded his father on the throne of Bengal, and occupied the Panjab a second time; but he was defeated by an army sent by Akbar, and reduced to submission. He died in 1583. In the same year, Akbar caused the fort of Allahabad to be built at the confluence of the Ganges and Jumna, and afterwards sent an army from Agra to Guzerat, in order to make an attempt to regain his dominion. But he was beaten in a sanguinary battle, near Ahmedabad (Jan. 29, 1584), by Mirza Khan, the son of Beiram Khan, and also failed in several successive attempts undertaken with the assistance of the Usbecks, Serwhat Khan, and the Usbecks, who still fomented disturbances in the northern provinces. In 1590, Akbar's son, Mirza Khan, invaded and conquered Sindh. Soon after, Mozaffir Shah, the king of Guzerat, was defeated and taken prisoner; and Murad Mirza went as governor to Guzerat, whence he subsequently proceeded to the Deccan.

In 1595, civil disturbances broke out in Ahmednagar, or Ahmednugur, in consequence of which the interference of Akbar was requested. His son, Murad Mirza, besieged Ahmednagar; and a negotiation, which was ultimately entered into, secured to Akbar the possession of Berar, while Ahmednagar remained in the hands of its former sovereign, Surhan Nizam Shah the second. Murad Mirza died in 1599; and some years afterwards, also, another of Akbar's sons, Daniel Mirza. Grief for the loss of the latter accelerated Akbar's own death, which occurred on the 13th of Oct. 1605.

The above sketch of the reign of Akbar is abridged from the account by Major General Sir John Barrow (vol. ii. p. 182—289,) who quotes as his authority a detailed Memoir of Akbar's Life and Government, written by his minister Abul Fazl. Notwithstanding his being almost constantly occupied with the education of his many able and dexterous foreign statesmen, he made no extraordinary movements at home, Akbar found time to cultivate the science of peace, and devoted his attention, with the utmost anxiety, to whatever appeared calculated to promote the happiness of his empire. The mildness of his character, his strict impartiality to the different classes of his subjects, the magnanimity which he showed to his enemies, and his great personal courage, are mentioned with praise even by the Jesuits who visited India during his reign; and the memory of his many amiable virtues still survives among the Hindus as well as among the Mohammedans. The policy of Akbar was to secure trade and commerce, reduced taxation, and keep a strict watch over the conduct of the officers of his government. But what still more distinguished him was his spirit of toleration, a virtue seldom possessed by Mohammedan sovereigns, which led him to preserve a spirit of toleration to the interests of all his subjects, whether they professed his own or the Hindu religion. In his negotiations to advance the prosperity of his empire, Akbar was powerfully assisted by the nobles who, besides the memoir of Akbar's reign already referred to, wrote an excellent statistical and political account of the state of the Mogol empire during his administration.

This, which is one of the most remarkable works in Oriental literature relating to India, will be noticed in a separate article. [See AYIN-I-AKBARI.]

AKENSIDE, (MARK,) a poet of considerable reputation in the last century. He was the son of a butcher at Newcastle upon Tyne, and born November 9, 1721. His parents were Presbyterians, and both lads to be brought up as minister of that persuasion. With this view they sent him, in 1739, to the University of Edinburgh: but he soon turned his attention to the study of medicine, and after remaining a few years more in Edinburgh, he finished his education, and took the degree of M.D. in 1744. It should be mentioned to his honour, that having been assisted, while he was destined for the ministry, from several funds set apart by the English dissenters for the education of physicians, he had been thus bestowed upon him. His principal poetical work, the only one by which he is now much known, the Pleasures of Imagination, appeared in 1744. It excited considerable attention, and on the whole was received with great applause. The first place in which he settled, after his return to England, was Northampton; but he found no encouragement to remain there, and soon removed to Hampstead, and thence finally to London. Here he acquired several professional honors, but he never obtained any large share of practice. He received the degree of M.D. by royal mandate, from the University of Cambridge, and thus became qualified to be a fellow of the College of Physicians: he was also elected one of the physicians of St. Thomas's Hospital. He died May 18, 1765. The work in question is a treatise On Dysentery, 1764: he also contributed several papers to the Philosophical Transactions, and to the Medical Transactions, published by the College of Physicians.

The 'Pleasures of Imagination' is written in blank verse, and with much power of very elegant music, and a splendid display of language. The subject and design of it cannot be more briefly given than in the author's language: it is to give a view of the various pleasures founded on the exercise of the imaginative faculties, or imagination, 'so that, without a single image of the object, all the agreeable appearances of nature, and all the various attenuates we meet with, either in poetry, painting, music, or any of the elegant arts, might be deducible from one or other of those principles in the constitution of the human mind, which are here established and explained.' As a philosophical work, the reader is not likely to derive much benefit from it; but its poetical merits are considerable. Dr. Akenside pro
posed entirely to rewrite the poem; but death interrupted him when he had only completed the first and second books, with the third and fourth. Of both the original and the amended poem are contained in the quarto edition of Akenside's Poems, 1772, published by his friend Mr. Dyson. For a fuller account of it, the reader may consult an Essay by Mrs. Barbauld, prefixed to the duodecimo edition of 1795, in which she gives an account of the poet's life and character, classical, and correct, not marked with strong traits of originality, nor ardent, nor exuberant.

Of his other poetical works, the principal are the Hymn to the Naiads, and two books of Odes. Many of these are written in the elegiac, which took a great interest, and are distinguished by zeal in the cause of liberty. In consequence, he was accused of republicanism, a charge which has often been employed as a topic of abuse, and that considerable success. Akenside was well read in the literature and especially in the philosophy of Greece; and he has employed images, drawn from this source, with an unsurprising, and rather a pedestrian hand. [Kippis's Biog. Brit. Barbauld's Essay.]

A K E R B L A D, (JOHN DAVID,) a late Swedish scholar, who distinguished himself by his researches in Runie, Pho- nician, Coptic, and Hieroglyphic literature. He enjoyed in early life an opportunity of travelling over several coun- tries in the East in consequence of being appointed Secretary to the Swedish embassy at Constantinople. In the course of this appointment, he made a journey to Jerusalem, in 1792. In 1797 he visited the Troad. Some years after he was ap- pointed Chargé d'Affaires to the King of Sweden in France. He spent his last years in Rome, where he was supported by the bounty of the late Duchess of Devonshire, and other ad- mirers of his talents; he died in that city at an early age, on the 8th of February, 1819. The following are the titles of some of his publications: Lettre à M. Silvestre de Sacy sur l’Ecriture curieuse Copte, published in the Magazin Éclectique for 1801. Inscriptiones Phoenicicae Oenoniciana, nova Interpretatio, Paris, 1802; thirty-one pages, octavo. Lettre sur l’Inscription Egyptienne de Rosetta, adressée à M. Silvestre de Sacy, Paris, 1802; twenty pages, octavo. Notices sur Deux Inscriptions en Caractères Runic trouvées à Venise, et sur les Varanges; avec les Remarques de M. d’Anse de Villepion, Paris, 1804; fifty-five pages, octavo. Inscriptione Graeca suprema lamina di Pioombo tro- vato in uno Segolco nelle vicinanze d’Atene, quarto, Roma, 1813. He was preparing a new and enlarged edition of this work at the time of his death. Lettre sur une Inscription Phénicienne trouvée à Athènes, Rome, 1817; twenty-three pages, quarto. M. Akerman is said to have been able to speak reading, writing and translating various Eastern and European languages. He was a corresponding member of the French National Institute, and a member of several other learned societies.

A K E R M A N N, A C K E R M A N N, or A K E R M A N N, a fortified town in the Russian province of Bessarabia, near the outlet of the Dniester into the Black Sea: 46° 12′ N. lat., and about 30° 22′ E. long.
The town stands on a point of land which projects into the Dniester, is divided from that river by a deep ditch, and in the parts bounding on the gulf by a thick wall. The town and port, which is a good one, are commanded by a castle on an eminence. The inhabi- tants, probably exceeding 13,000 in number, chiefly con- sist of Greeks, Armenians, and Jews, who carry on some trade. Fish, which is caught in abundance in the gulf of the Dniester, and salt from the salt lakes of the district of Akerman, form the principal articles of commerce. A short distance north, a fortress was established here. Akerman con- tains a handsome Armenian church with some monastic Greek churches. The streets are dirty and the town ill- built.

Treaty of, is the convention concluded in September, 1828, between Russia and Turkey. By this treaty, the terms of which may be considered as having been dic- tated by Russia, Turkey agreed to confirm in all its parts the treaty of Bucharest, (concluded in 1812,) to permit the two principalities of Wallachia and Moldavia to be governed by national constitutions, be entitled by the dextrors, to restore the former privileges of the Servians, and finally, to pay the claims of Russia on account of losses incurred by the Bar- bary corsairs, and to allow that power the liberty of navigation and commerce in all the states of the Sublime Porte, and especially free passage by the canal of Constantinople,

By these conditions the important provinces of Moldavia, Wallachia, and Servia, may be regarded as having been re- turned, in full, but a nominal dependence on the Porte, and made over to the protection, if not to the sovereignty, of Russia.

A L A B A M A, one of the southern states of the North American Union, bounded on the north by Tennessee, on the east by Georgia, the Atlantic Ocean, Florida, and the Gulf of Mexico, and on the west by the state of Mississippi. It derives its name from one of the rivers called Alabama. The sea-coast of Alabama is very limited in comparison with the extent of the state: it commences on the Gulf of Mexico, a point about midway between the mouths of the Pascagoula and Mobile rivers, and running eastward terminates at the outlet of the Perdido river. The real coast-line, not including the bay of Mobile, is not above 500 miles in length. The thirty-fifth parallel of latitude forms the northern boundary, and American authorities assign 30° 10′ as the southern limit. It lies between the meridians of 85° and 88° 30′ W. of Greenwich. The area is roughly estimated at 52,000 square miles. Its mean length, from north to south, is 396 miles; breadth, from east to west, 194 miles. Alabama originally belonged to the State of Georgia. In 1798, the country, including the present states of Mississippi and Alabama, was formed into a territ- ory; and the part of Florida which lay between the Perdido river and the mouth of the Tombigbee, in 1811, was united to the territory of Alabama, and annexed to this territory, immigration into it immediately commenced. During the years 1813 and 1814 it was harassed by the attacks of the Indians, who were driven from Georgia. The western part of the state, the west portion of the territory became the 'state of Missis- sippi,' and the east the 'territory of Alabama,'—which, by an act of Congress, March 3, 1819, was admitted into the Union as a separate State. Since that time the population has rapidly increased, as is shown by the following state- ment:

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1810</td>
<td>less than 10,000</td>
</tr>
<tr>
<td>1820</td>
<td>29,683</td>
</tr>
<tr>
<td>1830</td>
<td>77,000</td>
</tr>
<tr>
<td>1840</td>
<td>127,901, including 41,927 slaves</td>
</tr>
<tr>
<td>1850</td>
<td>244,641</td>
</tr>
<tr>
<td>1860</td>
<td>308,997</td>
</tr>
<tr>
<td>1870</td>
<td>117,294</td>
</tr>
</tbody>
</table>

3372 free blacks.

Previous to the census of 1830, when the rate of appor- tionment was 40,000, (in which number three-fifths of the blacks are counted), Alabama had three representatives in Congress: under the new census, and new rate of appor- tionment (47,700,) she is entitled to five; the representative of Alabama was recorded by the return and the two senators in Congress, the number to which each state is entitled.

Rivers.—The principal rivers of this State are the Ala- bama, Tombigbee or Tombeckbee, Mobile, Black Warrior, Coosa, Tallapoosa, Tennessee, Chattahoochee, Perdido, Ca- dina, and the Tombigbee. The principal rivers of Alabama, and of the Chattahoochee, which forms part of its eastern boundary, is from north to south. We find, accordingly, after leaving the sandy alluvium of the Gulf of Mexico, that the ground rises gradually into the interior as far as 33° 5′ N. lat. where it begins to be hilly. The greatest elevation lies still further north, and is formed by the termination of the Appalachian range, which makes in the northern part of the state a circular sweep from east to west, bending somewhat to south. We are not able to state with any precision the elevation of the highest points of these mountains above the level of the sea; some authorities giving 3000 feet, which is pro- bably too much, and others, only 1600. The direction in which the high spur of this range continues westward is the sep- arating line between the basin of the Tennessee and the head waters of the Tombbeckbee is, perhaps, not yet accu- rately laid down on the maps. Alabama then, as it ap- pears to consist of two mountainous regions, one with respect to its water system: the northern comprises part of the basin of the Tennessee River, (see TENNESEYS,) and contains a large proportion of very fertile soil. This river makes a great bend between the two points which it is inter- cepted by the mountain. The eastern, which is the chief river of the state that is called the Mobile river in the lowest part of its course, where it passes the town of Mobile, which is on the west bank of the river, and enters the spacious bay of Mo- bile. Mobile bay is about thirty miles long, and varies from three to eighteen miles in breadth: the main entrance,
which is between Dauphin Island and the western cape of Mobile Point, has sixteen feet water. This bay receives through its channel the Tenassee River, a drain of 37,100 square miles. The Mobile is formed by the union of the Tombecbee and the Alabama, which meet about thirty miles, measured in a straight line, nearly due north of Mobile, the mouth of the Tombecbee lies on the western, that of the Alabama, on the eastern, the Tuscolaosa, or Black Warrior. The Tombecbee rises in the N.E. angle of the state, in the country of the Chickasaws, (34° 40' N. lat.), and after a southern course of 100 miles, is joined by the Alabama at a place five miles below Columbus in the state of Mississippi, where it is a navigable river. Steam-boats ascend the Tombecbee as far as Columbus, and sometimes farther. It is joined by the Tuscolaosa in 35° 9' N. lat. The Tuscolaosa rises in the N.W. corner of the state, (34° 50' N. lat.) and drains a basin of nearly 800 miles square, but just within the limits of Georgia, and within ten miles of the channel of the Tennessee river at the great bend in Decatur county, Tennessee. It pursues a general course S.W. for 150 miles, passing Tuscaloosa, the capital, this junction with the Tombecbee. There is steam navigation as far as Tuscaloosa. The united stream then pursues a winding course, but in a general direction, about W. of S., for ninety miles, when it is joined by the Alabama, (31° 9' N. lat.) The Alabama, is the larger of the two branches of the Tombecbee, in the north part of Georgia, (35° 05' N. lat.) and enters Alabama near Fort Armstrong; from which point its current, after making several deviations, unites with the Tallapoosa at a point about W. by S. from Fort Armstrong; the current in this part of the river is perfectly regular, and has a general course, something like that of the Coosa, unites with it (at the village of Coosawda 32° 28' N. lat.) after having made a sudden turn to the west about twenty-five miles long. Fifty miles S.W. from Coosawda the Alabama enters the Tombecbee, and after a S.S.W. and very tortuous course of 200 miles, joins the Tombecbee about thirty miles above Mobile, as before stated. The direct distance between the junctions of the two is about 90 miles; on which, it is navigable for about 100 miles. The Alabama is navigable for steam-boats most of the year to the falls of the Coosa, about 400 miles from its mouth. Here the rapids commence, and continue at intervals for sixty miles: they are composed of four banks, the beds of the river are so high that the river is deep, smooth, and perfectly navigable for 200 miles, nearly as far as its source in the valley of the Tennessee River, — a navigable branch of which almost communicates with it. The Alabama, like most of the large American rivers, is entirely wooded over by various shrubs, and trees. It is the largest of the streams in the state of Alabama, and receives the principal tributaries and runs through high water areas, as in some parts of the state, there are some large lakes, which are wide-spreading plains, or gently-waving land, (resting on a soft limestone rock, abounding in shells,) clothed with grass, herbage, and flowers, and exhibiting, in the month of May, the most enchanting scenery. (Encyclopaedia Americana.) There is good water power in the state of Alabama, several quantities, and are some arrangements in clumps and clumps and moister portions, dividing them into open spaces of several hundred acres. The soil is of variable depth, and rests on a uniform bed of limestone. In some places the rock juts out on the face, where it is a quarter mile or five feet above the surface of water, and what there is of it is very bad; good water can be obtained by boring to the depth of three or four hundred feet, and in many cases this water rises to the surface.

The long-moss region commences below 33° lat. The moss hangs in festoons from the trees, giving to the forests the most dark and gloomy aspect. It is much used for making mattresses. Cotton is the staple product, and is raised in great quantities; the land produces from 400 to 1800 pounds of seed cotton to the acre. The annual crop of the state is estimated at 200,000 bales, and is increasing every year; the greater part of it is carried to Mobile—that from the Tennessee valley only being taken from New Orleans. The land is tilled more extensively, the people are not so poor as before, and the land is purchased at a low rate, and is leased at from 100 to 150 dollars a year. A great deal of Indian corn is grown for domestic consumption, and considerable quantities of oats, but not much wheat. The sugar-cane is cultivated to some extent. There is a constant tide of immigration to this state, particularly to the southern districts, from Virginia, North and South Carolina, and Georgia. The immigrants are generally planters, bringing with them their slaves to cultivate the land. The native Indians are reduced to twenty dollars an acre, but is rapidly rising in value—public land may be entered at one dollar and twenty-five cents per acre. Not more than one-twentieth of the state is yet in cultivation.

Iron ore is found in several places, and fossil coal abounds.
on the Black Warrior river; marble is found on the Ca- 

hawa. Gold also has been found, but not in sufficient 

quantities to render the business profitable.

Climate.—The mean temperature of the state is about 

65° F., or, perhaps, less. Although the summer continues 

longer, yet the heat is very little greater than in the mid- 

western part of the United States. The thermometer seldom exceeds 90°. June is the hottest month in the year. The fig and peach arrive at great perfection below 32° Int., and the 

climatic and soil are supposed to be well-adapted to the grape, 

but neither is grown. The frost begins between the 

middle of January and first of March, according to the elu- 

eration of the place. Snow neither falls deep nor lies long; 

a thin sheet of ice sometimes covers the stagnant waters 

at the coldest period; the rivers are never frozen over. The 

climatic and soil prevail in the interior of the state, from 

the rivers. In the elevated country it is delightful, the 

heat of summer being tempered by the breezes from the 

gulf of Mexico. The prevailing diseases in low situations 

are the murrain, and every ten years fever. Mobile has been several 

times ravaged by the yellow fever, but it has not been severe 
of late years.

Indians.—The Cherokee occupy the north-eastern corner 

of the state, and extend into Georgia and Tennessee; the 

Creek and Alabama are in part of Georgia and the Chickasaw and Choctaws the west, extending into Mississippi. The 

whole number within the state in 1831 was estimated at 

19,000, but they are fast emigrating west of the Mississippi, 

where a large tract of country has been ceded to them by the United States. The Indians living in the Cherokee 

state, most of whom reside within the limits of Georgia, are 

the most civilized. They have a written and printed language, 

the alphabet of which was invented by a native Chippewa; 

it consists of eighty-five characters, and may be called a 

syllabary. The Indians are said that all their children 

learn to read in a day; and not more than two or three 

days are ordinarily requisite; he has only to repeat successively 

the names of the several letters, so that when he has learned 

his alphabet he can read his language. There are remains of 

monuments of the old inhabitants of the state, respecting which the present 

Indians have no tradition.

Counties and Towns.—In 1820 the state was divided into 

twenty-four counties; in 1828, thirty-six; and in 1831, ten 

new counties were created in the Creek, and one in the Chockta 

country. The chief towns are Tuscaloosa, the present capital, 

situated at the falls and head of steam-boat navigation 

on the Black Warrior river; 31° 12' N. lat. 87° 42' W. long. 

235 miles N. of Mobile; 140 miles, and 100 by water, 160 S.W. 

of Clarksboro, 90 miles, and 150 by water, 130 miles, and 100 by 

water of Washington, N. of New Orleans. Tuscaloosa takes its name from the Chockta 

appellation of the Black Warrior river. The situation of 

the town is healthy and pleasant, being on an elevated plain of 

several miles in extent. The university of Alabama is about 

one mile west of the town. Coal is found in abundance on 

the bank of the river, and in the vicinity abundance of materials for building, 

particularly stone, and pine timber. Population about 

1800, Mobile, the principal part, is situated at the mouth 

of Mobile river into the bay of the same name; 30° 40' N. lat. 

87° 21' W. long. 50 miles by land from Pensacola, 1831, 

from Washington, and 160 E. from New Orleans. In 1813 it 

came into the possession of the United States, and then 

contained about 300 inhabitants; in 1822, 2000; and in 

1830, 3191. The back country is dependent on Mobile for 

a supply of all the necessaries of life; the produce exportation, of which upwards of 100,000 bales are shipped 

annually to Europe and the north part of the United States. Steam-boats and schooners run regularly to New Orleans, the 

lakes, and Gulf of Mexico. Huntsville; in the north 

part of the state, is the next town in importance; it has considerable trade in cotton with New Orleans, and a 

communication with the Tennessee river by a canal ten miles in 

length. Population in 1820, 1000; Montgomery, the capital 

and county town, the 12th state, was the former capital of the state.

Education.—By its constitution, adopted in July, 1819, 

the legislative power is vested in two branches, a Senate and 

House of Representatives, which together are styled the 

General Assembly of the State of Alabama. The repre- 

sentatives are elected annually, and are apportioned among 

the different counties in proportion to the white population; 

the whole number cannot exceed 100, nor fall short of 60. 

The senators are elected for three years, and one-third of 

them are chosen every year; their number cannot be more 

than one-third, nor less than one-fourth of the number of 

representatives. At present the Senate consists of twenty- 

two, the House of Representatives of seventy-two members. 

The salaries of the members are fixed by the General As- 

sembly; and the pardoning power in cases of treason, 

the consent of the Senate is necessary. In case of his 

death, absence, or the president of the Senate acts as 

governor; the salary is $5000. The qualifications required 

for members of the General Assembly are—being at least 

twenty-one years of age; a resident of the one-year's district residence; a senator must be twenty- 

seven years of age; a governor must be thirty years old, 

and a member must have resided four years in the state. 

A temporary government may be constituted for five 

years, if the judges and three months of district residence are required. Blacks in 

all cases are excluded. Two-thirds of the General As-

semble may propose amendments to the Constitution, which, if ratified by the people at the next election, and by 
two-thirds of the subsequent legislature, becomes the law.

Jury.—The state is divided into seven circuits, to 

which an eighth has been lately added, in each of which there is a circuit judge; and, until the session of 1831, the 

Supreme Court was formed by a union of these seven 

circuit courts. In 1830, a separate Supreme Court was 

established, consisting of three judges, which meet at Tuscaloosa twice a year, and remain in 

session from six to eight weeks each time. The judges are 

elected by the joint vote of both houses of the General As- 

sembly, and the judges of the General Assembly—the judges must be in good standing. 

Salary of judges of Supreme Court is $1750 dollars; of Circuit 

Court, 1500 dollars.

There are also seven inferior courts as the general assembly 

may, from time to time, direct and establish. They are 

the county court, consisting of the sheriff, clerk, 

and two justices; the mayor and council of the city of 

Montgomery; and the justices of the peace. 

The county court, though inferior, but little from 

these other courts of the Union. The punishments are 

fine, imprisonment in the county jail, standing in the 

pillory, branding, whipping, and death by hanging. The 

crimes punishable with death are murder, treason, rape, 

dueling, horse-stealing, horse-thieves, horse-trading, 

and theft, larceny, forgery. The penitentiary system has not 

yet been introduced into this state. The consequence 

of making so many offences capital is that many go un- 

punished, or are pardoned by the executive. Very severe 

customary in the state, and the law forces the amount, with all interest thereon.

Education.—The constitution declares that schools and 

the means of education shall for ever be encouraged in this 

state. By an act of the Congress of the United States, in 

1819, one hundred and twenty acres of land on the public 

lands was granted to the inhabitants of each township in the state for the use of schools; and seventy-two sections, or two entire townships, for the support of a grammar school, which were vested in the legis- 

lature of the state, to be held by them for the benefit of the state. In conformity with the above grant, an institution, styled the University of the State of Alabama, was incorporated by the legislative of the state in December, 1820. In 1821, two trustees were 

elected, who were each authorized to purchase one-half of the lands of the state. The governor of the state is, ex officio, president of the board of trustees. They hold their office for three 

years.

* These land districts we believe are calculated along the road, the direct 

route being about 100 miles.
years. All the university lands were vested in those trustees to be sold at public auction; such as were not sold were to be let on rent. The funds of the university consist of the proceeds of these lands. According to a report of the president of the board of trustees, dated January 14th, 1830, 25 acres had been sold for the sum of $344,651 dollars, of which 111,712 had been vested in 6 per cent. stock; and 24,234 acres remained unsold. In the session of 1827-8, the university was located upon one mile east of Tuscaloosa, in a fine healthy situation. It opened on the 16th of April, 1831. A large number of inmates has been about ninety; price of tuition, including room, rent, fuel, &c., 40 dollars for the collegiate year (nearly ten months). Board 80 dollars for the same term.

Religion.—The Baptists in this state have 19 associations, 218 churches, 130 ministers, and 8953 communicants; the Methodists, 44 preachers, and 15,504 members; the Presbyterians, 38 churches, 27 ministers, 6 licentiates, and 1669 communicants; the Roman Catholics, 9 ministers; the Episcopalians, 2 ministers.

Bank.—1. One private stock bank at Mobile, capital 500,000 dollars. 2. A branch of the United States bank at Mobile. 3. A state bank at Tuscaloosa, capital about 880,000 dollars. Branch of the state bank at Montgomery, incorporated in 1835, capital 500,000 dollars; capital authorized to be increased by sale of state stock, bearing 5 per cent. interest, to 500,000 dollars. 4. Branch of state bank at De catur, incorporated in 1835, capital to be raised by sale of state stock 1,000,000 dollars. Branch of state bank at Mo bil. in the vicinity, the alabamian capital was raised above 2,000,000 dollars. The state is the sole proprietor of the state bank and its branches. The capital of the state is composed of the university and other public funds, and of funds to the amount of 205,000 dollars, raised by the sale of state stock, bearing 5 per cent. interest. The capital of the branch is raised, and to be raised, by the sale of state stock bearing 5 per cent. interest. [Communication from Tuscaloosa. See also Darby’s Geography of the United States.]

Trade.—Years ending 30th September.

<table>
<thead>
<tr>
<th>Year</th>
<th>1829</th>
<th>1830</th>
<th>1831</th>
</tr>
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<tbody>
<tr>
<td>Imports in American vessels</td>
<td>112,280</td>
<td>114,280</td>
<td>114,280</td>
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<tr>
<td>Foreign vessels</td>
<td>23,780</td>
<td>34,933</td>
<td>34,933</td>
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<tr>
<td>Total</td>
<td>136,060</td>
<td>149,213</td>
<td>149,213</td>
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<tr>
<td>Exports—Domestic produce</td>
<td>4,170,208</td>
<td>4,201,986</td>
<td>4,213,423</td>
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<tr>
<td>Foreign</td>
<td>11,853</td>
<td>12,639</td>
<td>12,639</td>
</tr>
<tr>
<td>Total</td>
<td>4,182,061</td>
<td>4,214,625</td>
<td>4,226,062</td>
</tr>
<tr>
<td>Shipping Exterior—American</td>
<td>21,949</td>
<td>22,577</td>
<td>22,577</td>
</tr>
<tr>
<td>Foreign</td>
<td>1,088</td>
<td>1,088</td>
<td>1,088</td>
</tr>
<tr>
<td>Total</td>
<td>23,037</td>
<td>23,665</td>
<td>23,665</td>
</tr>
<tr>
<td>Shipping Departed—American</td>
<td>21,949</td>
<td>22,577</td>
<td>22,577</td>
</tr>
<tr>
<td>Foreign</td>
<td>1,088</td>
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</table>

ALABAMA RIVER. [See Alabama.]

ALABASTER, a white stone used for ornamental purposes. The name is derived from Alabaster, a town of Egypt, where there appears to have been a manufactury of small vessels or pots, made of a stone found in the mountains near the town. These vessels were employed for containing certain kinds of perfumes, used by the ancients in their toilets, and with which it was customary to moisten the heads of the gods, as a mark of distinction, at their feasts. There are in Horace many allusions to this custom. In like manner, Mary, the sister of Lazarus, poured upon the head of our Saviour, as he sat at supper, "very precious ointment;" from an alabaster box. The name is also given to the clay among the Greeks, and alabasters among the Romans, were applied to those vessels, even when they were not made of the white stone; for although they may have imitated the original form of the vessels made of alabaster, they appear to have been of porcelain (Klyt. iv. 127), and have sometimes been made of gold. They were of a tapering shape, and without handles; and from this circumstance, Adam, in his Latin Dictionary, gives as the etymology of Alabastrum, a ovum, and lebas handle, a vessel in relation to the university, academical, and schools, will be published in one of the forthcoming members of the London Journal of Education. See also Journal of Education, vol. vi.

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and above 70,000 inhabitants. It is fertile in grain, mulberries, and olives. There is coal, and also considerable iron mines in the neighbourhood.

ALAKANANDA, a river of Hindostan, which rises in the Himalaya Mountains. This river is considered sacred by the Hindoo inhabitants: it flows from north-east to south-west, through the province of Gurwal, receiving in its course the waters of the Mooltan, the Pindan, the Mandakini, the Bheri, and the Daxi, all streams of inconsiderable size. The last-mentioned of these tributaries, which proceeds from the base of the highest ridge of the Himalaya chain, forms the remotest source of the Ganges. At Devaprayaga, the junction of the various streams from all points is equalled by none other of any of the greatest from Almorah, the capital of Kummun—the Alakananda is not more than twenty feet wide, and its actual source is concealed under an accumulation of perpetual snow. At Devaprayaga the width of the river is increased to one hundred and forty feet; during the rainy season it rises from forty-five to fifty feet above its lowest level.

The Alakananda contains a great number of fish, four or five feet long (the Ceyrurus dennerlebii), which are held in reverence by the western inhabitants; and, being daily procured by them daily, become so familiar as to take bread from the hand. *Jesuit Researches*, and MS. Documents at the India Board, quoted in Hamilton's *East India Gazetteer*.

ALAND, a small archipelago at the entrance of the Gulf of Bothnia, consisting of one small island that gives name to the whole group, and of a great number of smaller islands, such as Ekeroe, Figlooe, Vorote, Lemland, &c. Some authorities state that as many as eighty of the islands are inhabited. The word Aland is properly written Oland, and pronounced Oland, which signifies the 'Land of Rivers or Waters.'

The principal island has its northern point intersected by the parallel of 60° 15' N lat.; the meridian of 20° passes through it. It is very irregular in shape, so that it is difficult to state its dimensions accurately. The greatest length from N. to S. may be about 18 miles; the greatest breadth from E. to W. about 14. Its coasts are deeply indented, and offer several excellent ports, of which the best is Ytteri. The island is mountainous, and of calcareous structure, with some good quarries; it has also a few streams. The grains that succeed best are rye and barley, with a little wheat: the trees are pine, fir, and beech, in sufficient quantity to furnish fuel for the inhabitants. There is also pasture for cattle, of the same kind as on the continent, and for swine, which are Excellent seamen, and in a great measure employed in fishing, and catching seaweed. They are stated at 13,340, as far back as twelve years ago. Aland is divided into five parishes. On a signal given by the Ekeroe a telegraph is established. One advantage which accrues to the Reykoe from the possession of these islands, is the possession of ports which are less frozen during the winter season than others in the same latitude, owing to the strong current from the Bohmian Gulf, which tends to keep the sea open. This island is said to have once had a king of its own. In the later times of the Swedish possession, it was included in the government of Albo and Boremeel, in Sweden; it was finally ceded to Russia in 1801.

The neighbourhood of Aland is noted for being the scene of one of the greatest victories obtained by the Swedes. A.D. 1714, the first great event in the history of the Russian marine. (Dictionary: Geography.)

Alarcon, Juan Ruiz de, a Spanish dramatic writer, who lived about the middle of the seventeenth century. Though an author of great merit, and possessed of much reputation, very little is known of his life. Nicholas Antonio says, that he believes him to have been born in Mexico, of Spanish parents, and that he was both an actor and a playwright; but these circumstances are not universally equalled by any of his other works, nor even by Stilicho; and was compelled by the voice of his people to accept terms which his pride would have rejected,—to ratify a treaty with the empire of the West; and to retire from Italy with the remains of his once powerful army. (See Claudius.

After his retreat from Italy, Alaric concluded a precarious peace with Honorius, and even entered into his service, being nominated master-general of the Illryan prefecture. In this capacity, he was required to enforce the claims of the
court of Ravenna to certain provinces held by the eastern empire: but his efforts were ineffectual: and at the end of a few months, with his hands in chains, he was treacherously assassinated by the German youths who were attracted by his fame, he renewed his design of establishing himself in Italy. Claiming an extravagant reward for the services which he had performed, he plainly intimated that war would be the consequence of a refusal. The demands were refused, the head in the city was cut off. The emperor was then at Rome, and it was debated in the senate what steps were proper to be taken. The majority were for war; but by Stilicho's advice, it was determined to buy off the enemy, by a contribution of four thousand pounds weight of gold, and other presents, in the language of Cicero, 'This is not a treaty of peace, but a contract of slavery.' The minister maintained the demand to be nothing more than just, as Alaric had remained three years in Sicily for the service of Honorius. While the Visigoths were at the foot of the Alps, the cowardly and weak Honorius procured the assassination of Stilicho, the only man who could still have defended the empire. His son and all his officers were murdered along with him. Those Visigoths who were living in the pay of the empire had left their wives and children in the Roman cities: they were all massacred at the same time. All the treaties concluded by Stilicho with Alaric were annulled; and the court of Ravenna seemed to take pleasure in provoking an enemy where he was most useful. A triumphant entry into Venetia without encountering any Roman soldiers; with the rapidity of a traveller who meets with no obstruction, he advanced under the very walls of Rome, and formed the siege. An application for terms was made on the part of the Visigoths, with an arbitration on the part of Rome; they were refused. The arms they would fight desperately. Alaric returned this pithy answer: 'The closer has press, the more easily it is cut.' He demanded all the wealth of Rome. The ambassadors asked what he would leave to the inhabitants. 'The French leave at less,' said he, 'their language, and, conversely, to return on condition of receiving a heavy ransom. But Honorius, although he had taken no measures for the defence of his capital, constantly refused to ratify all the treaties by which it had been previously deprived. This was not done by nobility for noble pride; but it had disastrous consequences for it brought back Alaric. He laid siege to Rome a second time in 409. The imposing name of the Eternal City seemed to inspire the barbarian with involuntary respect. He endeavoured to save it from the consequences to which he was otherwise pledged, by erecting a new emperor in the person of Attalus, prefect of the city; but the weakness of Attalus rendered it necessary for the Visigoth conqueror to undo the work of his own hands; and Honorius was re-imposed on him, without a throne. The Visigoths and Alaric entered upon the province of Ravenna, while the conferences were still open, exhausted the patience of Alaric. The city was three times besieged; and Alaric entered at midnight on the 24th August, 410, when he gave the town up to be pillaged for six days and seven nights. The Visigoths had been accustomed by him to respect the honour of the women, and not to burn buildings dedicated to religion. After the limited period of plunder and vengeance, he hastened to withdraw his troops, and to lead them into the southern provinces of Italy. But he died in the course of a few months, after a very short illness, while besieging Cosenza in Calabria. His death produced a temporary reconciliation between the Visigoths and the emperor. His wife's brother, Ataulphus (Adolph), was made viscount of the Ostrogoths in Ravenna, while Ataulphus was a friend to peace, and wished for nothing beyond a settlement in the empire and the hand of Placidia, the sister of Honorius, who had been the captive of Ataulphus. He held both those objects; but in his disposition was assassinated by one of his equerries. Zosimus.—Claudian.—Jornandez, De Rebus Geticos.—Gibbon, ch. xxix. xxxi.

ALATAMAH, a large river of Georgia, (one of the Southern States of the North American Union,) and comprised within the limits of that State. [See Georgia.]

ALAUDA (Lark), a genus of graviorous birds, of which upwards of sixty species have been enumerated, though the papus, among which is our titlark, be excluded. Linnaeus, in his Systema Naturae, before which the French had stood on account of their longish hind claw; but their slender bill, and several other circumstances, sufficiently distinguish them.

Adhering, then, to this distinction, we characterize the larks by the hind-claw, which is like the fore-claws, somewhat longer and stronger than in the pippits and the wagtails. The bill is straight, and rather short and strong, the upper mandible being arched without any notch, and not longer than the under. The nostrils, situated at the base of the bill, are oblong, and protected by small plumes and bristles directed forwards. The feathers on the back part of the head can be raised up at the will of the bird into the form of a crest.

Various species of larks are found in all parts of the globe, and are everywhere distinguished by their vigilance and their singing. They are peculiarly birds of the fields, meadows, and moors; the parts of the country partly covered with trees, except in a few instances, such as the woodlark, have not adapted them to perch upon trees. They accordingly always build on the ground, making in general a rather slight though neat nest, and laying about five eggs, usually of a greyish white, with specks of a brown colour. They frequently rear two broods of young during the summer.

They are almost all birds of passage; for even in Britain, where some remain during the winter, the greater number flock together and migrate, either southwards or to the seacoast. During these migrations immense numbers of them are caught in nets for the table, particularly on the Continent, where small birds are more sought after for this purpose than in Britain.

We shall give particular details of the several species under LARK.

ALAVA, one of the old Basque Provinces in Spain. [See Basque.]
manifest symptoms of discontent. Philip, being a bigoted Catholic, was determined to maintain the Roman religion in all its purity throughout his dominions. He disliked the Belgians as much as his father had been well-disposed towards them; and his whole conduct was calculated rather to alienate than to gain their affection. He attempted to destroy their liberties to Cornwall, and establish thequisition, at any hazard. When one of his ministers represented to him, that if he did not abolish the inquisitorial courts, he exposed himself to the risk of losing the states, he was satisfied that he would not have more subjects than have heretics for his 'subjects.' A rebellion was the result of this ungenerous policy. When the news of the revolt reached Spain, the king summoned a council of state, and asked the opinion of his ministers as to the measures to be adopted towards the refractory provinces. The Duke of Feria objected strongly against the adoption of violent measures. The Duke of Alba, on the contrary, was for severity. Philip remained a moment perplexed between these two advisers; but soon decided in favour of the opinion that most accorded with his own.

Alba was furnished with troops and money, and invested with unlimited powers, for the purpose of crushing the liberties of the Belgians. He set sail from Spain in 1567, and landed at Genoa, where he strengthened his army with some Italian troops, and proceeded to Brabant. In the country, which, through the mild and conciliatory measures adopted by the amiable regent, Margaret of Parma, was comparatively tranquil, became full of alarm. Events proved that the fears of the people were unfounded. The Protestant rebels were invested by the Counts of Egmont and Horn to do the same. Alba summoned a council of state to his house, to consult about the best means of restoring tranquillity and represing secession. The ministers were as conciliatory as Alba seemed to be. He entered into conversation with the secretary, Cassenevelt, and put them in prison. The prince-regent, seeing herself deprived of her authority, retired to Italy, and left the government of the country in the hands of the Duke.

The Duke then proceeded to the imprisonment of D'Egmont, Alba instituted a council, composed of twelve judges, whom he named 'Judges of the Tumults;' by his victims they were called the Court of Blood. He was himself president. He summoned the Prince of Orange, and all the other nobles and citizens who had fled from the country, to appear before his tribunal, under the penalty of confiscation of their property. All the prisons were filled with victims, who were speedily condemned and executed. The principal cities were fortified and filled with soldiers; and a country, which had hitherto enjoyed the benefits of liberty, under the rule of the mildest governments of Europe, was now converted into a military camp. More than thirty thousand persons sought refuge in the neighbouring countries. All the laws were taken away; and peace and order were virtually abolished; there was no other rule but the will of the tyrant.

The Prince of Orange had collected an army in Germany, with which he advanced into Friesland, and defeated a body of Spaniards at Groningen. The news of this reverse exasperated the Duke. He hurried the trials of the Counts of Egmont and Horn to a speedy conclusion. They were condemned and beheaded; and the secretary of D'Egmont was torn alive by four horses. The Prince of Orange was desirous to give battle to the Spaniards, but the Duke avoided an engagement; and by his prudent movements, without losing a single man, he caused the patriot army to disband. Alba returned to Antwerp to carry on the fortifications of the cities and in the middle of the fortress the Duke caused his own shield of brass, to be erected. This statue represented him in full armour, and at his feet, a two-headed monster, referring allegorically to the nobility and the people. The whole was surrounded by a circle of marble, which the following inscription contained:—In honour of the Duke of Alba, for having restored the Belgians to their allegiance to the king and the church, and the country to tranquillity, peace, and justice. This insult was greater than a nation could endure. It was so revolting, that it alienated even his friends; and from that moment his dictator-style was virtually ended. His fall was hastened by the cruelty practised towards the inhabitants of Haarlem, where he caused more than two thousand persons to be executed, after having led them to expect forgiveness if they surrendered.

He now began to encounter misfortunes and disappointments on every side. His health was in a weak state; the greater part of Holland had openly revolted, and proclaimed the Prince of Orange its stadtholder; his armies ceased to be invincible; and he earnestly requested to be recalled. In December 1567, the Emperor Charles had, in general parliaments, and had a council held, in which he had rendered decision, under which he had delivered into the hands of the executioners eighteen thousand victims, and kindled a war which raged for thirty-seven years, and cost Spain the blood of her best provinces, and the death of the richest provinces. The first act of his successor's seat of power was to demolish his statue: so that nothing remained in Flanders after his departure but the memory of his cruelty.

On his arrival in Spain, far from being well received at court, he was banished to the isle of Mallorca; but eighteen years after his arrest, Henry II. of Portugal died, leaving no rightful heir. Philip II. of Spain put in a claim, which he enforced by the sword. Alba was now summoned from his retirement, and at the head of twelve thousand men relieved the city of Elvas. In two weeks he placed Philip in possession of the crown of Portugal. Three years after, 1583, he died at Lisbon at the advanced age of seventy-four.

The Duke of Alba was, undoubtedly, the ablest general of his age. He was principally distinguished for his skill in raising, training, and leading armies; and in the enforcement of the strictest discipline in his army. He was obtaining by patient strategy those advantages which would have been thrown away, or dearly acquired by a precipitate engagement with his enemies. As he always did, an engagement with the Dutch troops, the Archibishop urged him to fight. The object of a general answered the Duke, 'is not to fight, but to conquer; he fights enough who obtains the victory. During a career of so many years he has never been vanquished in battle. We are now beset by our enemies, and theIBUTES, of such a character as Alba, surrounded as he was by all the evil circumstances which belong to ineradicability and despotism, were only instruments to render the host more warlike and tyrant. More dreaded than the conqueror was the conqueror.' The Duke was the most amiable, conciliatory, and benevolent statesman. [See Mariana, Hist. de España. Bentévoglio, Guerr. di Flandres. Do Campo, Hist. de Portugal.]

ALBA LONGA, ALBANO, ALBANO MOUNT AND LAKE.

The old fabulous traditions of ancient Rome speak of the city of Alba as being founded by Ascanius, son of Aeneas, about 1000 years before the foundation of Rome itself. They also give a succession of kings of Alba, from Ascanius down to Numitor, grandfather of Romulus. But this story is a mere fable. It is certain that Alba was a considerable city anterior to Rome, and that the centre of a confederation, distinct from that of the Latins, but combined with it. [See Niebuhr's History of Rome.]

The original inhabitants of Alba were the Latins. They occupied the lake and the mountain, on the south-eastern bank of the Tiber, where now stands the convent of Palazzolo. This is the opinion of most antiquarians, among others of Venuti and Father Echandini. Sir William Gell, we understand, is of a different opinion; but his work on the Topography of the Campagna has not been published. On the mountain above, now called Monte Cavo, was the citadel where stands at present the village of Rocca di Papa. Alba was engaged in a war with Tullius Hostilius, king of Rome, in these times; but the Duke of Alba and Curanilia was restored to Owing, however, to some subsequent treachery of the Albans, the Roman king razed Alba to the ground, and removed its inhabitants to Rome, where they settled on the slopes of the Monte Curano. The chief of Lyce's name was Tatius; but Niebuhr has strong doubts about the time as well as the manner in which Alba was destroyed; and it appears that the territory of Alba was taken possession of in the first place by the Latins and confederates, and then by the Romans. While the number of the inhabitants of Alba, after its fall, came to settle at Rome; the afterwards celebrated family of gens of the Julii were among those who referred their origin to Alba. Of old Alba no vestiges whatever remain. A second town was built afterwards, which was the site of the first emperors; it originated probably with the eastem promontory, or camp, which was stationed in that neighbourhood. This second Alba is mentioned by Suetonius in the Life of Nero; it was destroyed after the fall of the empire, in the wars between the Romans and the people of Tuscon.
lum. Of this Alba some subterraneous remains are still to be seen.

The town Urban VIII., in the seventeenth century, the Ro-
noman nobility began again to frequent the neighbourhood of
the Alban Lake, and the present town of Albano gradually arose.
It stands at a short distance from the lake, about fifteen
miles from Rome, on the high-road to Naples, within
the territory of the bishop of Albano, and part of the
old pleasure-grounds of Pompey. It consists chiefly of one
long street, with several palaces of the Roman nobles; it is a
bishop's see, and contains more than 4,000 inhabitants.
Above the town are the fine villa and gardens of Prince
Barberini, and in the Lake of Albano, whose shores are
broad, being raised high above the unhealthy plains of
the Campagna. The wines of Albano maintain their ancient
reputation. On the banks of the Alban Lake is Castel Gau-
dolfo, the country residence of the Popes, and farther on is
the pretty town of Madonnina, at a short distance that on
the latter is the abbey of Grotta Ferrata, inhabited by Greek
monks of the order of St. Basilius, and supposed to stand
on the ruins of Cicero's Tusculan villa: fine avenues of
shady trees lead to these several places. The Alban Lake
is seven miles in circumference, and has a depth of 9 feet
above the level of the sea; the shore is high, lined with
trees, and covered with gardens and orchards: the water
is clear, and its depth very great; some accounts say 1,000
feet deep, but the best judge is the bottom: the writings of
the lake which threatened the plain below, was
constructed by the Romans in the year 298 after the foun-
dation of the city; and it remains unimpaired to this day,
—a striking monument of the genius and perseverance of that
excellent race of statesmen and statesmen, and the state of
space of more than a mile, mostly through the solid rock:
the tunnel is six feet high and about four feet in breath.
It was completed in less than one year. The water of this
streamy flows into the Tiber below Rome. The Alban
Mountains, however, and beyond them, to the sur-
rounding hills, commanding the whole Campagna, or
Latium, and forming the most striking feature of the hori-
zon of Rome. 'The road which we took,' says Mr. Eustace,
in his Tour, 'leads along the Alban Lake, and climbs up
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zon of Rome. 'The road which we took,' says Mr. Eustace,
apprehension by ancient navigators. The hills of Zagon running S.E. near the frontier of Albania and Macedo-
nia, have flat summits spreading into extensive plains. A
solitary chain of lofty mountains, once known by the name
of Scutare, and now called Ginnestin, and Nisava, Gora,
incises the basin of the Moroka and the Drin; and a
continuation of it runs southward, under the denominations
of Tzamarka and Mozaro, uniting with the ancient Pini-
thus; but Pindus itself cannot be considered as within the
limits of the island. The character of this range is hardly
determined. It is doubtful if it forms a continuous chain,
or an elevated ridge, crowned at different distances by lofty
hills. The mountains of Khinara and Tzamarka are not less
imposing from their level.

The rivers of Albania are not of great size or import-
ance. They flow from the eastern frontier into the
Adriatic or the Mediterranean. The Moroka and Paskola
unite their streams, and pass through the lake of Skutar
(Skókos), or Zenta, into the Adriatic, assuming between the
lake and the sea the name of Bayana. The general direc-
tion of the Moroka is S.; of the Paskola S.W.; and the
distance from the source of the Moroka to the mouth of
the Bayana, following the winding of the stream, and includ-
ing the length of the lake Sevasti, is more than 100 miles.
Two streams, one, the black Drin, flowing in a northerly
direction, or from L. Okhrida (ancient Lychnitis); the
other, the white Drin, proceeding from the mountains on the
eastward of Lake Sevasti, and running southward into the
Adriatic. The windings of this stream, mea-
sured from either source, render its course equal to about
150 or 160 miles, and make it the chief of the Albanian
rivers. Farther to the south, we meet with the Sko-a (anci-
ent Tirnavus), a large and fertile valley, that of Vaina (Al-
apsis), and the Boino-a or Voutsaas, in whose modern
appellation we may trace the ancient one of Actus or Eas.
This last-mentioned stream is about 130 miles long: but
these measurements, founded on the most recent maps, must,
in the present state of our knowledge, be received with
cautions. The river Calama, the ancient Thyamis, falls
into the sea opposite Corfu; and farther to the south we
have the ancient Acheron, and the little river of Atri, which
falls into the gulf of Atri on the left side of the
earlier names of the Sevasti or Zenta; of Okhrida, the
ancient L. of Lychnitis, of Joannina, which has been
confounded with the ancient Acheron; and of Butrinto.

If these, the second, according to the map published by
the Society for the Diffusion of Useful Knowledge, is the
largest: that of Joannina is given by Holburne as 10 or
12 miles long, and 3 broad.

The climate of Albania in the lower regions is, perhaps,
about as warm as that of Italy, but doughty, and sudden
and violent storms, render it less healthy. In the
province which lies south of lat. 40°, and which corresponds
to the ancient Epirus, the climate is colder than in Greece.
The spring does not set in before the middle of March; in July
and August, the oppressive heat often drains the streams
and lakes, and parches the plants before the time of vintage;
and the rains of December are succeed-
ed by frosts in January, which, however, seldom last long.
The country is in general healthy. Tertians indeed
prevail in Joannina in spring and autumn, owing, probably,
partly to the vicinity of so large a sheet of stagnant water as
the lake on which the town stands.

Of timber trees may be mentioned many species of oak,
among them the quercus virens, with its broad indented
leaves, and its beautiful-crowned branches, of good size
and quality; and the Vallonca oak (quercus rotundifolia),
the branches of which are deeply set in a thick scale cu-
used in dyeing, and supply an article of export from many
parts of Turkey; the plane, the cypresses, the jad, the
cedar, the morau, and, as is said, the fir. The latter may be
several centuries old. They are the last to appear in the
mountains of Pindus, together with the chestnut; the
three which precede them are mingled on the sea-coast
with the laurel and the fentiek. The wild vine and the
evil acacias frequent the mountains, and when burnt the
wastes nourish the Amphihocal peach, the Arta nut, and
the quince. The cultivated fruits are the olive, which
might be rendered more productive by better care; the
twine, the pomegranate, the orange, the lemon, the mulberry,
and the fig. The principal produce is barley, maize, and
other grains, tobacco, and cotton; some portion of
it is exported. The horses are spirited and active, but
not large; asses are also used; the oxen are ill-shaped and
stoutened; flocks of sheep and goats* are numerous. Con-
siderable numbers of all these animals were, and probably
continue to be sold into the Ioman islands. The dogs
which Mr. Holburne saw on his road from Arta to Joannina.

The inhabitants of Albania consist chiefly of Greeks and
Albanians, who are mixed together by a few of other names
intermingled with them. We shall here confine ourselves
to the Albanians, who have attracted considerable attention
in modern times, from the celebrities of the late Ali Pasha,
and from the accounts of them given in the travels of Mr.
F. Sir John Holland, in 1810, and of Dr. Holburne
in 1812 and 1813, and in the Researches in Greece of Col.
Leake, who resided in Albania a short time previous to the
date of Mr. Holburne's journey. These writers, with M.
Malte Brun, we have taken as our chief guides, and refer
their works for more particular information. It may be
mentioned, that the two men who have attained the
greatest eminence among the Turkish swain in modern times
have been Albanians; viz., Bairactar, whose successful re-
partitions of the Albanian people, his friendship with
Sultan Mahmoud on his throne, and Mohammed Ali, Pasha of Egypt, who has near-
pelled him from it.

The Albanians were probably the original stock from
which the Albanians sprang. Polybe mentions a tribe of Albani,
to which he assigns the names of the Albanians, Bara, and
other tribes, and says that they have always been distinct
from the people, the By-
zantine Greeks gave to the inhabitants of these mountains,
which spoke the same dialect, the name of Amerini (Alba-
netes), Albanoi (Alban), or Apanoi (Albanoi); and to the
country that of Albania (Alban). The Albanians are the
Albanians by language. Hence the Euro-

Some writers have assigned to the Albanians a different
origin; supposing them to be the descendants of the Alban
of Asia, which dwell between the Euxine and the Caspian
sea; and by others that they are the descendants of the
advance of the Selavonian nations, that for some cen-
turies followed the track marked out by the Huns, when
they broke into Europe. Mr. Holburne, who adopts the
above hypothesis, describes the modern Albanians as a
mixture of Greeks, Romans, Goths, Vandals, Spaniards,
Italians, Bulgarians, and Ottoman Turks, and supposes
(though we believe it to be a mere supposition) the basis
of their language to be the Selavonian. Pouqueville asserts
that the Albanians have no exstinct tongue; but they do not
say that they are descended from the French; and Meletius,
a geographer of the last century, says they are descended from
Celts who crossed over from Iepysia, now the Terra
di Otranto, in the kingdom of Naples.

In the 12th century or early 13th century Albania was included in
the great Bulgarian kingdom, established south of the
Danube, of which Lychnitis was the capital. In a suc-
cest period we find the Normans of Sicily and Tarento
in permanent possession of some places on the coast.
Du-
cazzo was at one time their depot and place of
ransacking, before the capture of Constantinople by the
Franks (A.D. 1204),
Michael Angelus, a bastard of the family of the
Commun, founded, was called the Despotate (Despotatou,
Lord-
ship), a principality, comprehending the ancient Aetolia,

* The wild goats of the mountains in the province of which
is exported, and their skins are to hold wine (to which, however
impart a strong flavour; the flesh of the kids is considered equal to lamb.
Acurania and Epirus, including the towns of Joohnina (which became the capital), Arta, and Nepakto (or Naupactus). The despots were sometimes tributary to the emperors of Constantinople, at other times independent, or even rebellious. A vermin, which of Albania was sent to a governor sent by Theodore Lascaris II. emperor of Nice, (one of the sovereignities which sprung up on the above-mentioned capture of Constantinople;) but as the Albanians preferred the sway of the despots, the governor retired. The name of Albania was also given to one of its feudal states, and, as such, was held by Berat, and the quarter of Berat, in the heart of their country, was subject to Constantinople.

The fourteenth century the power of the Albanians was so far increased as to lead them to attempt conquests distant from their mountains, but they could not retain their acquisitions. Some of their northern towns were taken by the Venetians; and the nation ultimately bowed to the supremacy of the Turks. At the celebrated George Kastrici, or Castrick, called by the Turks Iskander (Scanderbeg), could only delay the subjugation of his countrymen. He died in 1466 or 1467; and the Turks completed the conquest of Albania in 1478. The people, indeed, had become longer ones were submitted, nor does it appear probable that the sultan ever had more authority than at present, when he cannot appoint a governor who is not a native of the province: but the conquest, though imperfect, was followed by various considerations. In the days of Castrick the Albanians were a tall and stately race, and continued to be so till the middle of the seventeenth century. They are now half Mohammedan, but their conversion is probably owing to policy, that they may attain to high dignities; and their adherence to the usual practices of the Mooslems is by no means of a rigid character. They intermarry with Christian women, and the children are divided between the opposite creeds of their father and mother, the boys going to the mosque, and the girls to church. Their laxity is a subject of ridicule to the more orthodox Turks. The Albanians of the coast are mostly Christians, and some of them of the Latin church.

The Albanians are about five feet and a-half high, muscular and straight in their persons. Their activity and the tight girdles which they wear render them small round the loins: they have broad full chests, long necks, long oval faces, with prominent cheek bones, and flat raised foreheads, arched eyebrows, blue or hazel (rarely quite black) eyes, a keen, hawkish nose, a small mouth, and small, and small mouths, furnished with good teeth. Their complexion is white in youth, but get tinged or dusky in old age. They wear mustachios, but shave off the rest of the beard. Their features show a mind unsubdued by slavery, and a heart, wretchedly insignificant. They are a race of men, tall, strong, and good-looking; but their appearance indicates wretchedness, ill usage, and hard work. They are not so early marriagable as the women in southern Greece, but they retain their looks longer, and give birth to children at a more advanced period of life.

The dress of the better sort consists of an outer mantle, made of coarse woollen stuff, bordered and variously figured with a border of felted wool: the outer mantle is about as long as the body. The lower mantle is of a dark brown, and is made up of a series of several pieces, which are sewn together, and then sewn to the body with strong seams. The Albanians often add to their dress a shawl tied on the head like a turban.

The dress of the common people is usually composed of materials which once were white; but the clothes of an Albanian, owing to his scanty wardrobe (which rarely contains more than two shirts), and to his habit of sleeping dressed on the ground, present a very unsavoury appearance. They are, in fact, very filthy in their persons, and infested with vermin. They eat cold, and are frequently driven from their clothes without shame for themselves or consideration for others. The poor seldom wear their sandals.

The Albanians are fond of ornaments. They wear silver chains round the neck with amulets, silver snuff-boxes, or watches, with silver clasps at the end. Of one ornament in particular they are very proud and careful. It is a copper, or sometimes a silver pencecase, a quarter of an inch thick, (some say as much as an inch and a half) and ten or eleven inches long with a chain of neck. It is suspended by a silk cord round the neck, adorned with a silver chain, even when unable to use it. The poor all carry at least one pistol in their girdles; and are especially proud if they can have the handle of silver, being comparatively careless about the body or the lock.

The dress of the women is fantastical, but they are more cleanly than the men. The women at Cesarades, a town which Mr. Hobhouse passed through, were chiefly clothed in red cotton, but he never observed this colour elsewhere. Their heads were wrapped in a rounder, which look like a helmet and crest, with clasps under the ears. At Ereeneed, a place not far from that last mentioned, the garments of the women were of white woolen, and the women wore of skull caps and a little iron or gold coin. Their hair also, which fell down in long braids, was strung with money, so that the young girls thus carry their portions (as they collect them) on their heads.

The food of the Albanians consists of wheaten or barley bread, but principally of flat bread made of boiled or roasted maize; of goats' milk cheese, rice, butter, eggs, dried fish, and vegetables. The proportion of animal food is but small. On holidays they kill sheep, or kids, or fowls. Their diet is usually sparse; but this arises from parsimony, as they will eat occasionally when they can do it at the cost of others. They all drink wine, as well as rakée, a spirit distilled from grape husks and barley, and not unlike whiskey. They drink also abundance of cold water, (and that when they are hot, without taking any inconvenience,) some coffee, the Italian rossogliois, the liqueurs of Corfu and Cephalonia, and a little milk. The wine, made in quantities and kept in casks in Johannina and other large towns, is mixed with fine resin, lime, and water. The resin is to impart strength, but is counterbalanced by the water; the lime is intended to refine the liquor. This process, however, imparts a harsh flavour.

Their habits are for the most part very filthy. The chambers have several hot and cold ashes and fires, which is regularly swept, and is quite dry. The rooms are commonly two, one of which is appropriated to the store of maize in the stalk, and of grapes which are sprinkled with salt. The fire is made in the floor, and as they have only a cast iron wall for protection, it is not exactly safe. The apartments are sometimes smoky. Their furniture is very simple. A large circular tray of thin iron or tin, is used for eating on, and is kept well scoured and very bright. They have also a pan to mix meal in, a wooden bowl or two, some horn spoons, jars for oil and wine, and a small copper coffee jug. A brass lamp, three or four white rush mats, and a block of wood about a foot high, serving as a stand for the eating tray,—all which articles, as well as those previously mentioned, are kept on the floor, and the least,—complete the list of an Albanian's domestic utensils.

Their houses are detached with a garden to each. The house in which Mr. Hobhouse lodged, at Ereeneed, had belonging to it a tall brick chimney, a vineyard, and a vegetable garden, all surrounding a stone wall. The house was in an inner yard, so walled as to form a sort of fortification, with holes in the wall, placed at regular distances, and said to be intended for guns. The houses of their villages are almost all with a large tree for holiday sports. On this green is the circular paved threshing-floor, where the corn is trodden out by horses, who are fastened by a cord to a post in the centre of the floor, and driven round, some one to the number of eight or ten at a time.

A distinguishing feature of the character of the Albanians is their nationality. Their answer, when asked what they are, is not, as in other places; 'I am a Mohammedan,' or 'I am a Christian,' but 'I am an Albanian.' In fact, their independence and love of country have almost entirely
removed that distinction between the professors of the two religions which prevails so much in other parts of the Turkish empire. The laxity of the Mohammedan portion of this singular people has been already noticed. Their nationality accompanies them when they leave their native land. In foreign parts, they look upon their right to traffic and as if it were a natural right, although he may be personally a stranger to them.

They are proud of their prowess; and, indeed, they are a nation of warriors, being all capable of using the sword or the long gun. The latter (and, indeed, the saber too) is to be found among them in all kinds, small and large, and at all its make (for the locks are usually rude, and the barrels thin and badly manufactured), and the coarseness of the powder, render it far from an efficient weapon, and prevent the Albanian from acquiring much skill as a marksman. As such, carry arms, it is difficult to distinguish the peasant from the soldier.

Although the poorer classes among the Albanians will not steal, or, at any rate, are less addicted to theft than the same classes among other people, yet open robbery, upon a large scale, is not considered disgraceful. Man will commonly, in reference to a past event, speak of it as occurring when they were robbers. It is impossible to avoid observing the strong points of comparison between the habits of the Albanian and those of robbers upon whom robbery on a large scale were honourable professions, and those of the inhabitants of modern Greece, and other parts of European Turkey. Early in the summer, bands are formed, the town and villages are plundered, and, by skill or by brute force, the value of a few, or of seven hundred, or even a thousand men, retire to the tops of some mountains—those of Metzovo, for instance—and there live in caves or in the open air; making Greece, however, and not Albania, the scene of their robberies. Robes are stolen from their dwellers, with them, and their flocks supply these predatory bands with meat; they procure bread from the peasantry. A gentle tap at the cottage door is heard in the stillness of the night, and the well-known word "Psamé" (broad), informs the inhabitants of a man approaching, which has hitherto discomposed. These robbers are very cautious in making their attacks. They lie quietly in wait, and suffer their prey to get quite into the midst of them. If the party to be stolen is discovered, they then without raising from their covert until either they are repelled, or have obliged their victims to cry quarter. The prisoners are gagged, bound, and plundered; and, if wealthy, detained until they are ransomed. If there is no expectation of resistance, the robbers still stand by; and, of course, the character is improved by their efficiency; the Mossul, which is frequently, however, made with success: the assailant getting behind alone and returning the fire of his opponents,—who are very slow, unless they have great advantage in number, and attacking the whole of the Albanian has always been of a warlike character. They were the soldiers of Pyrrhus, one of the most formidable opponents whom the Romans encountered; and under Scanderbeg they arrested for awhile the tide of Turkish conquest. At present, under the denomination of Arnauts, they rank among the flower of the Ottoman army, and are found as mercenaries in all parts of Turkey and in the Barbary States. They take the field without baggage or tents, and are far more active than the generality of the Turkish soldiers. A regimen in their habits is a ration of one or two pounds of wheat or maize flour, with a few black olives or salted pickles, sufficient for their wants. While daylight continues, they are engaged in wrestling or other like exercises; if womanly, they are learning to sew the garment which they are to wear; and they go hunting to cure them, after which they turn back to the field. Many of them know how to set a bone in their rude manner; and they will even attempt some of the more delicate operations of surgery. They follow the profession of arms till they become destitute. Besides the annual resort of the robbers to the mountains already mentioned, the migrations of some of the shepherds require notice. These, with their flocks, their horses, their movable houses, their goods, their wives and children, remove at the commencement of winter, as if they were in a hurry to quit the country. This approach of winter renders the milder climate of the plains more desirable.

Their agricultural skill is not great. Their plough is of simple construction, and in some of the hills they reap their corn, though with little skill, and they never mow it. The business of sowing and reaping is left to the women and to the aged. The young men fell timber or dress the vines:

nor are they averse to the occupation of shepherds, as it enables them to indulge that idleness to which, when not engaged in war, they are so prone. Their indolence, however, does not give them that grave and torpid air which distinguishes the Turks.

They look upon the female sex as cattle, make them labour, and beat them; yet all marry who can; marriage being in itself a sign of wealth. Mr. Hohbuse witnessed a nuptial procession at Joannina, during his abode in that city, when the bridegroom had taken place in the morning, and the bride had returned to her own father's house. The marriage was consummated, however, in the house of Ali Pasha, where, while unmarried, she had been a slave. In the evening, the bridegroom, a Christian Albian, an officer in Ali's service, went to fetch her, being accompanied by a number of robbers, who formed a reception of colour paper. On the return, the bridegroom with his party went first; then came six young girls, splendidly dressed, two of them carrying infants. After these followed a woman, in still richer attire, bearing a small red trunk, in which was the portion given by Ali to the bride, as having been attached to the harem. The bride herself came next, bearing, in dress and in rigidity of muscle, a closer resemblance to the wax figure of Queen Elizabeth, in Westminster Abbey, than to anything else. Her face was painted, and his hair, which was of a dark brown, thick and curling, was arranged to a more picturesque style.

Most of the Albanians speak Greek, which is also the common written language in use among them, for their own vernacular tongue is unwritten. Very few of them, even those who can read and write, can understand the language of Joannina, of the better sort, are well instructed in the manners and languages of Christendom; and that town once furnished a residence to travellers both safe and agreeable. At the present moment the town is in a most ruinous condition, having been burnt in the time of Ali Pasha's assassination in 1820, and having been plundered five times since by the Albanians. (Sketches in Greece, 5th London, 1833.)

Dancing is one of their most common amusements. The musical instrument in general use among them is a kind of guitar, with three strings, a long neck, and a small round base. They strike the chords, not with the hand, but with a piece of quill, half an inch long. Its sound, as may be supposed, is sufficient. It is just sufficient as an accompaniment to their songs and to mark time.

A distinction of character may be observed between the Albanians of different districts. In the northern part of the country, which is better adapted for cavalry, the national character is more warlike; by the very nature of their occupation, the Albanians are constantly seeking to be engaged in death, of any other part of European Turkey; but this is generally in the case of the Greeks of Joannina, who are an industrious people, rather than of the Albanians. The physicians in large towns are Greeks, but the surgeons are commonly Albanians: their practice is, however, of a very inartificial and somewhat violent character.

The country is under the government of the different Turkish Pashas in whose territories it lies,—as those of Joannina, Scutari, Ohrida, At violating, and Delvino. But the country of the Albanians is singular in one respect: it is inhabited by a people, the power of the Pashas, unless wielded by a hand like that of Ali, may be regarded as very small. The local authorities are constituted very differently in different parts of Turkey. However, the ruler of the region of one man, bearing the Turkish title of Bobi Bashe, or the Greek title of Capitan, or else some designation borrowed from Europe: here an Aya or Bey becomes a petty chieftain of
the villagers; while in other places, as in the town of Argyro-Castro, the local bazaar (the Bazar Hol- house’s Travels). How far this state of things has been affected by the overthrow of Ali Pasha, we have not at present any means of learning. The authority quoted in the preceding page leads us to suppose that Albania is in a most disorderly condition.

The population of a country such as Albania cannot be estimated with any tolerable accuracy. Upper Albania, beginning either at Delviniski or Tepellene, is generally more populous than the districts to the south. The population of Albanian and Skodër, Drin, and Hilandar, at 2,000,000; but these dominions stretched far beyond Albania, regarded even in the wide extent in which we have been speaking of it. We do not see how any calculi of war, trusting can be made.

The trade consists mainly in the exchange of natural products for the manufactures of nations more refined. Oil, wool, wheat, maize, and tobacco, are sent to the ports of the kingdom of Naples, or to the Ionian Isles and Malta; and sheep, goats, cattle, and horses, to the Ionian Islands. Cotton-wool and timber are exported from the Gulf of Arta; but the cotton is brought chiefly from Thessaly, and the timber from ancient Acaarnia, on the south side of the Gulf. The manufactured goods which they export are carpets; and the silk of Vora, Elia, and Trieste, and the plain and gilt; and embroidered velvets, stuffs, and clothes. They import some coffee and sugar from Trieste; knives, sword-blades, gun-barrels, glass, and paper from Venice; and silver thread for embroidery, from Vienna, French and German cities. This, in general, thin texture, ill dyed, and altogether inferior to the worst English cloth, is sent from Leipsic, probably through the medium of Greek houses at Trieste. Caps are brought in from Trieste, Lepoglava, and Genebra. They are all exports and imports, which being landed at the ports of Prevesa, Sidara, Avlona, and Durazzo, are conveyed on horseback to the great annual fair of Joannina. (See Hobson’s and Holland’s Travels; since which time things may have changed.) Linen, velvet, guarnements, and ribbons, are the chief exports. The want of ready means of communication is a great impediment to traffic. Goods are conveyed by pack-horses; four or five of which are attached to each other by cords, and guided by one man. The vigorous government of Ali, by the support of robbers and the construction of roads, afforded facilities for internal traffic which did not previously exist.

The revenues of the late Ali Pasha arose from a land-tax, irreverent, and at some time under the Turks affecting probably one per cent. of the produce. an arbitrary tax on corn and towns, depending on the necessities and will of the Vizier; duties on exports and imports; the assumption of a right to all property when there are no male heirs, founded on the general custom of the country. In the preceding Caracciolo, a very rich and substantial man, was appointed property, equal to about ten per cent. of the value of the property; requisitions, on particular places, to aid in buildings or other works carried on by the government; and a partial monopoly of the corn trade. The actual contribution to the imperial treasury at Constantinople is not known. Ali had immense private revenues, and also considerable boards of trade.

The Albanians, as might be expected from their imperfect civilization and their peculiar habits, are divided into tribes, each having its proper designation, and distinguished in some particulars from the adjacent tribes. The most northern, and, if we may judge from the extent of country occupied by it, the largest tribe is that of the Nriters, Oue- grus, who inhabit the country watered by the branches of the Drin. The Midrites, from whom Scanderbeg arose, and who owe to their priests a degree of civilization which distinguishes them favourably from their neighbours, appear to be a subdivision of these. Southwards are placed several other tribes, noted for poverty, dirt, and pilfering; and the Trani, succeed these as we advance towards the south; and the other tribes, either detached from the most important ones, or else entirely unconnected with them, occupy some portions of the country. (See Lach.) Among these, the people of the district of Scita may be noticed for their inclination of revenge, which they regard as a sacred duty, and which converts their different villages or towns into hostile stations. Some Bulgarian, and some Walachian colonies may be found scattered along the eastern frontier of Albania. This division by tribes is purely Albanian, and was probably the result before the Turks took any notes from them of several of the chief towns, as Dëvino, Berit, El Bassa, Avlona, Skodre, and others, became the seats of Turkish provincial governments.

Some notice of the chief towns of Albania will be found in the articles under their respective names. No one of them can be designated as the capital; for the country is not under the government of one Pasha. Jóannina, which is indeed beyond the boundaries of Albania strictly so called, is the most important; and after it may be men- tioned Dëvino, Berit, El Bassa, Dëvi, Durazzo, Dëvi, Dëvi, Vixier, Dëvi, Pasha, Alba, Avlona, Alba, Skodër, and others, became the seats of Turkish provincial governments.

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Albanian colonies are to be found in different parts of Turkey and Greece, especially in the ancient Attica, Bocotis, Dactyli, and Tauridea. All these colonies retain something of their warlike character of the nation is retained only by those who remain at home; and in the Mottes the language is nearly lost, while in the Attic villages it is retained; these being probably colonies of later date. The people of Hydra and Spetsia, are descended from Hyrs, or Cephalus, distinguishable from their neighbours. But the most remarkable colony is in Calabria, where the Albanians settled upon the Kastrioti receiving a Neapolitan dukedom. Their descendants in the 17th, 18th, and 19th centuries, numbered about 100,000, and maintained the Albanian dress. The women could only speak Albanian. The men could, however, speak the Calabrese also; and their original language seemed to be gradually yielding to that of their adopted country. There are also Albanian colonies in the Ionian Islands, which were governed by the British, as well as in the Dalmatian district.

ALBANO (FRANCESCO), was born at Bologna, March 17, 1578, and was destined by his father, a respectable silk-merchant, to follow his own profession; but his uncle, who happened to be a man of taste and a judge of art, when Mr. Swinburne travelled in 1762, amounted to 80,000, and retained the Albanian dress. The women could only speak Albanian. The men could, however, speak the Calabrese also; and their original language seemed to be gradually yielding to that of their adopted country. There were also Albanian colonies in the Ionian Islands, which were governed by the British, as well as in the Dalmatian district.

Among the large works traveled by Albanio, after his return to Rome, was a great altar-piece in the church of St. Sebastian, representing the martyrdom of that saint; and a picture of the Assumption, painted in conjunction with Guido. Some subjects are also in the tribunes of Madonnina della Pace. The best, at Bologna, are the Crucifixion, in Santa Maria di Maggior, the Baptism of Christ, in San Gregorio; and in San Bartolomeo, the Annunciation.
is on his small pictures, however, that Albano’s reputation is chiefly founded. He had neither power of conception, nor vigour of execution adequate to the performance of large works. Some of those last-mentioned, however, are tolerably successful, having been painted while he was fresh from the impression of the sacred Lori of London, or excited by immediate competition with Guido; but the natural bent of his mind was towards subjects of feminine and infantine softness, to high finishing, rather than bold effect. All his latter works are small and elaborate, those tending to become his lot this day. Yet even in his favourite class of compositions, Albano is by no means entitled to high praise. It is strange that in his delineations of infantine character, studied from models immediately before him, and from his children, a similarity to all familiar and domestic intercourse, he should not occasionally have caught some of those happy accidents, those momentary graces of action and expression, which children, when free from constraint, continually exhibit. But Albano’s grace is entirely conventional. This species of affectation, however, has always had its admires, and Albano is extolled for it by Malvasia in a ludicrous strain of criticism; ‘Albano did not,’ says he, ‘feign Cupid heavy and sleeping as Guido did, but represented him majestically seated on a throne, &c.’ The same artificial character pervades the landscape backgrounds of Albano. There is, nevertheless, in these landscapes, an occasional association of classical imagery which has an agreeable effect. Albano was well acquainted with such imagery. His best displays might be said to lie in his landscapes, his male figures; his women and children are better drawn. He might have become a good colourist, but for that anxious and elaborate mode of finishing which impairs the brilliancy of his pale, and giveth his flesh the appearance of ivory. But these deficiencies, the pictures of Albano have an originality, or rather a peculiarity, by which they are immediately recognized. There are, at Burghley-house, the seat of the Marquis of Exeter, some tapestries from his designs. Three of his pictures; viz., the Three Marys at the Sepulchre, the Four Roses, and two Portraits engraved by Sir Robert Strange. Albano died Oct. 4, 1660.

ALBAN’S ST., a borough-town in Hertfordshire, situated close to the site of the ancient Verulamum (Ver), being separated from it by the small river Ver, a feeder of the Coln. Verulamium was probably at first a British town, and then a municipium under the Romans; a term which implies that its inhabitants possessed some of the privileges of Roman citizens. The Roman road, called by the Saxons the Watling Street, was also called Verulam, because it first went direct to Verulam, passing close under its walls. (See Gibson’s Camden, vol. i. 79.) Verulam was the scene of dreadful slaughter in the great rebellion under Bolingbroke, when the Britons lost their last solidary claim to the province, and at other places, about 70,000 Roman citizens and their allies. The town was, however, restored, and continued to be a principal Roman station while people possessed this island. Here an eminent citizen, Alban, is said to have suffered martyrdom in the persecution under Diocletian. In his honour a monastery for one hundred Benedictine monks was erected in 733 by Offa, king of Mercia, one of the Saxon kingdoms established in Britain.

Ultima, or Uliss, the sixth abbot, may be regarded as the founder of the modern town of St. Alban’s; for he (about A.D. 948) erected three churches on the three principal roads leading to the monastery, laid out a place for a market, and encouraged the people of the neighbourhood to build by the church a town, and to use it as a market-place. In the years 1455 and 1461, during the wars between the rival houses of York and Lancaster, two fierce battles were fought in the neighbourhood of the town;* which must have been growing into considerable importance, as it obtained a charter of incorporation under Edward VI. Contiguous to the town is the Abbey, which must have been considerable in size, and has a number of small houses and cottages. The town is surrounded by a wall, and has a market on Saturdays; and two annual fairs, one on the 25th and 26th of March, and a cattle and holiday fair on the 10th, called the Feast of Our Lady. There is a statute fair for hiring servants on the 29th Sept.

The city is situated on the summit and northern declension of a hill, and under hill, the abbeys, and the churches, where the three principal streets meet. It is well paved and lighted, and has a supply of good water. The part on the old line of the north road (which runs through the town) is narrow, and has many ancient houses. The other parts are more spacious and well built; and the new line of the north road is adorned with neat villas and one of the most commodious inns in the county. The churches are, the Abbey Church, a rectorcy in the patronage of the mayor and burgesses; St. Peter’s, a vicarage in the patronage of the Bishop of Ely; and St. Michael’s, which is on the opposite or S.W. side of the town, and contains the monument of the great Bacon, who bore the title of Viscount St. Alban’s; there are also several dissenting meeting-houses. The grammar-school was founded by Edward VI; there is also a school supported by some property in the funds, and by subscriptions for education; five boys in the principles of the established church, and five in the principles of the dissenting meeting-houses. There are several almshouses; the principal one is called the Misericord, or simply the Buildings, for thirty-six persons, half of each sex, were built and endowed by Sarah, Duchess of Marlborough. Some remains of the walls of Verulamium are still discernible.

But the principal object in St. Alban’s is the abbey church, which is part of the ancient abbey, purchased by the inhabitants of Edward VI, for a parish church, at the price of 600l. and a fee farm rent of 160l, which last payment was in 1684 redeemed for 200l. The abbey itself had been granted by Henry VIII. to Sir Richard Lee, upon the seizure of the monastic buildings, and the power to destroy the abbey is built in the form of a cross. It is in length more than 600 feet from E. to W., including a chapel at one end; and the extreme breadth is more than two hundred at the intersection of the nave, the choir, and the aisles. The tower, divided by bands into three stages, and crowned by battlements and a spire, both of later date than the tower itself, which is one of the most perfect parts of the building; an advantage which it probably owes to a thick coat of plaster which was applied to the pictures on the outside of the church gives it an imposing appearance; but the effect is somewhat diminished, upon a nearer approach, by the heterogeneous materials of which it is composed; viz., Roman tiles from Verulam, flints, bricks, &c. The architecture, which is quite in the Romanesque style, is of two storeys, and is to be seen on opposite sides; and, indeed, so great is the variety, that the style of every age may be traced in succession from the time of the Normans to that of Edward IV.

The most-centred antiquities in the ancient ancient are the tomb and ancient. The church is separated from the nave by St. Cuthbert’s screen. There is also, a richly-carved screen over the altar; and several remarkable monuments, including those of Humphrey, Duke of Gloucester, and of the Abbots Ramryge and Sheatham. The abbey was converted into a hospital by Henry VIII; and the Parliamentary war from the prisoners confined in it, and from the rapacity or zeal of the parliamentary troops. On the 3rd of February, 1632, a part of the wall on the south-west side fell down, and in its fall did considerable injury. This accident was caused by a sudden stream of water from the raised street, which had led to a subscription for its preservation. The amount required is 15,000l.

The gateway of the abbey is still standing; and contains a statue to the house of correction on one side, and the goal for the liberty of St. Alban’s on the other. The place where the abbey was dissolved is estimated to have been 250l.;—a large income at that time. The abbey possessed also many privileges, and had a grant of precedence over all other abbeys, from Pope Adrian IV. (Nicholas Breakspear), the only Englishman who ever sat in the chair of St. Peter.

The population of the borough, according to the census of 1831, was 4772; but if the parts of St. Michael’s and St. Thomas’s are added to the present population, it is considerably enlarged. The limits of the borough would have been considerably greater. The additions to the borough by the Boundary Bill, supplementary to the Reform Bill, have increased the population to 5771. The poorer people are chiefly employed in the silk-manufacture and in the trade in silk and wool. There is a market on Saturdays; and two annual fairs, one on the 25th and 26th of March, and a cattle and holiday fair on the 10th. In St. Alban’s there is a regular system of police; and there is a statute fair for hiring servants on the 29th Sept.

The borough returns two members to parliament; and is governed by a corporation, consisting of a mayor, high steward, recorder, twelve aldermen, and twenty-four assistants, with a town clerk and subordinate officers. The gaol delivery is four times a year, the town having a separate

* In the first of these, Henry VI. fell into the hands of the Yorkists, and in the last was rescued by his wife, Margaret of Anjou.
rate jurisdiction. The family of Beauchesne takes the title of one of the families of this town, and the family of Grimston that of early from the ancient town of Verulam.

St. Albans is 20 miles N.W. by N. of London, and 129 W. by S. of Hertford. [See Chauncy’s Herfordshire; Newcome’s History of St. Albans; Boundary Reports.]

ALBANY, N.Y., 1654, was the seat of government of New York, but that of Prince Stolberg Gederen, in Germany, was born in 1753, and married in 1779 to Charles James Edward, called the young Pretender, grandson of James II. They resided at Rome, and had a little court, by which they were addressed as king and queen. In 1792, pretending to claim the succession to the throne of England, and to be the legitimate heir of Queen Caroline, he married for her own advantage, and with whom she did not agree, and retired to a convent. She afterwards went to France; but upon her husband’s death in 1798, she returned to Italy, and lived at Florence. She was a person of much natural beauty. In 1815, she went to Count Alifferi, the Italian poet, who died at her house in 1803. She, however, went by the name of Countess of Albany, as the widow of the last of the Stuarts, up to the time of her death, which happened at Florence only a few years since. She was fond of literature and of the arts, and her house was resorted to by the most distinguished persons at Florence, natives as well as foreigners. She caused a fine monument to be erected by Canova in 1810, in the church of Santa Croce, to the memory of Alifferi. [See ASPINAL.] The treaty of colours which was lately concluded between England and the colony of the Cape of Good Hope in South Africa. This district, which has been recently established, was formerly part of the district of Graaf Reynet.

Albany is bounded on the north and north-east by Cafraria—large parts of this district, containing from four to five annual swamps and their adjacent tracts, were purchased by the late government from the encomiendas. The Great Fish River, Washington.”

The principal stream of the district is the Great Fish River, which rises in the Sneeuwbergen or Snowy Mountains, and falls into the Indian Sea in 33° 30’ S. lat., and 27° 20’ E. long. The Portuguese formed a settlement on its banks soon after 1498, when the Emperor of Portugal sent his own vessel to the river, calling it Rio d’Infante. This settlement was soon abandoned, owing, it is said, to the constant and harassing inroads of the natives. The entrance to the river is obstructed by a bar of sand formed at its mouth, and bounded within the mouth of water by shallow butts of ships of the largest size. A settlement, named Graham’s Town, was formed a few years ago on the bank of the river, and has already become a trading-place of some consequence to the colony. The chief magistrate of the district resides in the town. The river next in importance is the Zondag, which likewise has its source in the Snowy Mountains, and which, after flowing through a great part of Graaf Reynet, enters the Indian Ocean at Algoa Bay, formerly known as Zwartkop’s Bay, in 33° 56’ S. lat., and 26° 53’ E. long.

A large natural saltpan is situated near to the Sunday River, and to this the inhabitants of the colony resort. The salt is formed in this pan in masses which are from four to five inches thick, and are covered with a thin crust of salt, which is taken from the pan with the margin of the pan, where it has been accumulated by the winds, is the most esteemed for its quality. The remaining rivers of the district are not of much magnitude: they are the Bosjemuus, the Karuuka, the Kasweta, and the Kei River.

The bays and inlets along the coast are frequented by abundance of excellent fish fit for curing; and in a more advanced state of the colony, when the market has become more extensive, fisheries will doubtless be established. At present the natives are in the habit of repairing occasionally to the sea-coast, and of taking and curing a quantity of fish, with which they return home for the consumption of their families.

The general appearance of the country is agreeable, it being diversified by hill and dale, and in many places ornamented by timber trees, so as to wear the appearance of an immense park. Numerous swamps and hills are met with in the valleys; and aloes, euphorbias, and some other succulent plants, are commonly found in such situations. The soil in many places produces an abundant spontaneous crop of coarse, sour grass, to which the district owed its old Dutch name of Grasveld (Grassland). It is said that the cattle in numbers, which formerly abounded, are now less frequently seen.

The population of the district in 1820 amounted to 1623 Europeans, 566 Hottentots, and 333 slaves; but the encouragement given about that time, by the British government to emigrants proceeding thither from this kingdom, has occasioned a very considerable increase to these numbers; and the inhabitants were found, at the last census in 1831, to amount to 6416, of whom 6277 were Europeans and free negroes, 111 Hottentots, and 128 slaves. The decrease in the latter class is accounted for by the fact, that grants of land have been uniformly made to the settlers on the condition that slaves shall not be employed in cultivating the soil. The district contains four free schools, supported at the public expense, where 192 scholars were taught in 1831.

The most important part of the trade of Albany consists in the traffic carried on by licensed traders with the native tribes. In the line of produce the flax and hemp, which is carried on through a very wide extent of country in the Cafraria territory, and is conducted in perfect harmony with the natives, whose attention has been successfully directed, not only to increase the quantity, but also to improve the quality of the goods, and to induce them to make use of these productions. The principal articles, procured in this manner, are hides, horns, and ivory, together with a considerable number of live cattle. The sale to the natives of arms, ammunition, and spiritoous liquors is prohibited, and such goods are declared liable to seizure as contraband. The raw produce shipped from the district in 1830 was valued at more than 56,000£.

The attention of the settlers has been drawn of late to the improvement of the flax and hemp industry, and they have been entertained of turning the extensive pastures of Albany to a profitable account in this manner, so that wool may in a few years become the staple production and export of the district.

Some quarries of indurated limestone have been opened between Bathurst and the Fish River. The stone from these quarries is easily worked, and hardens on exposure to the atmosphere. The houses in Bathurst are built of this material, and have a neat and substantial appearance. Some indications of the presence of iron have been met with; and manganese has been seen in various parts of the district.

Some few manufactories are established in Albany; among the rest are six tanneries, a woolen and flaxen manufactury, a prosperous grist-mill, a manufactory for blankets and coarse woollen cloths, and two establishments for making candles, of which article shipments are constantly made to Cape- Town.

In addition to Graham’s Town, the capital of the district, there are towns, or rather villages, that have been formed. These are Bathurst, Port Frances, and Salem. Report of Commissioners of Enquiry upon the Trade, Navigation, and Harbours of the Cape of Good Hope, printed by order of the House of Commons.

ALBANY, N.Y., the seat of legislation for the state of New York, is situated on the west bank of the Hudson river, 42° 39’ N. lat., and about 73° 13’ W. long., and about one hundred and forty miles nearly due north from the city of New York. The tide on these rivers is about five miles above Albany and on the opposite side of the river, up to which place there is a slop navigation. Vessels of eighty tons ascend as far as Albany; and there is a daily communication between this town and New York by means of steam-boats, except during the severest part of the winter season. The average length of the voyage is from twelve
to thirteen hours; but it is said to have been sometimes accomplished in a little more than eleven hours.

The town consists of one principal street of considerable length, parallel to the river, with other streets, some of which run down to the stream nearly at right angles to it. From the main street the ground rises abruptly, so that the rest of the city is on the side of a hill, and presents a very fine appearance from Greenbush, on the opposite side of the river. The principal building is the Capitol, a stone edifice, which contains the chambers both of the Senate and House of Assembly: it stands on the top of a steep but wide and hands-one street, called State Street. Albany contains, also, a state-house for public offices, an arsenal, a theatre, and twelve churches. The houses are built of brick and stone: and the older dwellings, with their gables turned to the street, of which we still observe some traces in the city of New York also, indicate the Dutch origin of both places. The principal supply of water to the town is from a source about two miles and a half distant.

Albany, from its central position, is a place of great and increasing trade, forming a kind of natural entrepôt between New York and a vast extent of interior country, comprising the Canada*, part of Ohio, on the one side, and parts of the New England states on the other. The Erie and Champlain canals unite at a place which bears the Dutch name of Watervliet (seven miles north of Albany), and from thence run one united channel to the large centre harbor of Albany, which is said to exceed thirty-two acres. Flour and other agricultural products form the staple of the exports. The following are pretty nearly the population of this town at different periods since the close of the last century:—1680, about 4000; 1810, 9316; 1820, 12,613; 1835, 15,071, and 1840 houses. A company was incorporated, April 17, 1822, to connect New York with Albany by a rail-road terminating opposite Albany on the E. side of the river.

Albany was originally a Dutch fort, erected in 1612 or 1614, called Fort Orange, and is therefore the oldest town in the United States, except Jamestown, on the James river, which dates from 1607. Somewhat later it took the name of Williamstown, which it retained till 1624, when the colony fell into the hands of the English. Its present name is derived from James H., to whom, when Duke of York and Albany, Charles H. granted the proprietorship of the colony. Albany is also the name of the county of which Albany is the chief town. (See Darby's Geography; Hall's Travels in the United States; Stuart's, &c.; Encyclopaedia Americana."

**ALBATROSS (Diomedea), a genus of web-footed birds, comprising three species,—the albatross of Chima (D. fuliginosus, Latham): the yellow and black-backed albatross (D. chlororhyncos, Latham): and the common albatross the nostrils lateral, and placed, like small rolls, in the form of the mandible: the feet short, the three toes long and completely webbed; the wings very long and narrow. The albatross is a word apparently corrupted by Dampier from the Portuguese Albatroz, which was applied by the early navigators of that nation to cormorants and other large seabirds. Grew wrote the word Albatros, and Edwards Albatres. The common albatross is the most frequently met with in the seas of Southern Africa. It is the largest sea-bird known. On account of its size and color it is often called the Shepherd of the Cape,—a name under which it has been found in several voyages.

**ALBEMARLE (DUKE OF).** [See Monk.]

**ALBEMARLE, a county in Virginia, bordering on the east side of the Blue Ridge, and partly watered by the James River and its tributary the Rivanna. It is famous for the natural beauty of its scenery and its general salubrity. The University of Virginia, an institution which opened in 1819, and Monticello, the seat of Jefferson, are in this county, and adjacent to Charlottesville, the county town, and the only town. [See Charlottesville.]**

**ALBEMARLE SOUND** is an inlet of the sea on the eastern coast of North Carolina. It is sixty miles in length.
and its breadth varies from four to fifteen miles. The waters of the Roanoke and Chowan rivers fall into this Sound, which may be considered as the estuary of those streams. The first-named of them is navigable for more than thirty miles, and is crossed by vessels of considerable burthen; and boats of from thirty to forty tons can proceed to the foot of the Falls, seventy miles from its mouth. The Chowan river is three miles wide at its entrance, but speedily becomes more moderate through the willow beet. The minister, instead of being swept off by the current, was saved by the gentle breakers of the Atlantic by a narrow channel, called Roanoke Inlet, in 35° 50' N. lat., and 75° 35' W. long. It has also a communication with Pamlico Sound, which lies to the south, and with Currituck Sound to the north. A navigable canal, cut through a sand-bank near the mouth of the Chowan, admitted the minister, in company with Dr. Pasquetton, which fell into Albemarle Sound, with those of Elizabeth River, whence a communication is obtained with Chesapeake Bay.

ALBERONI (CARLO ALGiUlio) was born in the state of Piacenza, in May, 1644. He was bred to the church, and became curate of a country parish. The Duke of Vendôme, who commanded the French army in Italy during the war of the Spanish succession in 1702-4, happening to be in the states of Parma, and being in want of corn for his troops, resolved to try whether the parvenu and adventurer, who had long been known to the court, and who, from his humble origin, had ascended to the rank of minister, could be converted to the interests of France. An appointment was made to him of one thousand French crowns from Louis XIV. Alberoni followed the Duke into Spain, where the war was then raging in Catalonia. Vendôme employed Alberoni in his negotiations with the court of Philip V., where at that time the Princess des Ursins was present. The Duke, who was already in close alliance with the princess, whose intriguing mind was congenial to his own, and who became her confidant. Through her means he was constituted agent of the Duke of Parma at the court of Madrid; in which capacity he was instrumental in bringing about the marriage of Philip V., with Elizabeth Farnese, daughter of the Prince of Parma. He set off for Parma to stipulate the marriage-contract in the king's name. In the mean time, the Princess des Ursins having understood that the character of the future bride was not so mild as it had been represented by Alberoni, and that she was likely to endanger her own influence at court, prevailed on the king to despatch a courier to Parma, with orders to Alberoni to suspend the negotiation. The courier arrived on the eve of the day appointed for the marriage. He was received at the gates by threats or bribe, prevailed upon the man not to make his appearance until the day after. The marriage-contract was signed in December, 1714, and the new queen set off for Spain. The first favour she asked of her husband, in writing, was to dismiss the Princess des Ursins from court. The latter, who had set off from Madrid to meet her, received an order from Philip to quit Spain immediately. The new queen, in gratitude to Alberoni, had him appointed a member of the king's council, Bishop of Malaga, and, lastly, prime minister of Spain. He now devoted all his energies to rouse Spain from the state of weakness into which she had fallen during the preceding century, and make her act a principal part in the affairs of Europe. Alberoni was not secure of his situation, for, as soon as his intrigue was discovered, he suddenly invaded the island of Sardinia, which had been secured to the emperor, and afterwards, in like manner, conquered Sicily, - the Duke of Savoy being then at peace with Spain. All Europe was astounded at this new war stirred up by Alberoni, who, well versed in the art of intrigue, was deft and adroit in the management of events. Under his conduct; and an alliance was formed against Spain in 1715. Alberoni defied them all: he favoured the Pretender, in order to find employment for the English at home; he tried to excite disturbances in Austria and the south, by claiming for Philip V. the regency of that kingdom during the minority of Louis XV.; and he even corresponded with Ragotski of Transylvania, and with the sultan, in order to divert the attention of the emperor. The latter was already mentioned in connexion with the recall of Prince Eugene, in the midst of his successful campaigns against the Turks, and to conclude with the latter a disadvantageous peace at Passau. The clamour against Alberoni, on account of these intrigues, was universal. Pope Clement XI., who had been induced by Philip V. to make Alberoni a cardinal, was loud in his remonstrances against him. The fall of Alberoni was resolved by the allied powers to be the only means of restoring peace to Europe. The Duke of Parma was prevailed upon to use his influence with the court of Spain, and especially with the queen, who being already weary of the haughty, overbearing tone of the cardinal, relented. Philip V. wrote his own hand an order for Alberoni's deposition, and his banishment from the Spanish territories. This happened at the end of 1719, after Alberoni had been minister about three years. Alberoni repaired to Italy, where he had transmitted large sums to Genoa given by the queen to Alberoni, which Alberoni, however, evaded. A process was instituted, at the same time, against him at Rome, which he also contrived to protract. Pope Clement XI. dying in March, 1721, Alberoni suddenly repaired to Rome to attend the conclave, to the astonishment of the people who crowds, to see this famous personage. The new-elected Pope, Innocent XIII., quashed the proceedings against him.

Some time after, Alberoni was sent as legate to Romagna. But he had not yet totally forgotten his habits of intrigue; and, being no longer to disturb the peace of Europe, he contrived to embroil the diminutive republic of San Marino, which unfortunately was placed in the neighbourhood of his government. Under the pretence of removing the objectionable trade of the Grand Mogul and some discord among his people, who, by the death of San Marino, and called upon the citizens to swear allegiance to the Pope. Some run away, others refused, and the rest complied through fear. The Pope, however, disapproved of Alberoni's conduct, and sent another legate, who reinstated the Pope. This conduct shows that Alberoni was the author of the new constitution of 1740. Alberoni, after this, retired to Piacenza, his native country, where he lived in affluence, and built a large religious house. He remained in retirement, forgotten by the world, till the 26th of June, 1752, when he died at the advanced age of eighty-eight.

Alberoni left a quantity of MSS., from which a work, called his Political Testament, published at Lausanne in 1753, was said to be derived. He is remarkable as one of the most prominent examples of that class of statesmen who rose to power by the mere force of intrigue, being uncontrolled by public opinion, thought their own ambition and their pretended zeal for their despotic masters a sufficient motive to plunge the people of Europe into continual wars, in which they had no real interest; and whose effects have so long retarded the natural progress of mankind in civilization by the efforts of peaceful industry.

ALBERT DURER. [See Durer.]

ALBERT I., Duke of Austria, and afterwards Emperor of Germany, was the son of Rupert, Prince of Hapsburg, head of the imperial Austrian dynasty. Albert married the heiress of the former Dukes of Austria. After his father's death in 1291, he assumed the imperial title, in opposition to the votes of the electors, who had chosen Adolphus of Nassau. After several years' war between the two competitors, Albert defeated Adolphus, who was killed in battle in 1298. Albert then ascended the imperial throne, and received, after many difficulties, the confirmation of the Pope Boniface, VIII. His wars opened in 1296, with the Bohemians, whose country he attempted to conquer, but without success. Soon after this, the Swiss forest cantons revolted, on the 1st of January, 1308, against Albert's lieutenants, whose government was arbitrary and oppressive: this was the beginning of the war between the Switzers and Hapsburgs. In consequence of indignation, came with troops to chastise them: he advanced as far as Baden in Aargau, where he summoned his vassals and held a council for the reduction of the revolted cantons. On the 1st of May, 1308, Albert left Baden to return to Switzerland, where he was met by the archbishop of St. Gall. As he crossed the river Reuss at Windisch in a boat, he was separated from the greater part of his suite, his nephew, John of Habsburg, and three other noblemen only, crossing the river and following the path. In the night Albert found his camp at Sindelfingen, where the army was about to march towards the bank of the Reuss, the conspirators fell upon him and murdered him, in sight of his attendants on the opposite side of the river, who could give their master no assistance.
ance. Albert expired in the arms of a poor contrawoman, who happened to pass that way. The murderers of the two of them were afterwards taken and executed, as well as a number of other persons, mostly innocent, who were suspected to have been concerned in the conspiracy. Agnes, Albert's daughter, and Queen of Hungary, carried her vengeance for her father's death to a most dreadful end. Nearly one hundred noble families, and one thousand persons not noble, of every age and sex, were involved in this inhuman proscription. The executions listed several months. After this butchery, Agnes built a monastery on the site of it, and Albert had been obliged, it was said, to go beyond the Königsfelden, and here she shut herself up for the rest of her days. The remains of this monastery and church are still to be seen, as well as the apartments which Queen Agnes occupied. Königsfelden is on the high road from Basle to Zürich in a country not far from the Castle of Hapsburg, from whence the House of Austria originally sprung.—Johann Muller, Geschichte der Schentries.

Albert II., King of Hungary and Bohemia, and Duke of Austria, succeeded Sigismund as Emperor of Germany in 1438. He held a great diet at Nuremberg, in which the Teutonic secret courts were suppressed. He died the following year, as he was preparing to take the field against the Turks, who were ravaging Hungary. His son, Albert, Archduke of Austria, son of the Emperor Maximilian II., was made a Cardinal and Archbishop of Toledo. He was appointed by Philip II., in 1596, governor of the Low Countries, and succeeded the Duke of Parma in the government there, after carrying on the war against the Dutch, who had revolted from Spain. He resigned the cardinalship and married Elizabeth of Austria, daughter of Philip II., who brought him Flanders and Franche Comté as her dowry: he thus became sovereign, nominally at least, of the Belg provinces. In 1599, he fought the battle of Nieuport against the Dutch under Maurice of Nassau; this engagement, in which Albert was defeated, decided the independence of Holland. Albert next besieged Ostend, which he took after a long and severe siege, in which one hundred and twenty thousand men are said to have lost their lives on both sides. In 1609, Albert concluded a truce with the Dutch for twelve years, before the expiration of which he died, in 1621. He left no children; and the dominions of Flanders reverted to Spain.

Albert, Prince of Mecklenburg, was called to the throne of Sweden in 1334, by the nobility who had deposed King Magnus. The partisans of the latter, joined with Haquin, King of Norway, carried on the war for several years; at last Magnus formally gave up the crown to Albert in 1347. He married, in 1355, to Margaret, daughter of Haquin, King of Norway, became queen of both Denmark and Norway, and soon after the Swedes, being dissatisfied with Albert, who favoured German music, rose in arms, and were defeated at the battle of Bolle-Berg. After some years of changeable policy, which alternated between peace and war, Albert died, in 1395, defending his dominions from an invasion of several thousand Danes, who were led by Haquin, his uncle. At his death, the country was divided between his two sons; he was succeeded by his eldest son, who was then only a child, and was called Magnus. The elder son, Albert, was afterwards made regent, and reigned in conjunction with his elder brother, Magnus, until the latter's death, when he succeeded to the whole kingdom.

Alberti (Leon Battista) a distinguished mathematician, but more celebrated as an architect, and hardly less so as a philosopher, poet, painter, and sculptor. He was of the ancient and noble family of the Alberti of Florence, in which city he was born about the year 1400—Mihaly says, in 1408. He was nephew of the Cardinal Albert, and he himself became a kind of papal architect, having adopted the early Roman manner. It is understood, that he might have leisure enough, and the means, to use up his learning. To his father, Lorenzo, (Laurenzio) he was indebted for great care and attention in his education; and hence study had much the habit of life, that he is said never to have spent an hour in leisure, nor even to have passed a day without reading. He devoted much of his attention to the acquisition of the principles of architecture, by the observation and advancement of his countrymen, and by the study, and the practice of the works of Vitruvius. Alberti became distinguished among the patrons of the new style, which has been called a Renaissance —the ancient and classical. This he practised in all the arts, and he enriched the design of the new style, and the effect which the admirers of the style require. When at Rome, Alberti was employed by the then Pope, Nicholas V., to repair the ancient aqueduct of the Aqua Vergia, and to construct the fountain in which one of its colossal issues. This is the famous Fontana di Trevi, which stands at the foot of the Quirinal: but the structure was so much decorated by Salsi in the pontificate of Clement XII., that not a vestige now remains of the design of Alberti, and of the peculiarities of the school of Rome. Alberti was employed to design the plan of the church of St. Peter's, in Rome. He commenced a great number of several works which had been commenced by Brunelleschi and left unfinished at his death. He designed and executed in Florence, of himself, the Palazzo Rucellai, the choir and tribune of the church of Santa Croce, the foundations of the manner of an ancient circular temple; and some attribute to Alberti, but, it would appear, without sufficient reason, the principal front of the church of Sta. Maria Novella. At Mantua, for the Duke Lodovico Gonzaga, he executed several edifices, the most important and memorial of which was the church of St. Andrew, the interior of which, however, has been very much injured by later alterations and additions. But the most esteemed architectural work of Alberti is the church of Sta. Maria Grazia at Milan, which was designed, in 1461, by Alberti, for Malatesta, lord of that city. This he did by removing, as much as he could, the picturesque peculiarities of a fine old church of the middle ages, and substituting the Renaissance style of his time in their stead. At this period, Alberti had composed the comedy Palafrancesco, in which he imitated the style of the Latin commedia as nearly as to impose upon Aldus Manutius, the younger, who himself edited, printed, and published it, as from an original and recently-discovered manuscript. Alberti tried to introduce the Latin rhythms into Italian poetry, but did not succeed. He wrote a work on sculpture—De Statua—which was followed by another on painting—De Pictura—which he calls poesia illustris et numera posterorum follis, and which is accompanied with a treatise on architecture, De Edificiis. This was not published until after his death, when it was edited by his brother Bertrando, and, at his own desire, dedicated to the Emperor Maximilian. Alberti died, at the age of sixty-four, his uncle, Sigismondo degli Alberti, in his bed, on the 21st of March, 1472, without having married, and without having a son to succeed him in his family. He died of a tertian ague, in 1472. Albertus Magnus, so called because his family name was Gross, which, in Dutch, means great. The admiration of an ignorant age transformed into a bonfire the surname, which had been latinized in conformity...
to the then prevailing fashion. He was born in Susia in 1205, and entered the order of Dominicans. Pope Alexander III. invited him to Rome and bestowed on him several dignities, with the bishopric of Ratibon, which he afterwards abdicated, and returned to live at his convent of Cologne as a plain monk. He there gave public lectures which were much frequented by the principal scholars of the age. Thomas Aquinas was among his disciples. Pope Gregory IX. called him to the general council held at Lyons in 1274, where he was appointed principal crusader against the heretics, reformed the church, and concerning the future elections of popes, for which purpose the conclave or council of cardinals was then first instituted. Albert died at Cologne in 1280, and his most powerful works, which were collected and published at Lyons in 1651, fill twenty-one thick folios. But most of these have been long since forgotten. His physics were taken chiefly from Aristotle, and his Arabian commentators. The Historia Animalium is, perhaps, the most remarkable for the time in which Albert lived, and he seems to have had access to ancient authorities which have since been lost. Several prodigies have been absolutely attributed to Albert, among others, that of having constructed a head of brass which had the faculty of thinking. Another, was related by a person who had been eyewitness of the whole, that he had a casket of secrets, which have erroneously been published under his name; among others, one, De Secretis Mulierum et Naturae, printed at Amsterdam in 1635, which is believed to have been written by one of his disciples.

ALBIGENSES. This sect appears to have first and most perfectly appeared in the South of France in the twelfth century, and was the object of long and cruel persecutions and wars. The denomination of Albigenses has been used by historians and other writers in many subsequent ages to designate a variety of people, and in restricted and appropriate sense, the Albigenses were a branch of the Cathari, who were themselves the descendants of the Paulicians, a branch of the Manicheans, from the East; and who, being persecuted by the Greek emperors and clergy, took refuge among the nations of the West. The multi-religion, in which they spread into the South of Spain, France, and other countries. They were called, in Italy, Cathari, or pure; also Paternini, from a place in Milan where they held their meetings; and Gazari, or Gazari or Lesser Tartary, the country from which they are supposed to have derived their name. There was a similar reason; and afterwards Albigenses, from Albige, Albi, the town where their tenets were condemned by a council in 1176. But the Cathari were divided into two sects, one of which held the old Manichean doctrine of two eleemosynaries, one male, and one female. The other sect held the doctrine of Jesus, and the other, the Principle of Darkness, which was the creator of the material world. This sect was also called Albanenses. The other division of the Cathari believed in one God, whom they called Either Father, Son, and Holy Ghost, with the latter, by whom the first matter was created; until the Evil Being, after his rebellion against God and his subsequent fall from heaven, arranged this original matter according to his own fancy, and gave it its present form and attributes. A barrier, however, was divided into two classes, the Consolators, or comforted, who lived in perpetual celibacy, abstained from meat and wine, and practised other austerities; and the Confederates, who, being unable to endure this mode of existence, lived apparently like the rest of the world, but bound themselves to a vow that before the death of their leader, the Cathari should be formed, by a ceremony of inauguration. But, in the more extended sense, the name of Albigenses was given in the twelfth and thirteenth centuries, not only to all the Cathari indiscriminately; but also to the two sects which existed in the South of France at the time, including the Waldenses, who were very distinct in their tenets from the others, and had no taint of Manichean in them. They all agreed, however, in considering the authority assumed by the Popes in spiritual matters, as well as disciplinary and ecclesiastical in the Roman Church, as unlawful and erroneous. Pope Innocent III. sent two legates, Peter of Castelnau and one Rainier or Raoul, both Cistercian or Bernardine monks, as his legates to France, in order to extirpate all these heresies. Dominic, a lay-bishop, and the founder of the order of Preachers, returning from Rome in 1206, fell in with the legates, and volunteered his services in the same cause. These champions, who, without asking for the advice or the concurrence of the local bishops, and upon the sole authority of the Pope, inflicted capital punishment on those heretics whom they could not convert by argument, were called, in common discourse, Inquisitors; but the famous tribunal of that name was not established until 1233 by Gregory IX., who, entrusted it to the Dominicans. In 1208, Castelnau, one of the legates, who had become odious by his severities, was murdered near Toulouse; and Innocent III. on this proclaimed a crusade against Aragon and against Raymone VI., Count of Toulouse, who supported them. All the French barons were summoned to take the field; and Simon, Count of Montfort, was appointed chief of the expedition, under the appeal, however, of Arnold, Abbot of the Cistercians, and the Pope's new legate. The war was begun, many years, attended by circumstances of the greatest faro city. At the taking of Beziers a general massacre of the inhabitants began. The league being asked by some of the military leaders how they were to distinguish the Albigenses from the orthodox Catholics, of whom there were many in the town,—'Kill them all,' was the reply; 'God will find out his own.' Montfort lost his life at the siege of Toulouse, in 1218, and Raymond, his adversary, died in 1222. The war, which was prolonged for several years, ended with the fall of Albi, 1246. From this time the name Albigenses is used, and is erroneously attached to Toulouse to try those heretics who had escaped the sword. Raymond himself died some years after; and in him the house of the Counts of Toulouse became extinct, and its territory was pretty well converted to the French crown. The extermination of the Albigenses in the South of France was complete; the country was devastated; and the language and poetry of the Troubadours became also extinct, the bardisms themselves being obliged to the terrors of the Inquisition to continue their art. The last remnants of the Crusade against the Albigenses; but the best account of them is found in the General History of Languedoc, published at Paris in 1730. (See Mosheim, Ecclesiastical History, thirteenth century, part ii.)

ALBINO'S, a breed of Portuguese origin, by which the Portuguese voyagers denominated the white negroes whom they found on the coast of Africa. These negroes were also termed Leucophites,—a term signifying white negroes. Both names are now used, but the former popularly, to describe the naturally white-black. Leucophites, has been written. A History of the Crusade against the Albigenses; but the most striking peculiarities consist in the colour of their skin and in that of their hair and eyes.

Their skin is of a pearly whiteness, without any admixture whatever of a pink or a brown tint. In the snow-white skin of the fairest European woman there is always some tint of a pink or brown colour, but in the Albinos the skin is wholly destitute of either tinge, and is of a dull pearly whiteness. It is often not soft and smooth in proportion to its whiteness, as is generally the case with the blonde of the European race; but, on the contrary, is rough, dry, and harsh, sometimes to such a degree that it has been compared to the skin of persons labouring under the disease called leprosy or luperosity.

The whiteness of the hair always corresponds to the whiteness of the skin. Not only the hair of the head, but also that of the eyebrows, eyelashes, beard, and even the soft down that covers the external organs of the body, has the same uncoloured whiteness. And this whiteness of the hair is not like the soft, snowy whiteness of the hoary hair of old age, and still less like the delicate yellow or flaxen tint of the fair-haired European woman, but is rather like that of the white horse or the white fox.

With this whiteness of the skin and hair is connected a still more striking peculiarity,—namely, a disagreeable redness of the eyes. That part of the eye called the iris is of a pale rose colour, while the pupil is intensely red: in a word, the eye is exactly similar to that of the white rabbit and the ferret.

In all persons there is a correspondence between the colour...
of the skin and that of the hair and eyes; and the close connection of those parts, in regard to colour, is strikingly illustrated in the Albino,—in whom the colouring principle common to them all is absent, and in whom this deficiency of colour is never found in one of the body parts singly.

Some inconvenience certainly arises from the conformation of the eye peculiar to the Albino. A strong light cannot be borne, and even the full glare of day appears to excite some degree of uneasiness. Hence the eyelids are unduly swollen, and outward displacement of the spectacle ball of the eye, with other persons, and the eyes are generally weak, tender, and watery; while vision is more agreeable and more perfect in twilight. But the inconvenience of an ordinary degree of light, and the advantage of imperfect darkness, have been exaggerated.

The physical, intellectual, and the moral qualities, associated with this singular conformation of the body, have not been stated with distinctness and accuracy. It would seem that the Albino is both physically and mentally weaker than other men. A. L. B. was in agreeing in his physical strength as inferior to that of persons of the ordinary conformation. Saussure, in his Voyage dans les Alpes, expressly states, in relation to two boys whom he examined with much caution at the entrance of the cave of a people to whom they were unable to entice the cattle like the children; and that one of their uncles maintained them out of charity, at a time of life when others were capable of gaining a subsistence by their labour. Wafer, the old voyager, relates the same thing of some of the inhabitants of Darien, while he represents them as being as nimble in the moonlight as the other Indians, states that they are not so strong and sturdy. But in what degree their intellectual powers are confined, or whether indeed there be any decided inferiority, he has at present no means of forming an accurate judgment.

It would seem that there is a greater tendency to the formation of this variety in some parts of the world than in others. It is more common among the African and the Indian tribes, and generally among the inhabitants of the Isthmus of Darien, and in some of the oriental islands; it is so frequent that some writers have conceived that those persons form a distinct and peculiar tribe; but for this opinion there is no foundation. M. Bonnin, however, states that there are more than a hundred white negroes, Blumenbach states, on the other hand, that he has seen them in the southern parts of Germany; and examples have been not unfrequently found in Denmark, England, Ireland, France, Switzerland, Italy, the Grecian Archipelago, and Hungary. It is common in both sexes, but it would appear to be somewhat more frequent in males than in females.

In order to form a just conception of the anatomical conditions on which the peculiar character of the Albino depends, it is necessary to understand the structure of the skin, and how in the Albino, and so on, the existence of this skin is composed of three distinct parts, the cuticle, or the scarce skin; the cutis vera, or the true skin; and a third substance interpolated between these two parts termed the corrus or the rete mucous. The cuticle or the scarce skin is the external coverings of the body. It is commonly concede to be altogether destitute of blood-vessels, nerves, and absorbers; that is, it is supposed to be wholly insensible and inorganic; while the cutis vera or the true skin is highly organized, abounding with blood-vessels, nerves, and a great variety of other structures. The cuticle then is an insensible covering or sheath, every where spread out over the exquisitely sensitive cutis in order to defend the latter, and to soften and modify the impressions made upon it by external bodies. Now among all the varieties of the human species, in all climates, both the cuticle and the cutis are colourless, or nearly so; but there is interposed between them the substance already mentioned under the name of the corrus or the rete mucous, on which the colour of the body depends. This substance is not distinguishable as a distinct body in the European and the other white varieties of the human race; at least the most careful anatomists declare that, with all the pains they have taken to discover it, they have been unable to demonstrate its existence. But in the Negro, the Caffre, the Malay, and so on, the existence of this substance as a distinct body is clearly demonstrated. In these tribes it assumes the form of a black or exceedingly dark membrane interposed between the cuticle and the cutis.

This membrane is about as thick as the cuticle itself and even thicker in the Negro, and its colour is darker than the surface next the cutis than in that next the cuticle. By dissection, especially when aided by a slight degree of putrefaction, it is easily separated both from the cuticle and the cutis. This membrane, which we termed the rete mucous, and it is this which is the seat of the peculiar character of the Albino. It is composed of a delicate cellular tissue containing a dark substance on which its colour depends. Every variety of tint with which the human skin is dyed, even that of the Albino, is either red, white, yellow, and an intermediate shade of colour, from the snowy whiteness of the most delicate European female to the deep ebony or jet black of a Gold-coast Negress, depends on the darkness or the lightness of the colouring matter contained in the rete mucous.LoggedIn
animals which exhibit varieties perfectly analogous to those of the human Albino are free from disease, as is familiarly known; the reason is, that the sheep, the rabbit, &c.—for the Leucanthemum constitution occurs both in domestic and in wild animals: it has been observed not only in the sheep, pig, horse, &c. but also in the mouse, ferret, monkey, squirrel, rat, hamster, guinea-pig, mole, common vole, dormouse, field mouse, hedgehog, beaver, bear, camel, buffalo, and ass; and even in the crow, blackbird, canary-bird, partridge, common fowl, and peacock. It is remarkable, however, that it has never been seen in any cold-blooded animal. In all the mammals and birds thus described, the same changes and degrees of the deviation seem to be perfectly analogous to those of the human Albino. The pure whiteness of their skin and other integuments, and the redness of the iris and pupil, mark the same deficiency of colouring matter. A white mouse, for instance, or a rabbit, is capable of bearing the light which has been observed almost universally in the human examples: the animal kept its eyelids closed even in the twilight.

ALBINUS (BERNARD SIEGFRIED), one of the most eminent of the eighteenth century, was born at Frankfort, in the year 1697. He gave early promise of extraordinary ability which he did not disappoint in his ripper years. From his father, who was professor of the practice of medicine in the University of Frankfort, but was generally more famed as a painter than as a doctor, he received the most celebrated school of medicine in Europe, his son imbibed a taste for the art which he afterwards pursued with such splendid success. The position of his father afforded him the advantage of studying from his early years under the most celebrated professors of the science, Rysch, and Rau—and after completing the usual course of education at Leyden at a very early period, he visited France, where he formed an intimate acquaintance with Winslow and Senac. So well did he avail himself of these advantages that he was recommended by Van Swieten to the King of Prussia, who appointed him the professor of medicine at the University of Berlin. He was a laborious and indefatigable dissector, and excelled in making anatomical preparations, and especially in the art of injecting, the mode of performing which he had probably learned from his master Rysch. But the chief merit of the Canadian professor was in the application of painting to the illustration of anatomy. When not occupied in teaching, his hours were devoted to the careful dissection of different parts of the body, the faithful representation of which he secured by engaging the most exquisite artists to discover consist of the skin, the parts of the bones, and the muscles. Edward More, a pupil of Anquetin, and the fine Anatomical Plates of Eustachius. By this means he directed the attention of his contemporaries to what was most valuable in the labours of those who had preceded him in his favourite pursuit. The circumstance mentioned has been observed on this point by publicists and critics; but it is gratifying to observe that in the present day among the cultivators of philosophy, in all its departments, there is no example of such rancorous hostility as was frequent in a former age. (For a list of the works of Albinius, see Watt’s British Biog., vol. i. p. 14. c.)

ALBION, the oldest name by which the island of Great Britain was known to the Greeks and Romans. Great Britain and Ireland were known by the general appellation of the Britannaig Islands, while the former was designated by the name Albion, while the latter by that of Ierne, Journa, or Erin. Caesar does not use the word Albion: his name for England is Britannia. Pliny says (iv. 16), 'the name of the island was Albion, the whole set of islands being called Britannic.' The word Albion is not derived from any Scottish designation of that country; and the word signifies in the Gaelic language white or fair island. The word alb itself is not now in use in the Gaelic, but is probably the same root that we find in the Latin adjective albus, and in the modern word alba, in the north of Scotland.

ALBION, NEW. This name was given by Sir Francis Drake to the extreme province of California and part of the adjoining north-west coast of North America, which he visited in the month of June, 1579. The part of this coast now known as New Albion is less extensive, and is limited, by Humboldt and other modern geographers, to that portion of the coast which is situated west of the mouth of the Columbia river. (See: New Albion.)


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After Drake’s visit, this region remained for a long time unexplored. Cook was there during his third voyage in 1778; but it was not until April, 1795, that the coast was minutely surveyed and accurately described. The part of the country island which was most particularly described by this navigator, was in the neighbourhood of Port Discovery, in the supposed strait of Juan de Fuca, and the position of which is stated by Adamson to have been in 49° 15’ north latitude, and 125° 10’ west longitude. He represents this country as being of a moderate height near to the shore, but bounded on the east by mountains covered with snow, to which the land from the water’s edge rises in a pleasing diversity by hills of gradual ascent, covered with trees and bushes.' (See: New Albion.)

The forest trees, which appeared to grow very luxuriantly, consisted principally of silver pines, the Turamahoe, and Scotch juniper. "The forest is a common dwarf oak, American ash, common hazel, sycamore, sugar maple, mountain and Pennsylvania maple, American alder, and common willow. These trees were for the most part encumbered with a luxuriant growth of underwood. Woodpeckers, were observed about the water-side; and a bird, with light-brown plumage, of the crane or heron species, was frequently seen; its eggs, which were considerably larger
than those of a turkey, were of a bluish cast and had a pleasant taste. These birds, whose bodies were about the size of the largest turkey, were not less than four feet high when standing erect. Some blue and some nearly white herons of the common size were also seen. Very few gazelles were observed, and none of them were troublesome. A small common black snake, a few lizards and frogs, together with a variety of common insects, were the only animals of this description noticed. The productions generally found were iron ore, quartz, agate, common flints, and compounds of silicious, with calcareous, magnesian, and argillaceous earths.

The native inhabitants of the coast are not numerous. They adorn their persons with paint, in the same manner, but not to so great a degree, as those of Nootka, whom they much resemble in their general appearance. Some few of those seen by Vancouver wore dresses made with bark, others were dressed in the skins of animals, of the species usually found in the north-west part of North America, while the greater number were clad in woolen garments, and the whole were made with a considerable degree of neatness. These people further showed their desire of considering their personal appearance by their fashion of wearing the hair, which was generally combed and tied behind.

Brown naked arrows were generally as thick to thirty hands, of the inhabitants of Nootka: they were generally barbed and pointed, sometimes with flint, agate, or bone, but more commonly with thin flat iron. It is remarked as an extraordinary circumstance by Vancouver, that, in their purchasing goods, they are perfectly agreed in refusing to part with them, iron, but not with others. Their bows were all made of yew, and of superior construction. They were strengthened, some with a strip of an elastic hide, others with the skins of serpents, generally adored with the beak of the eagle or other bird. The adhesive property of which is described as being so great that it is impossible to effect a separation between the two substances without destroying both. This cement is not affected by either damp or dry weather. The bow-string is made of the sinews of marine animals.

The inhabitants do not remain long in any one spot. Several deserted villages were seen, the huts being made of a few crossed sticks, which could be covered with mats; and these latter the natives easily carried with them in their migrations.

These people have a curious method of disposing of their dead, by depositing the bodies of adults in caves, and those of children in baskets, which are then suspended between two trees, about twelve feet above the ground. In some of these baskets small squares of birch bark are fastened to those of Nootka. It is probable that the course thus described is followed only with the bodies of persons of consideration among the tribes, as great numbers of skulls, ribs, &c., of human bodies, were seen scattered about; and it seems that some bones were found, which appeared to have been recently deposited in the earth, and slightly covered over; rendering it probable that the bones found on the beach had originally been thus deposited, and had become uncovered by the waves. Here they became engaged in hostilities with the rival monarchy of the Gepid: and in the early stage of this contest, Alboin, then a youth, signalled his courage, strength, and skill in arms, and the prince of the Gepid fell by his hand. After his accession to the Lombard throne, he became enamoured of Rosamond, daughter of Cunomund, king of the Vandals, whom he had slain, and sought her in marriage. Having rejected, he carried her off by force. In war consequence broke out afresh: and the Gepid, supported by a Roman army, were strong enough to compel the restoration of the kingdom of the Vandals. Thereupon, in the renewal of hostilities: he obtained the assistance of the Avars: the Romans abandoned the Gepid to their fate; they were defeated with great slaughter (a. d. 566), and their name and nation passed away. Cunomund fell by the hands of the Avars' chief victor: whose savage temper led him to fashion the skull of the deceased monarch into a drinking-cup, long preserved as a trophy by the Lombard princes.

In the year 568 Alboin led the Lombards into Italy. Norses, the imperial秉位, long the protector and scourge of her northern invaders, is reported to have invited him to this step. Be this as it may, the death of Norses removed the man best qualified to oppose such an enemy; and when Alboin crossed the Julian Alps the whole western half of Italy, to the gates of Rome and Ravenna, without meeting with a man in the field. Milan opened its gates on the 4th of September, 568. Before Pavia he was detailed more than three greater victories; and, in anger he venged on all but the inhabitants of every age and sex to the sword. The taste, he seemed to be inanimate. As he entered the gate his horse fell and could not be raised again from the ground: and the humanity of one of his attendants, who interpreted this accident as a sign sent from Heaven to countermand the intended massacre. Delighted with the situation, he fixed his abode at Pavia, and it remained for some ages the chief city of the Lombard dominions.

By the justice and mildness of his government, Alboin secured the consent of his subjects. He introduced into his dominions the laws of the Visigoths; and, having had not his reign been limited to the short space of three years and a half, he might have mastered the whole peninsula. The conquest of the Lombards was in some set the epoch of the regeneration of the people. Independent principalities, the imperial domains, and provinces of all sides: a principle of life was infused into the country, which had been so long buried in lethargic slumber. The series of monarchs who succeeded Alboin were long distinguished by their prudence, and by making the laws their rule of every action containing its own punishment.

Alboin's life was terminated by domestic treachery. Having drunk deep at a feast with the chief of his countrymen, he called for the cup of victory, the skull of Cunomund, which he had sent the king of the Vandals to be carried to Rosamond, with his request that she would taste the wine, and rejoice with her departed father. The queen obeyed, but she determined on revenge. One evening, when Alboin, oppressed by wine and sleep, had retired to his chamber, she unfastened the king's armour-bearer, after she had herself fastened his sword to the scabbard. Alboin was the best and bravest of the Lombard warriors; but, unarmed and surprised, he fell an easy victim. His valour, generosity, and successes were celebrated in the songs of the German nation even to the age of Charlemagne. Paul Warnefried, De Gestis Langobardorum. — Muratori, — Gibbon, chap. xlv.

AL. DOKAK, the name of an imaginary animal, on which, according to the Mohammedan tradition, the Arabiodolon, the prophet prophesied the world should pass by land and sea through the heavens. It is conceived by them to have been of a middle stature and size, between that of a mule and of an ass, and to have received its name in allusion to the shining white stripe of its fine water discharges itself into the harbour about five miles from its mouth. (Vancouver's Voy.)

ALBOIN, one of those northern princes who established kingdoms in Italy upon the ruins of the Roman empire. He was the son of Audoin, king of the Lombards, (see Lombards) one of the bravest, the most proud, and the most free of the German nations. Tracing their origin from Scandinavia, they were settled, at the time of which we speak, about the middle of the sixteenth century, in Pannonia. Here they became engaged in hostilities with the rival monarchy of the Gepid: and in the early stage of this
from Seville to compel Beresford to raise the siege of Badajoz, and the latter prepared to receive him at Albuera. The allied army consisted of 30,000 infantry (but of these little more than 6000 were British), somewhat above 2000 cavalry, and 38 guns. Soult commanded 19,000 chosen infantry, with 4000 cavalry, and 50 guns. The position of the allies was on a ridge parallel to the river, with the British in the centre above the village, and the Spaniards on the right wing. The French, on the other side of the river, were concealed by the woods. Soult commenced by an attempt to force a bridge leading to the village; but this was only to draw away the attention of the British from the real point of attack. Fifty guns, however, cast the battery at two points, and Peter is for abandoning his lawful wife in order to live with a mistress." In 1335 he was appointed legate, and entrusted with the important mission of the reconquest of the papal states. With a handful of men and an embargo of his plan and jewels, he set out from Avignon. Upon entering Italy, he treated the inhabitants with so prudent a policy, that he gained them over to his side. He obtained a passage through Tuscany, and interested in his favour the republic of Florence. He then entered Spain, having been, by the intervention of Cola Rienzo, whom he brought from Avignon, and by publishing indulgences for the faithful and excommunications against the rebels, caused the Romans to flock to his camp. He entered Montefiascone and Montefalco, and on the very morning of the battle he had mastered the tyrant of Ferno, and reduced to obedience the Malatesti. In 1357 an intrigue raised against him at Avignon made the pope recall him; but the truth being discovered, the order was countermanded, and Albornoz, proceeding in person to face the day, found the French, who had been the most powerful of all the petty tyrants of Romagna, and after a long war placed the pope in possession of their state, not acquired by the old titles of worm-eaten parchments, but by the right of conquest. When Urban V. came to Italy, Albornoz was grievously wounded, and the pope called his legate to give him an account of his administra-
tion. The cardinal ordered a cart loaded with old keys and locks to be brought into the court of the house, and showing it to the pontiff, said, "I have spent all my funds in placing the pope in possession of all the towns and castles, the keys of which I present to you." The pope, sen-
sible of his ungrateful mistrust towards a man who had done so much for him, embraced him cordially, and always after entertained him as the great personage, he had been. By the intervention of Bologna, he gave to that city a new constit-
tution, and at his own expense founded there a college for the Spaniards. This college is composed of a rector, thirty stu-
dents, and four chaplains, all Spaniards; one Portuguese only may be of free birth, but he must have the name of Al-
borno in his nepotism as well as in criminal matters, and all enjoy the same privileges as the nobility. Cardinal Albornoz died at Vi-
terbo, in 1364. The pope felt his loss so deeply, that for the space of three days he would not see any body. The remains of Albornoz were conveyed to Avignon, where Clement VI.

AL-BURZ, [See Elburz.]
of drawings, prints, verses, and other miscellaneous fragments. On the continent the note-book of a tourist, in which he makes on the spot his memorandum of places and occurrences, is often called his album; but such a use of the word is not the one to which we have given it. The

ALBUMEN, from the Latin word albumen, the white of an egg. The peculiar substance designated by this term, forms a constituent principle of organized bodies. It is common to plants and animals; and its essential properties are found to be the same from whichever kingdom of the organized world it is derived.

Vegetable albumen is found in the green foliage of plants in general; in the fresh shoots of trees, in the sap of many plants, in the bitter-almond, the sweet-almond, and the emulsions seeds in general. On the other hand, in the excreta of animals, no albumen is to be found. Though the free albumen in various plants is fermentable, it is impossible to stated what quantity it contains, and still less to determine the form in which it exists.

Albumen is one of the several vegetable substances, into the composition of which nitrogen enters as a component principle.

Albumen exists much more abundantly in animals than in plants. It forms a constituent both of the animal fluids and solids. Of the animal fluids, it forms an essential part of the blood serum: it abounds in the fluid that washes the skin, the interstices of the body, and of the organs they contain, and it exists in large quantity in the watery fluid poured out into these cavities in the disease termed dropsy. In the animal solids it forms the principal part of all membranes: of the skin, of fibrin, the fibres of muscles, and of the organs called glands.

Animal albumen then exists in the animal body in two states, in the fluid and the solid form. The best example of fluid albumen is the white of the egg. The white of egg consists entirely of albumen held in solution in water, and contains with a small quantity of soluble inorganic matter. It can, therefore, nearly pure albumen. In this state it is a thick, opaque, thick, fluid, denser than water, insipid, without odour, mixing readily with cold water, in a large quantity of which it is completely dissolved. Exposed in this fluid form to atmospheric air, it runs rapidly into putrefaction, but if a thin layer of it be exposed to a current of air it dries and is converted into a solid, hard, and transparent substance resembling horn, and in this condition it may be preserved for any length of time without change.

The simple characteristics of albumen is the property it possesses of changing from a fluid to a solid state on the application of heat. This process is termed coagulation. If the white of an egg be exposed to a heat of about 131° of Fahrenheit, white fibres begin to appear in the fluid, which is raised to this temperature; this fluid is converted into a solid mass: if the heat be still further increased to 212°, it dries, shrinks, and assumes the appearance of horn. In proportion as albumen is diluted with water, it requires a higher temperature to coagulate it; but if water be held in solution only the one-thousandth part of its weight of albumen, the water is rendered opaque by heating. Before coagulation albumen is abundantly soluble in cold water; after coagulation it is no longer soluble in water.

But heat is by no means the only agent capable of coagulating albumen. Fluid albumen is changed into a solid by alcohol, and one of the readiest modes of obtaining solid albumen is to agitate white of egg with ten or twelve times its weight of alcohol. The alcohol mixes with the water which held the albumen in solution, and the albumen is precipitated under the form of white filaments.

Albumen is also coagulated by the stronger acids, the sublimate, the nitric, and the nitre; but not by the muriatic acid, the bichloride of mercury, the bichloride of iron, or any of the saline bodies. It is coagulated by the muriate of tin, subcarbonate of lead, muriate of gold, &c.; and so delicate a test of the presence of this substance is the bichloride of mercury, or, as it is commonly called, corrosive sublimate, that if a single drop of a saturated solution of corrosive sublimate be let fall into water containing only the two-thousandth part of albumen, it will occasion a milkyness in the water, and produce a curdy precipitate. If a slight excess of the mercurial solution be added to the albuminous liquid and heat applied, the precipitate which falls on being dried is found to contain in every seven parts, five of albumen.

Galvanism also coagulates albumen. If an albuminous fluid be exposed to the agency of galvanism, pure soda will make its appearance on the surface of the battery, while the albumen will coagulate around that which is in connection with the positive pole of the battery. (See Lessaigne, Annales de Chimie.)

The process of the coagulation of albumen by heat is not clearly understood. When this substance is coagulated by a chemical agent, such as a metallic salt, it is conceived that the albumen is thrown down in consequence of forming an insoluble compound with the substance employed. This is also supposed to be the mode by which acids coagulate it: but when heat is the agent by which coagulation is effected, the operation is conceived to consist in the abstraction of the alkaloid contained in the albumen. According to this account, liquid albumen is supposed to be a solution of solid albumen in alkali; heat abstracts the alkali, and, consequently, the albumen can no longer retain the fluid form. But to this explanation Dr. Roxborough objects that it is proved by direct experiment, that the quantity of alkali in albumen is too minute to retain it in solution, and that the alkali may be neutralized and the albumen still retain its fluid form.

Albumen, like most other animal substances, is composed of carbon, hydrogen, oxygen, and nitrogen. According to the analysis of Gay-Lussac and Thénard, the proportions are Carbon 52.858 Hydrogen 7.78 Oxygen 20.67 Nitrogen 15.55

According to Dr. Prout, the proportions are the following Carbon 50 Hydrogen 7.78 Oxygen 20.67 Nitrogen 15.55

100

Animal albumen, as well as vegetable, furnishes ammonia when decomposed by heat. This fact shows their probable similarity, although vegetable albumen has not been analyzed.

Albumen, from its property of coagulating by heat, is of great use in the clarification of liquids. The albumen, as it is rendered solid by the application of heat, entangles all the substances not held in solution by the fluid, and carries them with it to the bottom in the form of a heavy mass.

But the most interesting application of albumen is its employment as an antidote against one of the most virulent of the mineral poisons. Corrosive sublimate, or bichloride of mercury, is scarcely second in the violence and certainty of its poisonous properties to antimony. For poison, albumen is a sure and effectual antidote. The whole is indebted to Orla, the celebrated Parisian toxicologist, for this discovery. This distinguished man has instituted many experiments by which he has established the fact, of which the following may serve as an example. He gave twelve grains of corrosive sublimate to a small-sized dog; the poison was allowed to act for four minutes, by which time there were unequivocal indications of the commencement of its ordinary effects. The antidote was then administered, the white of eggs being beaten with water; the latter was then given, and several minutes afterwards the animal became apparently free from pain, and in five days was quite well. Another experimentalist gave a dose of the poison to a rabbit; he allowed it to act uncontrolled; the rabbit was dead in seven minutes. He then gave a similar dose to an other rabbit; he administered albumen in the form of white of eggs just as the first indications of unceasing commence, and in this case no serious symptom of any kind ensued. It would seem as the result of several experiments, that albumen is a sure antidote to corrosive sublimate in doses of four grains of corrosive sublimate inomnions. The efficacy of this antidote has been fully established in the human subject. Several cases are on record in which this poison was taken both by accident and design, in which the nature of the case necessitated the immediate administration of the white of eggs; it saved all but a few cases from death, and it was that there was less of all noxious influence. A man took half a draught of corrosive sublimate, and was attacked with the usual symptoms. The white of eggs was immediately and freely administered. The symptoms were at once arrested, and
the patient recovered without sustaining any material inconvenience. This remedy once saved the life of Thénard, the celebrated chemist. While at lecture this gentleman one day inadvertently swallowed, instead of water, a mouthful of a concentrated solution of corrosive sublimate. He instantly perceived the fatal error he had committed; but he was aware of the remedy. He sent immediately for eggs, which he was so fortunate as to procure within the space of five minutes. He ate six of these eggs, and the child, to his great relief, recovered. At the time when he began to take the remedy he had not vomited; neither did vomiting occur at all; consequently the whole of the poison must have been retained, and he sustained no material injury. There cannot be a doubt that this prompt use of the albumen he would inevitably have died.

ALBUMEN, in plants, is the substance which in some seeds is interposed between the embryo and their coat. It varies very much in density, and in other respects, and is often the same plant. In the cotton plant, the coat is the cotton, the milk, the meat being a fluid, uncondensed portion of it; in the coffee-seed, it is the part that is roasted; and in corn, it is that which is ground into flour. The oil of the castor-oil plant, and of the poppy, the aroma of the tincture, and the grease, nutritious substance that forms chocolate, are all the produce of albumen.

This substance in the beginning is of a pulpy nature, and is the matter in which the young embryo first makes its appearance, and is requisite to enable it to grow, but after the embryo, for the nutrition of which it is destined, increases in size, the albumen is gradually absorbed by it, either wholly, as in the turnip, the pea, the bean, and the like; or in part only, the residue being of a consistence varying between softness and meagerness in the poppy, and extreme hardness, as in the date palm. Botanists find its presence in abundance, or its total or almost total absence, a character of very great importance in distinguishing the different tribes of plants.

Among the Indians, the ALCUÉRAS, or, as the Portuguese write his name, AFFONSO ALBUQUEQUE, the greatest of those captains who built the short-lived fabric of Portuguese empire in India, was born at Melinda, in Africa, d. 1432. He was the second son of Gonçalo d'Albuquerque, lord of Viseu, and of a lady of the royal house of Portugal. In his youth he was first esquire to king John II.; but he first becomes well-known to us in the year 1503, when, in conjunction with Francisco Albuquerque, his cousin, or uncle, he conducted a fleet to India, and succeeded in obtaining the rest of the royal gold of Portugal. In the absence of his brother, he was placed by his powerful neighbour, the Zamorin of Calicut. These two cities were situated on the coast of Malabar, both to the south of Bombay, in lat. 9° 57' 30", and 11° 12' 30". E. 76° 51'. S. 6° 51'. In a grant for their services they obtained leave to build a fort at Cochin, which, according to the Portuguese authors, is to be considered as the foundation of their national empire in the East. Francisco Albuquerque was wrecked on his voyage home. Albuquerque reached Lisbon safely, July 16, 1504, and was favourably received by the king, who sent him out to India again, in 1506, in command of a squadron of five ships, composing part of a fleet of sixteen, under the orders of Tristan da Cunha. For a time the generals carried on a prosperous warfare against the Moorsish cities on the eastern coast of Africa. Da Cunha, sailing for India, left Albuquerque to command in the Arabian seas; who, weary of the petty piratical warfare in which he had hitherto been engaged, conceived the project of taking the small but important city of Moçambique, in lat. 15° 20', of the Persian Gulf, which, being admirably situated for commerce, was at that time one of the great emporiums of the East. Accordingly he appeared before Ormuz, Sept. 25, 1507, having already in his course reduced most of the chief trading cities between the Red Sea and the Persian Gulf. The terms of his message to the prince whose territory he invaded are worthy of attention. He came, he said, not to bring war, but peace,—peace, however, to be obtained only by paying tribute to the king of Portugal, instead of the king of Persia; but then the Portuguese monarch was so great a lord, that it was better to be his vassal than to command empires. Zeifadin, king of Ormuz, was a youth, and the government was really in the hands of a eunuch, named Cogit-Atar, who understood the advantage of being subject to the Portuguese prince, and said that their demands were impudent and unreasonable. But their cannon proved cogent arguments; and he was obliged to submit, after the shipping and part of the town had been burnt. Cogt-Atar was deeply mortified when he saw what a handful of men he had yielded. He confected a revolt, which proved successful. Albuquerque was compelled to evacuate the place; and after an unsuccessful attempt to reduce it by famine, returned to the island of Socotra, off Cape Guarda-falso, leaving his chief purpose unaccomplished. He was again joined by Albuquerque, who sailed from the Malabar coast, in 1508. He carried out a secret commission, authorizing him to supersede Don Francisco d'Almeida, governor of the Indies, when the period of his commission should have expired. On arriving at Cananor he informed Albuquerque; but the latter, judging from this, was judicious against him by the reports of some officers, who had treacherously sailed away from his squadron, and thereby caused his failure at Ormuz, received him very coldly, declined either to surrender the government or to accept his services in any subordinate capacity, and finally threw him into prison, where he remained three months. The arrival of the Grand Marshal of Portugal, with a powerful fleet, restored him to liberty. Almeida returned home; and Albuquerque was acknowledged General and Commander-in-Chief in India.

This fleet was intended to act against the Zamorin of Calicut, whose long-continued hostility had made him very obnoxious to the Portuguese. The Marshal entreated Albuquerque to join in the great expedition; but Albuquerque reluctantly consented; but only by halves. The fleet accordingly was divided into two squadrons. A ve- teran officer augured ill from this arrangement, and said that there was little good to be expected from one body with two generals. His prediction was verified by the actions of the two squadrons, whose division had gained the start in landing, and foothold, courage, induced the Marshal to venture too far with a small number of followers, in hopes of gaining possession of the Zamorin's palace. He succeeded in this; but Albuquerque, envied, and some of his principal officers. Albuquerque, in attempting to rescue him, was desperately wounded; and the Portuguese were forced to return to their vessels with considerable loss, having done much injury to the town of Malacca.

The commission of Albuquerque was far less extensive than that of his predecessors in the Indian government, which had extended from the Cape of Good Hope to the farthest regions of India. The court of Portugal now dis- cerned this misfortune, and a demand was made for the admirals and others, who were sent again to the Indies to improve the condition of the nation's trade.
Albuquerque had been sincere in his proposed intention of sailing for the Red Sea. His ambition, and jealous care of his position as 'the first and greatest monarch;' and the change seems too important to be so hastily made, had it not been contemplated beforehand. In fine, it was resolved to sail to Goa; and that rich and prosperous city fell into his hands without resistance. His stern energy was quickly judged from the rapidity with which his enterprises were conducted. He appeared before Calicut January 2, 1510, and though severely wounded there, he entered Goa the 17th February following. But he was unable to hold it. That town, in his command, was given to the Portuguese. He was followed with the same severity: he had been compelled to give up the fort of Aguel, for his discretion, and established the power of the Portuguese there. Albuquerque's difficulties were increased, and in great measure produced, by the discontent, mutinous conduct, and almost treachery, of his officers. At last he was reduced to the alternative of abandoning the citadel and taking to his ships, or suffering the river to be blocked up, and all chance of escape lost. He chose the former. But the bar being impassable during the south-west monsoon, which had already set in, he was obliged to remain in the harbour, hisunce ability to his place, and exposed to all the evils of famine. His energy and the bravery of his troops triumphed over their embarrassments; and they maintained their ground, though not without much loss and suffering, till the navigation was open, and they might be left to their fate. 1510. The history of this siege of Goa is full of interest, and will repay the trouble of perusing it at length.

In the course of the year strong reinforcements were sent out from Portugal, and, at the same time, Lemos was recalled, in his command over the Indies. The same autumn Albuquerque attacked Goa a second time, and carried it by storm, Nov. 25. Early in the next year he meditated new conquests. A detachment of the fleet which had been sent out in the preceding year, was especially ordered to join the forces of Albuquerque under Vasconcellos. Albuquerque, as he had done before in the case of Lemos, detained this squadron for his own use; by fair means while he could; but when Vasconcellos expressed his intention to resign the command to him, and surrendered himself, he hesitated to appoint him to that post, or to permit his doing so, under pain of imprisonment to himself, and death to all inferior officers under his command. Vasconcellos, undeterred by these threats, set sail, but he was stopped by Albuquerque, who was himself, with three of his officers, put to death. It is possible that the letter of Albuquerque's commission might justify him in exacting obedience to his own orders from all persons in his government, even to the disobedience of orders received from his superior. The whole action—a just or selfish act—was highly illustrative of his character. Looking to the circumstances, there can be no doubt but that the motive for it was not the maintenance of discipline, but a resolution to monopolize every opportunity of acquiring fame and power in India. As soon as Vasconcellos was removed, Albuquerque sailed himself on the expedition against Malacca. (lat. 2° 12', long. 102° 5', 12.',) which lighthouse he put off on different pretexts, and, with some difficulty, captured the town, which was garrisoned to plunder. Immense wealth was obtained. The fifth of this booty, which was immense, was invested in 100,000 gold cruzadoes, exclusive of naval and military stores, among which 3000 cannon were said to have been found. In this expedition his troops amounted only to 6000; yet the Malabar prince is said to have had 30,000 men under arms. Albuquerque had it much at heart to establish the Portuguese power as firmly at Malacca as at Goa. He built a citadel, coined money, established a new system of law and punishment, and arbitrary authority of the commander-in-chief. He received and sent embassies to the kings of Siam, Pegu, and other neighbouring princes, who were deeply impressed by the rapid growth of the power of these European strangers. After remaining at Malacca near a year, he set sail for Goa. On his voyage he encountered a violent storm; his ship was wrecked, and he himself, washed into the sea, narrowly escaped with his life. He reached Cochin with the scattered remains of his squadron at the end of February, 1512. His first object was to proceed to the relief of Goa, which in his absence was hand pressed by Idalcan. But the Portuguese force in India was never large; and owing to the casualities of war and shipwreck, and the loss of the troops left in garrison at Malacca, he was obliged to wait for the arrival of the annual reinforcements before he could bring his favourite city effectual help. Moreover he found much to be remedied, his presence was requisite to check the extortion of the principal Portuguese, and the scandalous lives of all, had very much alienated the good will of that friendly city. Having obviated these evils as well as he could, he sailed for Goa, September 13, 1512. He was overtaken with the news of a Portuguese force, much larger than usual, consisted of twenty ships, 1000 Portuguese, and 400 Malabar troops; (Barros, Decad, II. lib. vii, cap. 9.) but he reached neither honour nor profit by this voyage. Repulsed at Aden, he entered the Red sea, and took the island of Eryx, or Ormuz, 1513. He found his enemies scattered on their way, but he experienced much hardship and danger from heat, want, and difficulty of navigation, and returned to India without striking a blow.

His last enterprise was a second attempt uponOrmuz, in which he subsequently succeeded. He set sail in 1517 without receiving arms, having only a few effects of terror and negotiation; and the place remained in the hands of the Portuguese till it was taken from them in 1622, by the English and Shah Abbas. (See Abbas.) Albuquerque, after his first failure, vowed never to cut his heard till he had reconquered the island, and made it rise to the same level as Goa. No thought of money, profits, or conquest, were it till he could knot it to his girdle. Soon after the accomplishment of this favourite wish he fell sick, and was obliged to return to Goa. At the mouth of the Gulph he met a vessel bearing despatches from Europe. They signified his recall; that Vasconcelos was appointed governor of the archipelago. His illness, aggravated by vexation, proved fatal. He died December 16, 1515, in his 63rd year. His body was conveyed to Goa, and buried in the church of Our Lady, which he had built; and in future years—a touching testimony to the uprightness of his government—Moors and Indians repaired to his tomb, as to that of a father, to implore redress from the injustice and tyranny of his successors. His bones, more than fifty years after his death, were transported to Portugal, and deposited in the golden claims to the name of a great man. To his country he rendered most important service: and if, in the irresponsibility of a distant command, he presumed sometimes to contravene or neglect the orders of his king, he did not do so from a motive, than the love of glory, and ever had in view the profit of his country, and next to that, his own honour. As a public servant he was scrupulously honest; as governor of an obedient people, scrupulously just; though his temper was austere, and his speech often abrupt, he was not without some generosity. His views as a statesman were enlarged and judicious, his skill great as a general, his courage as a soldier daring to rashness. On the other hand, where territory was to be gained to his country, or renown to himself, he was stopped by no considerations of right or wrong. The attack on Malacca admits of justification; but the capture of Ormuz and Goa were provoked by no acts of hostility, and can be sanctioned by no law but that of the longest sword. His character is well exemplified in a scheme which he is said to
have proposed to the Emperor of Ethiopia for destroying the commerce of Egypt by turning the course of the Nile into the Red Sea, and thus converting that fruitful land into a barren desert. The project is called grand by historians, it is certainly great; but the very idea of such an impossible undertaking throws some discredit upon the General's knowledge. It would, however, be of no use to either of them or to him, that there would have been any moral guilt in blotting out from the earth a fertile, populous, and extensive country, to gratify the grasping thirst of inordinate ambition, and to make the king of the Euphrates a despot of the world.

The second decal of Barros's History of the Portuguese Conquests in the East is entirely occupied by the transactions of which we have here given a short sketch, from the sailing of Da Cunha and Albuquerque to the death of Albuquerque. Those who do not read Portuguese may consult Mafiei, Historia Indica; Laftauf, Hist. des Conquêtes des Portu- guais dans le Nouveau Monde; and the Modern Universal History.

ALBURNUM, in plants, is that part of the stem of trees which timber-traders call saprod. It is the mostly formed, unchangeable wood lying immediately below the bark, and is always of a very light colour. It is the principal channel through which the crude sap is conveyed from the roots to the leaves. It is not included in the sapwood part in all exogenous trees. [See Age or Trees.] It consists of little besides vegetable tissue; in which respect it differs from heartwood or duramen, which is vegetable tissue combined with solid secretions, the nature of which varies with species, season, and age. According to the circumstances, heartwood is so much more durable than sapwood; for all vegetable tissue is in itself equally perishable, and it only ceases to be so in consequence of the presence of secretions of a less destructible character.

The parts of plants have the alburnum and heartwood distinctly separated, there are others, technically called whitewooded trees, which consist of nothing but alburnum. This arises from their not forming any solid secretions which can give durability to the central parts; hence all such trees are comparatively useless, and are generally unfit for any but temporary purposes.

ALBY, or ALBI, a town in France, the capital of the department of the Tarn, and upon the left or south bank of the river, which gives name to the department. It is an arch-episcopal see, and perhaps the worst built of all places of similar rank in France. It is not, however, without objects worthy of notice. The cathedral is remarkable for boldness and elegance; the interior is adorned with old paintings; it has some tombs and porches in the outer wall, and it contains a silver shrine, in which were said to be preserved the relics of St. Clair, the first bishop of the see. The revenue of the archbishop is computed at about 20,000 francs (less than 500£); his palace is on the banks of the river Tarn, and contains a picture gallery, and a fine prospect. The village of Châteauneuf, on the side towards Montauban (the west), forms a suburb of the town. Albi possesses a fine promenade planted with trees, called La Lice, just outside the city, formed by a terrace, and commanding a view of the adjacent country. The number of inhabitants is about 11,000; they have some manufactures of linen, cotton, hats, cord, and wax-lights. A library of 11,000 volumes, a museum of natural history, and a society of rural economy, trade, and statistics, contribute to the improvement of the place. The city is situated a little above 75° 30' long. from Greenwich.

The arrangement of Albi contains 566 square miles, 100,590 acres, of which 75,040 are arable. The town is 35.50 miles south of Paris: 43° 55' N. lat., 2° 8' E. long.

ALCAIDE or ALCAYDE, a Spanish word derived from the Arabic haid, from the verb hidia, which means to govern. The alcaide was formerly the governor of a fortress or a castle, and also the keeper of a jail. This name is frequently mistaken by foreigners for that of alcalde. The offices of these two functionaries, however, differ very widely, as the one is a military officer, and the other a civil magistrate. (Covarrubias. Diccionario de la Academia.)

ALCALA', a very common name in the southern part of Spain, where the empire of the Arabs was of the longest duration. It is derived from the Arabic El-Calas, which means a castle.

ALCALA' DE HENARES, a town of Spain, in New Castle, situated in a fine plain on the river Narros or Henares, whence it derives its name. About a mile from its present position, its Roman and collegiate church of San Juan de los Serranes, the town and some small remains of the Roman city was situated in the year 1000 B.C., and surrounded by a wall. It is also called Alcalá de San Justo, on account of the saint of this name having suffered martyrdom there under the pretor Dacianus. The Moors possessed it until the beginning of the twelfth century, when it was conquered by Don Bernardo, Archbishop of Toledo. It was celebrated for its university, which was founded in 1510, and richly endowed by Cardinal Ximenes de Cisneros. The plan was taken from that of Paris, and embraced the study of divinity, law, astronomy, and languages. It was in this university, and at the expense of its founder, that the famous
Polyglot Bible was edited. The acquisition of seven He-
brew manuscripts alone cost 7000 gold crowns, and the most
eminent philologists of the age contributed their talent
to this undertaking. At the distance of 2000 feet from the
city, stands a bridge upon the river Henares, from which
the towers and domes of thirty-eight churches and nineteen
colleges present a magnificent appearance. The Archbishop
of Toledo has in this town a superb palace ornamented by
the most costly marbles. About a mile from the city, the
cathedral is a fine gothic building in imitation of that of
Toledo. In the college of St. Ildefonso is seen the sepulchre
of Cardinal jimenez, wrought in alaalter, with his reclining
statue upon it, by Domenico Fonturino. In the cathedral
and in its porches are found, by order of Arco, Sevilla, Car
ducho, Carlucho, Ribera, and Gonzales. The environs of
Alcala are pleasant and productive. Its climate is mild but
rather cold in winter, owing to the want of
heat in the region of the city, which is about 2000
feet above the level of the sea. This city is the birth-place
of the Emperor Ferdinand, the brother of Charles V., of
Cervantes, of the poet Figueroa, of the historian Solis, of
the famous divine Teodora Beza, and several others.

The population is stated to be 40,000. Alcala is in 40° 29'
N. lat. and about 3° 25' W. long. See Miliano, Dic.
Marana.

ALCALA' LA REAL, a town in the province of Jaen,
on the Guadalote. The district around is productive in
wine and fruit; it has an elevation of more than 2700
feet above the level of the sea, and is the highest elevation
between the Guadalquivir and Grenada. This territory separ-
ates the small streams that run southward to the Genil from
the Guadalquivir, and the first. The town has an abbey,
two churches, a convent, and a hospital: its
population is stated to be 9000. It lies about eighteen miles
W. S.W. from Jaen. General Sebastiani defeated the Spa-
nish army under Aranzaga near Alcala, (January 26, 1810,) in
consequence of which Franz Xaver was appointed to the con-
queror.

(Napier's Peninsular War, iii. 115.)

ALCALDE, in Spain, is a judge appointed by the
government, or elected by the towns to administer justice within
the limits of its jurisdiction. There is a combination of the
 Arabic El-Cadi, which means judge or governor, or
according to Alcalá, from Cubid, which comes from the root
calado, to preside. There are several denominations of alcal-
des. The Alcalde de alcaldia is a judge appointed by the
government for the town district, to whom the parties may
appeal from the decision of the Alcaldes pedanios or justices
of the peace. The Alcaldes de casa y Corte, is a bench of
judges, who singly or jointly try all criminals within the court
and twenty miles from it, or sixty, in cases of robbery. From
the sentences of these alcaldes de casa, appeals go to their tribunal.
When the king travelled, one of these
alcaldes was formerly obliged to assist the mayor-domo in
fixing the price of provisions on the road. In the chancel-
lertas of Valladolid and Granada the criminal judges are
called Alcaldes de aumen or to distinguish them from the civil
ones called oidores. The limit of their respective jurisdic-
tion is the Tagus, i.e. those of Valladolid take cognizance
of all criminal cases on their side of the Tagus, and those
of Granada on the other.

The Alcalde Mayor is a judge appointed by the king or
by the lord of the town to act as an assessor to the Alcaldes
or Corregidores, who are not men of the law. The Alcaldes
Pedanios are elected by the people yearly; they preside at their
district, and are known as Notaries in Spain. The parish-
officers are also called Alcaldes, and are distin-
guished by appellations expressing their office, such as
Alcaldes de Barrio, or parish, de Calle, de the street, de Noche,
of the night, because they patrolled and watched during the
night. They have no jury in Spain, all the judges give
the verdict and pronounce the sentence. It is, however,
worthy of observation, that in the fuero of Toledo granted in
1083, it was ordered that all the cases should be tried by
the book of the judges, in the presence of ten individuals of the
most worthy and most wise of the city elected annually, who
were always to sit at court with the judge. A sort of jury
existed formerly in the Baelearic islands, but so beneficent
an institution no longer remains in any part of the peninsula.

(D'Ohsson, Gali. Arab. States.)

ALCAMO, a city of Sicily, situated in a district of the
same name in the province of Mazara. The city is built
in a beautiful spot under Mount Bonifacio, about twenty-
five miles S.W. from Palermo, and a league from the Gulf
of Castellaro a Mare; it is considered healthy, and is said
to contain 12,000 inhabitants. During the short period
that the Arabs possessed it, all its courts and gardens were
adorned with beds of flowers; but they only remain are the
three representatives to the Sicilian House of Commons, two
of whom were chosen for the district and one for the city.
The first Italian who attempted to write poetry in the lingua
volgare was a native of Alcamo; some fragments of his
early poems are to be found in Bertrand. Among the ancient
Italians under the title of 'Ciuol d' Alcamo.' Ciullo lived and
died about the end of the twelfth century.

ALCANTARA (signifying in Arabic al bridge), a for-
tified town in Spanish Estremadura, on the southern bank
of the Tagus. The Tagus flows through the province of
about 6° 53' long. It lies 55 Spanish leagues (about 230 miles)
by the road W.S.W. from Madrid, but in a straight line not
so much as 170 miles. The number of inhabitants is about
5200. Under the Romans, Alcantara bore the name of Norba
Casauru, and was distinguished by a beautiful bridge or
arches over the Tagus, built in the reign of Trajan. When
the Arabians became masters of this part of the peninsula,
the Roman name was exchanged for Alcantarat al-seif, (the
Emperor), to distinguish it from the Bridge of
Sarcore, and hence the modern name. The position of
the town upon the Tagus has always made it important in a
military view, and in the year 1809, (June 10,) during the
French war, the bridge was destroyed under an order of the
French general of the day. When this order was acting on the offensive,
and a British detachment was stationed at Alcantara to break off the
communication, should the French attempt a passage. Soon after,
the state of affairs changed, the allied army began to advance,
and the French had no opportunity to recover the detri-
ments of the former. Aware of the order under which the
British officer was prepared to act, for some error this
order had not been countermanded, they made a false at-
tack, which produced the effect they desired, and thus was
the bridge destroyed. It was afterwards repaired, and
remained in good order for about a century and a half.

The town has been for many years a place of
importance in the history of Spain and Portugal, and
was also an Alcantara in Brazil.

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ALCARRAZAS. [See COOLER.]

ALCARRIA, a district in Spain on the northern boun-
daries of New Castle. It is bounded on the east by Molina,
on the south by the mountains of Cuenc a and La Mancha, on the west by the territory of Alcañiz de Hener a, and by the mountains of Cogolludo, Jaraque and Siguenza on the north and north-west. According to the signification of its name, Alcacer means, from its form, that of a cluster of farmhouses, its population consists of a multitude of small villages, the largest of which are Guadalajar a, Huete, Brihuega, and Cogolludo. The territory is mountainous, but very productive, through the industry of its inhabitants. It is supplied by many rivers and springs, and while the valleys are covered with nutritious herbs, which supply with food the numerous flocks of Merino sheep, that in the summer months leave the scorched plains of Extremadura to seek the green and rich pasturages of the mountains of Castile. The shepherds of that part of Spain are persuaded that the fineness of the Merino wool would be lost if they were kept in the same place all the year round, and thus they make their cattle travel to the south in winter, and back to the north again in Spring, from which they are called *ganados transhumantes* or travelling cattle. The valleys of Alcarria as well as its mountains abound in flower-plants on which the bees feed, that produce the famed Alcarrian honey. The meat, game, and fish are of exquisite flavour. There are many woods of Alcarria, which are, by far, richer and happier than their neighbours. It is true that very few large proprietors are found, but every one has some landed property, which he himself cultivates, and mendicity is here unknown. They are simple, industrious, and robust. The main village is very fair; but it is not pleasing to the ground, and the women preside over the household concerns, and spin hemp and flax, with which they provide their families with clothing. Besides the brooks which spring from the mountains of Alcarria, the Nares or Henera, the Tagus, the Tajuña and Guadarrama give birth to many small streams, and in this district many springs and baths of mineral waters: the best known are those of Trillo and Sacedon. Its industry is confined to some manufactures of paper. (Mifano, Diccionario de Villa y Pueblo de España, vol. i.)

**ALCEDO (Linnaeus),** king-fisher, a genus of birds of which the characteristics are,—the bill long, straight, quadrangular, thick, and pointed; the tongue short, fleshy, flat, and slightly arrow-shaped; the beak: the upper mandible at the side of the base of the bill running obliquely, and nearly closed by a naked membrane; the legs with the shank (tarsus) short; the feet with three toes forward, the outer joined to the middle one as far as the second joint; the innermost toe broad. The wings are short, and the tail is broad at the tip. The first and second quills nearly equal, but these are shorter than the third, which is the longest in the wing.

There is only one species of king-fisher indigenous to Britain, namely the *Alcedo atthis* (Linnaeus), also called *Alcedo atthis*, *Alnocestes*, or *Aterius.*—not to mention several other variations,—and commonly pronounced *Auster or Auster.* and by some of the inhabitants, in Camden's time, *Ouldcestere,* a parish and market town in the western part of the county of Warwick, situated at the confluence of the Arrow and the Ane, from which last it takes its name. It is 103 miles N.W. from London, and 16 miles W.S.W. from War-}

wick. Alcester is a place of great antiquity, and the name would indicate that it had been a Roman station; a supposition which is confirmed by the great numbers of Roman coins and other remains which have been found on the spot. It has been, and is held by some to be the ancient Mandesmedum; but this is more probably Mandes, on the Marques, north-east of the same county. Alcester has been generally supposed to be the Alanna of Richard of Cirencester. It stands on the old Roman way, formerly called Ykmidillon, and now known as the Chesterton road.

An abbey was founded here in 1140 by Ralph Boteler of Ockney on a piece of ground about half a mile to the north of the town, surrounded by the Arrow on the north and east, and by a moat on the other two sides. It was hence called the Abbey of the Oates, and of the Abbey of the Knights of the Order of the Garter. It was a considerable establishment, and was probably more important than the Abbotures, north-east of the same county. Alcester has been generally supposed to be the Alanna of Richard of Cirencester. It stands on the old Roman way, formerly called Ykmidillon, and now known as the Chesterton road.

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### Notes

* **Guadiana:** A river in southwestern Europe, formed by the confluence of the Tagus and the Guadiana rivers, which flows through Portugal and Spain, and continues as the Guadiana River into Portugal.

* **Brihuega:** A town in central Spain, situated in the province of Guadalajara, known for its medieval architecture.

* **Villages of Brihuega:** The villages of Brihuega are known for their strong culture and identity, which is reflected in their traditional dances, music, and cuisine.

* **The Abbey of Alcester:** The Abbey of Alcester was founded in 1140 by Ralph Boteler of Ockney. It was a significant establishment and was probably more important than the Abbey of the Oates, and of the Abbey of the Knights of the Order of the Garter.

* **The Abbey of the Oates:** The Abbey of the Oates was founded in 1140. It was a considerable establishment and was probably more important than the Abbey of Alcester.
Hermes Trismegistus is generally mentioned as one of the earliest alchemists; but the writings bearing his name are not genuine. In 1562, Salmon, in his Clavis Alchymiae, published a translation of the Tractatus Aureus attributed to Hermes, with the works of some other alchemists. The translation is accompanied with notes which rival the original in absurdity. The word *harmatic*, still included in the dictionary of the sciences. Geber was a Basle Arabian physician who lived in the seventh century, is one of the earliest alchemists whose works are extant; but some doubt of their genuineness is entertained. Dr. Thomson (History, p. 15) indicates, that these were the sciences which lie at the bottom of alchemy were implicitly adopted by him, he does not attempt to make gold artificially, nor admit the possibility of converting the baser metals into gold. In Salomon's work, however, the following passage is translated from Geber's *Alchemia Sol*. Whatever metal is radically citrine, and brings to equality and cleanliness, it makes gold of it; from whence we discern, that copper may be transmuted into gold by artifices, &c. &c.

Geber also treats of the Medicine, Tincture, Elixir, or Stone of the Philosophers in general. Dr. Johnson supposes that the word *gibberish*, so often written *gibberish*, was originally applied to the language of Geber and his tribe; many are of opinion that Gencon would be the nearest equivalent to his language. Although it is also apparent that Geber was an alchemist in the most comprehensive sense of the word; and although his works abound with the most absurd and mystical phrasings, yet his chemical labours were distinguished by observation of the facts. He described and depicted various furnaces, crucibles, alembics, aludels, and other useful chemical apparatus, of which he was probably the inventor; and he treats of distillation, sublimation, calcination, and various other chemical operations.

Omitting any mention of less celebrated alchemists, we proceed to notice Albert Groot, usually called Albertus Magnus, a German, who was born at Bollstaedt in 1282. He wrote all the sciences usually taught at that age, and his works were published at Leyden in 1651, in twenty-one folio volumes, among which are seven tracts on alchemy. According to Dr. Thomson, Albertus, in his treatise *De Alchemia*, gives an account of all chemical substances known in his time; was well acquainted with chemical apparatus, and with the methods of purifying the precious metals. He imagined that the metals were composed of mercury and sulphur, and accounts for the diversity of them, by the difference in the proportion of their constituents; purity, impurity, transmutation, and repulsion. Thomas Aquinas is asserted to have been the pupil of Albert; he wrote three works on alchemy which are said to be always obscure, and often unintelligible; the word *amalgam*, signifying a compound of mercury and sulphur, is derived from his name. He was alive in his time, in his writings; which contain also some other terms, still used in chemistry.

The alchemist next to be mentioned is Raymond Lully, who was born at Majorca in 1235. He was a very singular person; he travelled to various kingdoms to preach Christianity, and died in 1315, on his passage from Africa, where he had been on this service.

Lully is stated to have been the scholar and the friend of Roger Bacon; his reputation as an alchemist was very high, and his works are generally respected, amounting to nineteen. He obtained nitric acid by distilling a mixture of nitre and green vitriol, observed its power of acting upon metals generally, and of dissolving gold when mixed with alkali. He also treated of the compounds and mixtures of the other chemical compounds, and their action upon each other. Roger Bacon, frequently called Friar Bacon, a Franciscan monk, was born at Helchester, in Somersetshire, in 1214. Notwithstanding the great learning and scientific experiments of Bacon, he was deeply imbued with the mystery of alchemy; this is the more remarkable, because he exposes the absurdity of believing in magic, necromancy, or charms. His chemical and alchemical writings amount to two hundred and fifty, of which may be seen in Dr. Thomson's *History of Chemistry*, vol. i. p. 35. Bacon appears to have been acquainted with the composition of gunpowder, and, by some, he is thought to be the inventor of it. It was, however, probably introduced into Spain by the Moors; and, Bacon, from his acquaintance with Arabian might have acquired information of its composition from some writing in that language. Bacon has hinted at his knowledge of the gunpowder as *Secrets Operum Artis et Naturae de Nullitate Magiae*, in the following enigmatical sentence: 'Sed tamen salis petro Luau. Vor. Vir Can Virtet sulphur; et sic facias tonirum est persuerationem, et sic neutrum.' Salome, the sulphur being distinctly named, we have only to suppose charcoal to be concealed under the enigmatical terms quoted, and then all the substances contained in gunpowder are mentioned as capable of producing thunder and lightning or of producing property, that it is not to be wondered at, in a barbarous age, that one who was skilled in so many sciences should be accused of witchcraft; we accordingly find, that Bacon was imprisoned on this charge, and narrowly escaped starvation, or being burnt as a magician. The real ground of his offence seems to be that he had been his exposure of the immorality of the priesthood. He died either in 1284 or 1285; his *Opus Majus*, edited by Dr. Jebb in 1733, and the *Epistola*, already quoted, are the works of this author, most worthy of perusal. In the list of Bacon's works already referred to, are several professing on alchemy. Dr. Salmon has translated one which is not among them, called *Radiz Mundi*; another work on alchemy, called *Speculium Alchymicum*, mentioned in the last about them. In the *Alchymic*, is quoted, that the numbers 18 and 19 were given the philosopher's stone, and that the philosopher's stone was not only an alchemist, but an astrologer and magician. He is said to have been born, in 1210, at Villeneuve, a village of Provence: he was educated at Barcelona, where he was obliged to leave in consequence of the judicia. He died at Barcelona, in 1275. When he left Barcelona, he went to Paris, and travelled through Italy; and afterwards taught in the university of Montpellier. He acquired high reputation as a physician; and was well skilled in several languages and in the sciences of the time.

He wrote about twenty different works, some of which are professedly on alchemy: the book entitled *Rosaireum* is probably the most curious, it being intended as a compendium of the alchemy of the day. The second part of this work, which professes to treat of the philosophers' stone, is stated to be quite unintelligible. Like his predecessors, he considered mercury as a constituent of metals; and professed that he could increase the philosopher's stone at pleasure. He died in the year 1315, on his way to visit Pope Clement V., who lay sick at Avignon. Raymond Lully and Arnoldus de Villa Nova are stated to have inspired men of all ranks with a taste for alchemy. Pope John XXII. was one of them; he professed and declared the mysteries of the alchemists. He lived at Montpellier, and was a student of Raymond Lully; he died in 1318. At the beginning of his book, that he had made two hundred ingots of gold, each weighing a hundred pounds.

The fourteenth century produced a considerable number of alchemists,—as Nicholas Flammel, Pierre le Bon of Lombrige, the French Pope, for his merit in this science. He was a physician, the disciple and friend of Lully. John Daunez and Richard, in England, practised and wrote upon hermetic philosophy. The work attributed to Flammel generally reckoned spurious. The fifteenth century was more productive in adepts even than the preceding. About 1408 flourished John Isaac Hollandus, and his countryman of the same name, who were either brothers or a father and son. They were born in the village of Stolk, in Holland. Few circumstances are known respecting them. They wrote several treatises on chemistry, which are remarkable for clearness and precision, considering the time at which they appeared. In the opinion of Boverheave, they were very distinguished chemists. Paracelsus and, subsequently, Boyle repeated many of the experiments of Hollandus as if they were known about then. However, principally to the transmutation of metals. In the *Proceedings* of the Royal Society, in 1674, Robert Boyle, in his *Paracelsus*. In his *Alchymia*. This work is replete with the same sort of unintelligible jargon which usually abounds in such productions. He wrote another work, in rughed rhyme, called the *Compound of Alchemy*, which was dedicated to Edward the Fourth. Basil Valentine, a native of Basle in Switzerland, was born in Germany, was born at the latter end of the fourteenth century; and, with the exception of Paracelsus, he was, perhaps, the most famous professor of the hermetic philosophy; but he possessed, at the same time, very considerable merit as a chemical experimenter, and was much occupied in the pre-
paration of chemical medicines. He first introduced anti-
mony into medicine: his work on this subject is entitled
*Triumphus-aeugen Antimonitis*, which was translated from
the German into Latin, under the title of *Cassius Triumphatus Antimonitis*,
by Kerkeringius, in 1671. In this book he
strongly advocates the chemical sect; and treats the prac-
tice and theories of his opponents with great severity,
because they attempt to prepare a hole in nature—
that they know not whether they be hot or dry, black or white;
they only know them as written in their books, and seek
after nothing but money. Labour is tedious to them, and
they commit all to chance; they have no consciences, and
could be found at the bottom of the crucible; they write long
scrolls of prescriptions, and the apothecary thumps
their medicine in his mortar, and health out of the patient.'

Basil Valentine was of opinion that the metals are com-
ponents of salt, sulphur, and mercury, and that the philos-
ophers' stone was composed of these same ingredients. He
was acquainted with many of the properties of several metals,
and with the effects they were capable of producing by their
chemical agency. He was, however, more particularly
informed with respect to antimony, and knew most of the
preparations of it which at present exist in the pharmaco-
epias of Europe. Twenty-three different publications have
been ascribed to Basil Valentine, but it is uncertain how
many of them were written by him. His works contain the
final results made of gases, nitrations, sulphurations, and
acids, with intelligible directions for preparing them; and
he was acquainted with a very considerable number of me-
tallic salts and compounds.

We have now mentioned the principal writers on alchemy.
Their rank to time, various authors, who appear to have been rather believers in the possibility of the transmutation of metals than pretenders to have accomplished it. A list of alchemists, from Hermes, who is represented as having flourished nearly 2000 years before Christ, to the time of Maupertius, in 1739, may be seen in the *Encyclopédie* : it is compiled from
Dufrenoy's *Histoire de la Philosophie Hermétique*. This
list contains names which are more familiar as chemists than as adepts; such, for example, as Paracelsus (who
applied phosphorus, not to the making of gold, but to the
preparing of medicines), Libavius, Van Helmont, Glauber, and Kunkel.

To these believers in the art may be added Bergmann, a
celebrated chemist of very late date, who, after summing up
the evidence for and against the possibility and probability of
transmutation, observes, respecting the numerous relations
that have been given by writers of apparent veracity, that,
although most of them are deceptive, and many uncertain,
some of them have their experiments must be suffered,
and we reject all historical evidence, we must allow them entitled
to confidence.'

The later Peter Woelfe, who was a Fellow of the Royal
Society, and died in 1695, is reported to have been a believer in
the alchemical ways without the other opinions on account of the apparatus which bears his name,
but which had been previously described by Glauber.

The last person, at least in this country, who professed to
convert mercury into silver and gold, was Dr. Price of
Guilder: he is said to have convinced some persons of the
possibility of the transmutation; his experiments were to
have been repeated before competent judges, but he pre-
vailed detection and exposure by destroying himself with
large doses of poison in 1734.

For an account of that mysterious substance, the philos-
ophers' stone, by which the wonders of transmutation were
worked, and a detail of the process for preparing it, given in
the words of an adept, we refer the reader to Dr. Thomson's
*History of Alchemy*.

Dr. Thomson states, that the philosophers' stone, prepared
by the elaborate process above referred to, could hardly have been anything else than an *amalgam of gold* ;
and 'there is no doubt,' he adds, 'that the amalgam was
converted into melted lead or tin, and afterwards cupelled,
would leave a portion of gold; all the gold, of course,
that existed previously in the amalgam. It might, therefore,
have been employed by impostors to persuade the ignorant
that it was a different metal. Hence it is highly probable that
what was called the amalgam, could not be ignorant that it
contained gold.'

In the *Memoirs of the Academy of Sciences for 1772*, M. Geoffroy published an account of the various modes in
which the frauds of the adepts were carried on ; some of
these we shall mention. He observes that instead of the
mineral substances which they pretended to transmute,
they put oxide (china) of gold or silver at the bottom of
the crucible, the mixture being covered with some pow-
dered crucible and gum-water, or wax, so that it might
look like the bottom of the crucible. On other occasions,
they added a piece of charcoal, to which they applied powder
of sand or silver, and closed the hole with wax;
or they soaked charcoal in a solution of these metals, and
threw the charcoal, when powdered, upon the material to
be transmuted. They used, also, small pieces of wood, and
rolled them at the bottom of the crucible, to make it look
as if they had stopped it with fine sawdust of the same wood,
which, on burning, left the metal in the crucible. Some-
times they whitened gold with mercury, and made it pass
for silver or tin; and the gold, when melted, was exhibited as
gold obtained by transmutation. They had a solution of a
nitrate of silver, or of muriate of gold, or an amalgam
of gold and silver, which, being adroitly introduced into the
crucible, furnished the necessary quantity of metal. A
common exhibition was to dip nails into a liquid, and to take
them out apparently half converted into gold: these nails
consisted of one-half iron, nearly soldered to the other half,
which was gold, and covered with something to conceal the
colour, which the liquor removed. Sometimes they had
drugs which would turn gold into silver. A yellow cake
of stone was whitened with mercury, dipped into some trans-
muted liquid, and then heated; the mercury being dissi-
pated, the gold portion of the metal appeared.

Bergmann, in his *Essays*, vol. iii. p. 93 (*History of Che-
mary during the Middle Ages*), gives a number of cases in which gold had been supposed to be formed by the
use of the philosopher's stone. They were unquestionably
the results of some of the abovementioned tricks; but Berg-
mann states it as his opinion, that some accounts of transmu-
tation are entitled to a greater degree of credit than others.
' For, doubtless,' he adds, 'if a person, who has no
faith in the changes of alchemy, should obtain by chance
a small piece of the philosophers' stone, and, on making the
experiment, procure a portion of gold heavier than the stone, will it not be difficult to explain in
what manner he was liable to be deceived?' Before
the difficulty is required to be explained, the fact must be placed
on incontrovertible evidence.

The question has sometimes been asked, whether the
labours of the adepts have been favourable or otherwise to
the progress of chemical science? This question we should
be inclined to answer in the negative, on account of the dis-
pute into which the jargon of their writings and the frauds
they have thereby committed have involved it. Without the
authors, but the science which they abused. On this sub-
ject, Dr. Thomson, however, remarks (*History*, p. 30), ' As
the alchemists were assiduous workmen—as they mixed all
the metals, salts, &c., with which they were acquainted, in
compounds of various kinds, in order to expose the opinion
of the action of heat in close vessels, their labours were
occasionally repaid by the discovery of new substances, pos-
sessed of much greater activity than any with which they
were previously acquainted. In this way they were led to
the discovery of sulphuric, nitric, and muriatic acids. These,
when known, were made to act upon the metals; solutions
of the metals were obtained, and this gradually led to the
knowledge of various metalline salts and preparations, which
were introduced into chemist's conceptions of materia medica.
Thus the alchemists, by their absurd pursuits, gradually
formed a collection of facts, which led ultimately to the estab-
lishment of scientific chemistry. It may be also stated in
favor of the alchemists, that phosphorus was discovered
by an adept of the name of Brandt, at Hamburg, in 1677
this he procured from urine, while searching for some sub-
stance capable of transmuting silver into gold.'

Gibbon (*Decline and Fall*, vol. ii. p. 137), speaking of
alchemy, says, 'The human heart, when in the state of
purest innocence, when unclouded by the excitement of
human passion, was it studied in China as in Europe, with
equal eagerness, and with equal success. The dark-
ness of the middle ages insured a favourable reception to
every tale of wonder; and the revival of learning gave
new convictions of the possibility of transmutation. For a
long period, the study of alchemy was considered of the
utmost importance, under the name of science. But, when
under the name of commerce and industry.'
ALCIBIADES, the son of Cleinias, was one of the most distinguished statesmen and generals of Athens, during the early period of its glory. Of war. Descended on both sides from the most illustrious families of his country, born to the inheritance of great wealth, endowed with extraordinary beauty of person, and with mental qualifications no less brilliant, it seemed evident from his early youth that he would exert no small influence on the counsels and the fortunes of Athens. This marked him out to Socrates, as one on whom his moral influence might be exerted with beneficial results. The faults of Alcibiades were those of a spoilt child of fortune: he was fickle, selish, and extravagant. But these were concealed, not concealed his nobler qualities. Passionately fond of show and splendour, a frequent victor in the Olympic games, and possessed of a more criminal notoriety as a favoured suffer amongst the most dignified matrons of Athens, he never lost sight of more truly objects of ambition; and he met the profered friendship of Socrates with eagerness, as the surest means of acquiring that mental cultivation which at Athens was the best, though not the only key to political power. The path that was soon acquired over his wayward pupil that influence which he seems to have exercised over all who came within his circle; and the close intimacy which arose between these opposite characters, was cemented by a singular reciprocity of benefits. In a battle at Alcilas, Polycrates, Socrates, Alcibiades, and the latter repaid the obligation by a similar service at the battle of Delium. But the influence of Socrates was insufficient in this case to work a permanent change of character; and the political life of Alcibiades proves that he was not profited much by the moral instructions of his master.

He became an orphan at an early age, and was placed under the wardship of his uncle Pericles. After the death of Pericles Alcibiades being then a child, but Cleon succeeded to a divided influence in the state; but with increasing years, Alcibiades was naturally regarded as one likely to take a leading part in politics, and he was not slow to assert the influence which seemed his due. At first he was confined to cultivate the local interests of Athens, between which, and his own family, an ancient hereditary friendship had existed; but the Spartans, whose national character was utterly alien from that of the impetuous and volatile Athenian, chose rather to connect themselves with Nicias. Alcibiades rapidly changed his politics, when he found that, in that connexon, he could not be the leading man, and became as violent in enmity, as he might have been in friendship to Sparta, had his advances been more favourably received.

In the opportunity of thwarting the wishes of Sparta, and his first prominent appearance in public life, occurred in the year 421 B.C. A truce had been concluded between Sparta and Athens; but considerable difficulty arose in executing the treaty; much dissatisfaction arose in consequence at Athens; and it seemed a good opportunity to engage the people in a connexion with Argos, always jealous of Sparta, and then at the head of a strong confederacy of Peloponnesian states. Ambassadors arrived from both these cities at the same time: the Argians to solicit Athens to join their alliance: the Spartans with ample power to settle all disputed points: for it was of first-rate importance to them to prevent a junction between Athens and Argos. The prospect of accommodation with Sparta was far from satisfying the Athenians: much dissatisfaction arose in consequence at Athens; and it seemed a good opportunity to engage the people in a connexion with Argos, always jealous of Sparta, and then at the head of a strong confederacy of Peloponnesian states. Alcibiades proposed, therefore, to send an armament to protect the Egestans, and to take any further measures which might strengthen the Athenian interest in Sicily. The measure was in vain proposed by Nicias, and a decree passed, that a powerful fleet should be despatched; and the armament which sailed from the Peloponnesus c. 415, under the joint command of Nicias, Lamachus, and Alcibiades, was the most splendid that ever left a Grecian port. The expedition was an example of the power that private expense was spared to make the equipment as complete as possible. There sailed from Athens 100 ships, containing, besides their crews, 2200 heavy-armed Athenian infantry, 800 hoplites, 300 light-armed soldiers, 200 slingers, 500 bowmen, 4000 cavalry, 5000 men in warlike costume, and 5000 heavy armed soldiers, besides slingers and bowmen, was made up by the allies and subject-states. But on arriving in Sicily, it was found (as probably Alcibiades well knew) that little help could be had from the Egestans. Nicias was for returning, Lamachus for laying siege at once to Syracuse. Alcibiades proposed to enter into negotiation with all the cities except Syracuse and Selinus, in the hope of securing a powerful party in the island, before commencing hostilities with those two states. This plan was finally adopted, and had the object of securing the inhabitants of Sicily, and the expedition might perhaps have terminated gloriously for Athens. But party-strife at home led to his recall, and of the two generals who remained, Lamachus, a mere soldier, Nicias timid, and disinclined to the whole business, neither was assigned the general of the expedition. But we must return a little in the order of time, to explain the cause of Alcibiades' recall.

It was usual to place a square block of stone, surmounted by a herm, at the head of every house, and the whole city was surmounted by the Acolhion agora, a relic of ancient times in which the presence of the god was expected to guard the entrance from violence. Of these Hermas, as they were called, from the Greek name of the god, the greater part were defaced in the time of the Peloponnesian war. At the time of the expedition to Sicily, they were burnt through the city. The act was generally believed to beode ill to the important expedition to Sicily, then in preparation; it was even thought to indicate a design to overthrow the democracy. High rewards were offered for any information.
concerning the guilty persons; and it came to light that a party of intoxicated young men had been concerned in the mutiny of a few statues some time before. Alcibiades was implicated in this charge, which, however, was en-
nost to disturb the act which had given such alarming effect and 1offence. But this, and his other irregularities, gave a colour to the accusation, which his enemies laboured to fix on him, of having contrived the mutiny of the Mercenaries. He came forward freely and eagerly to court an immediate trial, and, as has been adopted, having made a command of high importance with such a charge hanging over his head. But the oligarchical party at present pos-
essed the ear of the people, and it did not suit their pur-
purpose either to grant this reasonable request, or to deprive his adversaries of assassination. The act was accordingly not made, and a vote was obtained that he should proceed on the voyage. But the agitation was kept up, and rose to an extraordinary height during his absence, and the influence of the wealthy power of Athens. He had already a decree of recall of which we have spoken. Alcibiades obeyed the summons, and quitted the fleet in his own trireme; but believing that his death was resolved, he disappeared at Thurium in Italy, in company with other accused persons, and was said to give himself up to the Lacedaemonians.

By the injury which he did to his country after his exile, Alcibiades proved how much he might have done for her benefit, had the command of her yet unbroken resources been continued in his hands. Restrainted by no principle of patriotism, feeling that, very correctly, no party hesitated to call on foreign arms to strengthen their own hands, he yet felt it necessary, in offering his services and counsels to Sparta, to make some apology for this step, and, as given by Thucydides, it is a very lame one:—I love my country, and wish her well; and this is why I came to Lacedaemon for command by a Spartan general was sent to Syracuse; and in consequence of their timely aid the besieging force was totally destroyed. He also advised attacking the Athenians more vigorously at home, and at his suggestion Decræa, a town only a few miles of Athens, was fortified and permanently occupied by a Lacedaemonian garrison. Hostile and injurious as this conduct was, his professions of patriotism probably were so far sincere, that he was actuated by no love for Sparta, and no hatred for Athens. As a man of rank, and in his own person, he held power and influence, and could with ease have re-

It was the general belief of Greece, that the maritime supremacy of Athens was utterly destroyed by the ruin of the Sicilian armament. The Ionian cities, which had felt the harshness of her command, and for the most part con-
The Persian satraps, or govern-
ors of provinces, on the coast of the Ægean, were also eager to crush a power which, in addition to old grudges, maintained against the barbarians the integrity and inde-
pendence of many valuable Greek cities, which otherwise would have been offering allegiance to a new and inter-

In the annual change of Spartan magistrates at the end of the year, those who had been most closely connected with Alcibiades went out of office, and were succeeded by the party of Agis, one of the reigning kings, who had personal reasons for looking on the Athenian refugee with no friendly eye. [See Aegilau.] The connexion with Persia was utterly repugnant to the principles of Lycurgus's in-
stitutions, the term of life of the Persian was highly objectionable; and in addition to those reasons for disliking the course of policy suggested by Alcibiades, there was ground to suppose that he had been so ready to ruin his country, would not scruple to betray the interests of Athens, and that there was a bungling daz-
tainty that he would betray them if the direction of affairs were taken out of his hands. To prevent this, recourse was had to a measure not uncommon in Spartan counsels, and the Spartan general in Asia received instructions to have the alarm of the death of Alcibiades sent. By this time the foreign Alcibiades left the camp, and repaired to Tissaphernes. Prob-
bly it was his aim from the first to establish an in-
dependent interest with the satrap, so as to make himself a channel which should turn Persian gold at pleasure into the treasury of Sparta or Athens, and thus obtain sufficient consequence to prescribe to either party the terms on which his services might be purchased. It was with this view that he recommended to the satrap a line of policy, which advanced Sparta's interests, to the exclusion of contending parties. By the ruin of Athens his services would become useless to Sparta; by the relieving Athens from the fear of Sparta his restoration to his home would become hopeless.

The exertions of Athens, ever since the fatal expedition to Sicily, had been wonderful, and her success propor-
tionate; but they had nearly drained her treasury, and it seemed impossible to hold out much longer against Sparta, backed by the wealth of Persia. It was probably the reason, therefore, why the statesman, who was so shrewdly and induced him to hold out hope of an alliance with Per-
sia, on terms which a few years sooner would have been rejected with scorn. These were, his own restoration, con-

The negotiation was commenced with the citizens in the Athenian army, it was resolved to send delegates to Athens, to ac-

The superintendence in reconciling the people to the policy, and in raising money, the commissioners was sent out to treat with Alcibiades and Tissaphernes. But whether the former thought the revolu-

The revolution was accomplished. The supreme authority was vested in a body of five thousand select citizens, and a council of four hundred was appointed to supersede the old council of five hundred. The council was nominated, but not the select body. No one dared to complain, for the practice of secret murder was carried to a frightful extent, and those who did not favour the govern-

In their first measures was to recall Alcibiades, and appoint him their general. In this he was assisted by his friends. At Athens had been dissolved, the citizens in the army as-

The ordinary oligarchy, by whom Chios, Erythrae, Clisthenes, Teos, and Miletus were induced to revolt from Athens, and a treaty, by no means honourable to Sparta, was concluded with Tissap-

They were suspected, and with good reason, of a plot to deliver the city into the hands of the Peloponnesians; a cry was
growth to uphold the authority of the five thousand against the four hundred; the supreme authority was vested in the former body, who were appointed to be taken from such citizens upon the muster-roll of the heavy-armed foot as were then in Athens; and one of its first acts was to decree the restoration of Alcibiades, and all who had abstained from themselves from Athens on account of the mutiny of the Mercenaries. This revolution and counter-revolution were comprised in the year 411, four years after the recall and condemnation of Alcibiades.

The promises of Persian assistance, which Alcibiades had made so confidently, were not fulfilled. Tissaphernes had learnt so much from his wily counsellor, that he was as unwilling to break entirely with the Spartans, as formerly with the Athenians. But the admirals of Chersonea, seconded by Thrasybulus and Thrasyllus, soon brightened the prospects of the Athenians. At Cynossema (411) the Peloponnesian fleet was defeated; at Archips, in the same year, a further success was obtained; and Cyrus (410) still more brilliant victory was gained, in which every ship of the Peloponnesians was taken or destroyed. In the two following years a train of equally important successes marked the ability with which the Athenian affairs were conducted. Chares, Byzantium, and the whole Hellespont and Propontis, were restored to the alliance, and thus the control of the Euxine, and the power of levy- ing duties on all ships passing the straits, a very lucrative branch of revenue, was recovered. Alcibiades had hitherto abhorred the name of Athens, but when the decree against him had been reversed for four years. He now probably thought that his brilliant successes ensured a favourable reception, and he led home his victorious armament in 407. He was received with distinguished favour, elected commander-in-chief, and with a new and remoter prosperity, a greater power than those belonging to the office of strategos, and soon found an opportunity of gratifying the people, by conducting the annual procession from Athens to Eleusis, under safeguard of the army, which had never ventured to traverse the territory of the Acropolis, since the establishment of a Laconian garrison in Decelea.

After staying four months in Athens, he returned to the scene of action. The Athenians seem to have thought that he could command success at will, and grew angry that no brilliant success immediately waited on his arms. To defeat at Notium, where his second in command gave battle during his absence, contrary to his commands, completed their alienation. He was superseded, and the command vested in his brother. 70,000 were not to be taken against him, but he evidently thought it would be unsafe to return to Athens, and retired from the fleet to the Thracian Chersonese, where he had large possessions. Here the history of his public life ends, and of his future history few certain facts are recorded. He was assassinated in the Chersonese in 405, and endeavoured to prevent the defeat of Egospotami, which he foresaw from the negligence and incompetence of the Athenian commander; but his interference failed. Alcibiades was taken in the following spring, and Alcibiades, thinking himself no longer safe in the Chersonese, retired into Bithynia, with the intention, it is said by Plutarch, of repairing, like Themistocles, to the Persian court, to request assistance in restoring the independence of Athens. During his abs;e in Asia, his house was surrounded and set on fire by a body of armed men. They dared neither enter the house, nor await the assault of Alcibiades, supported only by his servants, but overwhelmed him with missile weapons. He appears to have died in 404, being then at least forty-four years of age.

The intellectual eminence and moral depravity of Alcibiades are alike placed beyond the reach of doubt. His conduct however subsequent to his recall seems to have been unexceptionable; and the gratitude of his countrymen was justly punished by the issue of the war. The rashness and petulance of his youth were tempered by experience, and his measures appear to have been equally vigorous, and prudently considerate in execution. Singly gifted with the faculty of adapting himself to all men, it was observed that, when at Sparta, he equalled the Spartans in austerity of manners; and as it is said by Plutarch, to have been materially indebted to his powers of pleasing in society, which were such, that 'no man was of so sullen a nature but he would make him merry, nor so churlish but he would make him gentle.' Had he been suffered to retain the direction of the counsels of Athens, there can be no doubt but that the temporary fall of that city would have been long delayed, and a strong probability that the event of the Peloponnesian war would have been altogether different. (Thucydides; Plutarch, Life of Alcibiades.)

ALCOHOL. This word is probably of Arabic origin, and is the chemical name of what is sometimes termed ardent spirit. It is the fluid composed of the more volatile portion of wine, and carbon, not obtainable by direct chemical action, but produced by the vinous fermentation, during which the elements separated from combination re-unite in new proportions to form it. Alcohol is the intoxicating principle of beer, wine, brandy, etc., and is to the utmost limit of its activity subjected to distillation, the alcohol and a considerable quantity of water are vaporized and condensed together. The distilled products have different names and properties according to the substances yielding them: thus, brandy is obtained from the fermented and distilled juice of the grape; rum from that of the sugar-cane; whiskey, and what is termed spirit of wine, are usually obtained from barley, which is generally malted previously to fermentation.

On account of the chemical affinity existing between alcohol and water, it is impossible to purify the former free from the latter by simple distillation, though frequently repeated; the specific gravity of the product is never less than 0·825, and the rectified spirit of wine of commerce and of the London distillers is specified as 0·825. It will be more particularly mentioned under Fermentation, that sugar, during its operation, is decomposed, and that its elements, which are the same as those of alcohol, combine to form two new compounds, viz., alcohol, the principal product, and carbonic acid, which is mostly evolved in the state of gas. Sugar is composed of one atom or equivalent of each of its constituent elements, and when it is fermented three atoms appear to be decomposed; the whole of the hydrogen taking part in the decomposition of the carbon, and one third of the oxygen in the decomposed sugar, they unite to form alcohol; while the remaining atom of carbon and two atoms of oxygen combine and yield carbonic acid; the annexed illustration will, perhaps, render these changes more intelligible:

According to this statement it is evident that alcohol is constituted of three atoms of hydrogen 1 X 3 = 3 two atoms of carbon 6 X 2 = 12 one atom of oxygen = 8 atomic weight = 23

The methods by which this result was obtained, will be stated presently; and it is to be observed, that this is the composition of what is sometimes termed absolute alcohol, that is, perfectly free from water; and various methods of procuring it in this state have been proposed. According to M. Sommering, the water may be entirely separated from alcohol by the following process: put the spirit into an ox's bladder coated with singed glass, and expose it to a temperature of 105° to 120°; the interior of the bladder is moistened by the water of the spirit, and whilst the exterior coat dries, fresh portions of water continue to penetrate the bladder and to evaporate from its surface, while but little of the alcohol escapes into the air. Spirit put into a vessel closed and tied over with bladder suffers a similar evaporation of the water, and concentration of the alcohol. Geiger and Planetai assert, however, that the remaining alcohol still retains three per cent. of water. Pajot Descharmes proposed to separate a flat vessel beside fragments of chloride of calcium under a closed receiver; the air contained in this vessel becomes loaded with the vapour rising from the spirituous liquor, the salt combines with it, and the alcohol is gradually concentrated; some, however, is lost, being vaporized and condensed with the water. Berzelius, Traité de Chimie, t. vi. 448.

Dr. Graham proposes a process upon a similar principle, viz., of placing a shallow vessel of spirit over another containing coarsely powdered lime, under a Bell glass, upon the plate of an air-pump; the air is exhausted till the alcohol begins to boil, and the lime absorbs the water only of the
vapour which rises. If sulphuric acid be substituted for lime, then both the water and spirit evaporate and are totally absorbed. *Edin. Phil. Trans.,* 1919.

Although these are curious processes, yet they are scarcely applicable on an extensive scale. The best methods depend upon adding to the spirit some substance which has affinity for the water, and none or but little for the alcohol; thus carbonates of potash is a delicate salt, and has consequently great affinity for water, but unlike most salts of this description, it has no affinity for alcohol, and is totally insoluble in it. When then dry carbonate of potash in powder is put into rectified spirit of wine of specific gravity 0.835, the water which the latter contains dissolves the salt, and the dense solution, on which the alcohol floats, not, however, quite free from water, for when separated and distilled, its specific gravity is reduced only to 0.815, and therefore it retains about 5 per cent. of water.

Causative potash, having still greater affinity for water than the carbonate, has been recommended to be substituted for it; but it appears to alter the properties of the alcohol to a certain extent. Lime also has been used; it is to be powdered, mixed with the spirit, and put into a stopped bottle and occasionally shaken for three or four days; after which the clear liquor is to be poured off and cautiously distilled. Chloride of calcium, (sometimes called dry muriate of lime,) which has been melted so as to render it free from water, forms a transparent salt, an exceedingly purer than most substances in separating water from alcohol. Mix equal weights of spirit and pieces of the fused chloride in a stopped bottle; when the salt is dissolved, pour off the clear solution into a distilling apparatus, and continue the operation until the product is clear. When the spirit employed. If the distillation be properly conducted, the alcohol obtained is perfectly free from water, and has the following properties. It is a limpid, colourless liquid, of an agreeable smell, and a heavy, cold touch. Its specific gravity is 0.7942 at 59°. It has never been frozen, although exposed by Mr. Walker of Oxford to 91° below zero, or 123° below the freezing point of water. It is extremely volatile, producing considerable cold during evaporation. Its heat is proportional to its purity. Heat expands alcohol in a greater degree than it does water, for 100,000 volumes become 104,168 by being heated from 32° to 100°; whereas an equal bulk of water heated to the same degree is increased only to 106,908. Under the average atmospheric pressure, 00 40 grains of alcohol are evaporated by the vacuum of the air-pump, ebullition occurs at 60° and even below it. In becoming vapour, alcohol absorbs only 0.436 of the heat required to evaporate an equal weight of water; and, according to Gay-Lussac, *Ann. de Chim. et de Phys.*, Vol. iii. p. 9, 1840, the heat of evaporation of alcohol compared with that of atmospheric air, is as 1613 to 1000. When the vapour of alcohol is strongly heated, as by being passed through a red hot porcelain tube, it is decomposed, and the hydrogen unites with the oxide of carbon, and a small quantity of charcoal. Alcohol, and the vapour arising from it, are extremely inflammable; it burns with a lambent flame, the colour of which depends upon the strength of the alcohol; the blue tint prevails when it is strong, and the yellow when weak. Although the flame of alcohol yields but little light, its heat is intense; it burns without any smoke, and the only products of the combustion, under common circumstances, are water and carbonic acid. When, however, alcohol is burned in the lamp without flame, in the dark, with a mixture of sulphur and potassium, and the lamp is afterwards heated, carbonic acid is also produced. It has been called lampic acid, and appears to contain resins matter, to which some of its peculiar properties are owing. There are several substances which communicate the property of obtaining the flame of alcohol: the oxalates and tartrates of most of the carbonaceous acids, the metallic carbonates and oxides salts impart green, barytic salts yellow, and the salts of strontia an intense and beautiful red colour.

Alcohol may be fired by the electric spark, which when passed through a mass of the vapour of alcohol and oxygen, causes it to take fire and explode violently. The vapour of alcohol requires three times its volume of oxygen gas to be perfectly burned, and it then yields water and twice its volume of carbonic acid gas; theoretically, 23 parts of alcohol react with 27 parts of oxygen; but, according to Saussure a larger quantity is obtained.

At low temperatures, alcohol suffers but little change by exposure to the air; the portion which does not evaporate is rendered weaker by attracting water, and it absorbs at the same time some air. According to Saussure, alcohol and water take up similar proportions of oxygen and nitrogen, but the former fluid dissolves 0.1653 of its volume of oxygen, while water takes up only 0.065; it is on this account that there is always a slight disengagement of gas when these liquids are mixed, part of the oxygen contained in the spirit being expelled by the water.

Alcohol has great affinity for, and readily mixes with water in all proportions, and during their combination heat is excited; if, for example, equal measures of water and of alcohol of specific gravity 0.825, both at 59°, be suddenly mixed, the temperature is raised to 70°. This proportion of water, when cooled exceeds its calculated density; if, however, the alcohol be weak, then, although heat is excited, the mean density is diminished.

The following table, by Gay-Lussac, shows the quantity of absolute alcohol in mixtures of alcohol and water of different densities, at 59°.

<table>
<thead>
<tr>
<th>Alcohol</th>
<th>Specific Gravity</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>0.7947</td>
</tr>
<tr>
<td>95</td>
<td>0.8037</td>
</tr>
<tr>
<td>90</td>
<td>0.8127</td>
</tr>
<tr>
<td>85</td>
<td>0.8217</td>
</tr>
<tr>
<td>80</td>
<td>0.8307</td>
</tr>
<tr>
<td>75</td>
<td>0.8397</td>
</tr>
<tr>
<td>70</td>
<td>0.8487</td>
</tr>
<tr>
<td>65</td>
<td>0.8577</td>
</tr>
<tr>
<td>60</td>
<td>0.8667</td>
</tr>
<tr>
<td>55</td>
<td>0.8757</td>
</tr>
<tr>
<td>50</td>
<td>0.8847</td>
</tr>
<tr>
<td>45</td>
<td>0.8937</td>
</tr>
<tr>
<td>40</td>
<td>0.9027</td>
</tr>
<tr>
<td>35</td>
<td>0.9117</td>
</tr>
<tr>
<td>30</td>
<td>0.9207</td>
</tr>
<tr>
<td>25</td>
<td>0.9297</td>
</tr>
<tr>
<td>20</td>
<td>0.9387</td>
</tr>
<tr>
<td>15</td>
<td>0.9477</td>
</tr>
<tr>
<td>10</td>
<td>0.9567</td>
</tr>
</tbody>
</table>

The solvent power of alcohol is great; and it has been long known and extensively applied in various processes. Alcohol, as heat, like water, it combines with bodies in definite proportions; these compounds are termed *alcoates*; not many of them have been formed, and they were obtained simply by dissolving the salts constituting their bases, and previously raising the temperature of alcohol, with the assistance of heat. On cooling, the alcoates were deposited in the solid state; the crystallization was generally confused, but in some cases regular forms appeared. The crystals are transparent, soft, and easily fusible by heat in their alcohol of crystallization; their formation is prevented by the presence of a small quantity of water. Chloride of calcium forms an alcoate consisting of 2 atoms of the salt and 7 of alcohol; nitrate of magnesia 1 atom salt + 9 atoms alcohol; alcoate of nitrate of lime consists of 3 atoms salt and 8 atoms alcohol. Several calcium salts were also converted into alcoates and analysed by Dr. Graham; the alcohol of some alcoates is retained with so great force of affinity as not to be expelled at a temperature of 400° to 500°.

Alcohol is capable of dissolving the resins, and many similar bodies, upon which water has no action; hence its use in varnish-making. With the fixed oils, except castor oil, it does not readily unite; but it dissolves the essential oils and camphor with great facility, and hence its use in pharmacy and perfumery. Some substances which are soluble in water are precipitated from it by alcohol—gum, for example; while, on the other hand, water precipitates resinous bodies from solution in alcohol. Alcohol combines with the elements sulphur and oxygen, and with the earths or their carbonates: it dissolves sugar, soap, the oxalic, tartaric, gallic, benzoic, and some other acids. Alcohol is largely used in the preparation of various kinds of ether, as already described. The results of its action on the phosphoric acid are thus, by varying the proportions, we may procure sulphuric acid, ether, oil of wine, or olefiant gas. As it remains fluid at the lowest temperatures, it is advantageously employed in filling thermometers, in experiments on its physical properties, etc. Its septic properties are great, and hence its use in preserving anatomical preparations; on account of its ready inflammability, the purity, and the intense heat of its flame, it is conveniently, but not economically, employed in chemical lamps, usually termed spirit lamps.

It readily dissolves ammoniacal gas; and as the caustic alkalis, potash and soda, are taken up in large quantity by alcohol, and as it does not dissolve their usual impurities, the solution, by distillation, yields these alkalis in a state.
of great purity. In chemical investigations it is frequently employed to separate various salts, both of which are soluble in water, and only one in alcohol: thus sea-water contains both alcohol and sea-salt, was at one time considered only to be alcohol, but it is now known that it contains other substances also. This test is frequently employed in the laboratory, as it offers a ready method of separation.

Although we have mentioned the composition of alcohol, we have not yet stated the modes in which the analyses have been performed. Sansœur (Nicollet’s Journal, xxi.) passed the vapour of alcohol through a red-hot porcelain tube, terminating in a glass tube, six feet long, and surrounded by ice: all the products were carefully collected and analyzed; the result was, that 100 parts of alcohol consist of

<table>
<thead>
<tr>
<th></th>
<th>13:31</th>
<th>51:98</th>
<th>34:32</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbon</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oxygen</td>
<td></td>
<td></td>
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</tbody>
</table>

100

A compound of 3 atoms of hydrogen, 2 of carbon, and 1 atom of oxygen, already stated as the atomic constitution of alcohol, on the authority of the abovementioned chemists, would give, in 100 parts,

<table>
<thead>
<tr>
<th></th>
<th>13:04</th>
<th>52:37</th>
<th>34:91</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbon</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oxygen</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It will further appear by calculation, that the vapour of alcohol is equivalent to a compound of one volume of aqueous vapour and one volume of olefiant gas, condensed into one volume.

ALCORAN, or ALKORAN. [See Koran.]

ALCOVE. This term is found in most of the modern European languages, and is similarly applied throughout to a recess in a room intended for a bed, or in which a bed may be placed. It is not however, necessarily restricted to this meaning; and in England, where such recesses are not so common in bed-chambers as they are in some other countries, and particularly in Spain and France, alcove is applied to a similar recess in a room of any kind, and yet more commonly to an ornamental covered garden-seat. What, indeed, in an ecclesiastical or public civil structure would be denominated a tribune, or an apsis, is in domestic edifices called an alcove.

This term is originally from the Arabic language, in which it means, simply, the cave, hollow, or recess; and it passed into the other European languages through the Spanish, which acquired it during the occupation of a part of Spain by the Arabs.

ALCOVIN, or, as he called himself in Latin, Flaccus Albinus, was one of the most learned persons of the eighth century. He appears to have been born about the year 733, and probably in the city of York or the neighbourho[od, though some authorities make him a native of Scotland. He tells us himself, he received his education at York, where he had successively for his masters Egbert and Elbert, who were afterwards successively archbishops of that see. He there acquired a knowledge of the Latin language, and some acquaintance also, it would appear, with the Greek and the Hebrew. He afterwards became himself master of the school, and taught with much reputation. He was also appointed keeper of the library which Egbert had founded in the cathedral; of the contents of which he has given us a minute and curious account in one of his poems. Being equally eminent for piety as for learning, he was likewise ordained a deacon of the cathedral; and we may mention here, that through modesty, as is stated, he never afterwards would accept of any higher rank in the priesthood. Having been sent by Elbert’s successor, Embalde, to Rome to procure for him the Palladium, Alcinus on his return passed through Parma, where the Emperor Charlemagne then was. At the invitation of the emperor he consented, as soon as he should have executed his mission, to come to France; and accordingly, in the same year, (768,) he proceeded to that country. Soon after his arrival, his patron bestowed upon him the abbey of Ferrières in the Gâtinois, and of St. Loup at Troyes, and the little monastery of St. Josee in Ponthieu.

But the principal occupation of Alcinus was as a public preacher and writer of orations, which he dedicated to the circle of human learning. In this capacity he was frequently honoured with the attendance at his lessons of the emperor himself, his children, and the lords of the court. The place where he principally taught was, probably, Aix-la-Chapelle, which was then the chief residence of the emperor. The Pons Alcinus thus established by Alcinus is considered by French antiquaries as the germ from which the University of Paris originated; and the example and exertions of this foreigner were undoubtedly mainly instrumental in rekindling in the country the fire extinguished by the barbarian incursions and literature. Much of Alcinus’ time was also occupied in theological controversy, and other labours connected with his clerical calling. In 796, on the death of Ithier, abbot of St. Martin of Tours, the emperor gave him that abbot also; and some time after, having obtained leave of retirement, he established a school here, which soon became greatly celebrated. In his old age Alcinus gave himself up almost exclusively to theological studies; and besides composing many treatises in that department, copied with his own hand the Tetragrammaton, and produced a Latin version of the Old Testament, introducing numerous corrections as he proceeded. This edition came to be looked upon as a standard, and many manuscripts were made from it. There is still to be seen in the library of the Fathers of the Oratory of St. Philip of Neri, at Rome, a noble, and probably genuine, as some verses written on it state, a copy given by Alcinus to Charlemagne. Alcinus died on the 19th of May, 804, and was buried in the church of St. Martin. Over his remains was inscribed, in the form of a plate of copper, an epitaph composed by himself, of which the following are the lines:

Quod nunc es, fueram, famos in urbe, vistor;
Et quod nunc ego sum, tuae futurus eris.

Of the writings of Alcinus several have been printed separately, both in France and England; but a particular account of his collected works was that published at Paris in 1617, by André Duchêne, (Andreas Quercetanus,) in one volume, folio. A much more complete edition, however, appeared at Ratisbon, in two volumes, folio, in 1777, under the superintendence of the Bavarian Academy. From this edition there were printed in 1796, in two volumes, 4to., containing 1,300 leaves, which contain many pieces which had never before been published, but which were formerly published in manuscript in the libraries of France, England, and Italy.

ALCYONE (Savigny), a group of marine production somewhat similar to the Alcyonids, but more distinctly belonging to animated nature. We are indebted to Pallais, Guettard, Savigny, Spix, and Lamouroux, for what is known of their singular structure. Both in the fresh and the dried state they are of much greater specific gravity than any other sponges, and have a similar, firm, yellowish, rough, and polished surface. They vary much in form, some being in a shapeless mass or crust, and others lobed, fingered, branched, or with rounded mushroom-like projections. The interior substance is spongy or corky, surrounded by tube-like rays inclosed in a rigid membrane.

The tentacles or arms (tentacula) of the animal inhabiting these productions are eight or more, which distinguishes them from the complex Ascidia of Savigny, which have six. These are almost all pectinated and furnished with papillae. The carapaces of these arms vary with the age of the individual, as well as with the season and the particular exposure.

The cells in which the animals lodge are round, unequal in diameter, and about a sixth or a fifth of an inch in depth, separated from each other by thin partitions, which are rendered opaque by a great number of solid globules.

The alcenes are found in all seas and at various depths, subsisting, it would appear, on marine plants. They do not, however, seem to like places which are often left dry by the sweep of currents, and hence are not found in those regions except about the low-water-mark of spring-tides; and they seem to delight in places sheltered by rocks from the sweep of currents, or the agitation of the waves, and where the light is rather obscure. They are found, therefore, to be most numerous in depth.

M. Lamouroux makes nine genera, of which we shall here only notice the three, whose names are formed from that of the group—the alcenium, the alceonella, and the alceonidium.

Alcenium lobatum, or Lobularia digitata, which is not
uncommon in the European seas, and is frequently found on the British coasts. It consists of a tubular mass contracted at the base, and terminating in a varying number of finger-shaped lobes. The colour varies from white tinged with pink to a very deep orange, which forms a fine contrast with the invariable white colour of the inhabiting animals.

Acyonella stagnorum, a fresh-water species, found in ponds and springs about Paris, by Bosc and Bruguière, attached to aquatic plants. It has been ranked by Lamarré among fresh-water sponges, but, as M. Lamarré thinks, improperly.

Acyonella gelatinosum is very variable in form; thick, branched, the branches being blunt. It is found attached to solid sands or upon rocks by means of a sort of paste, from which arises a short cylindrical footstalk about the thickness of a crow's quill. It is phosphorescent in certain seasons, it only lives in deep water, and is never found except when drawn from the mud.

ALDBOROUGH, a parish in Yorkshire, with a population of 2447 inhabitants, comprehending the boroughs of Aldborough and Boroughbridge, on the south bank of the Ure, both disfranchised by the Reform Bill. Aldborough is a place of great antiquity, and has been proposed to have been the capital of the Brigantes, the most powerful of the nations of Britain before the conquest of that people by the Romans. But, however this be, the remains, which speak of former greatness, of the age, go no higher than the Roman dominion. Under that period, Aldborough, the name of Isurium, which it lost upon the invasion of the Saxons, who gave it the appellation of Ald-burgh (Old Borough or Town). The ancient walls are stated by Drake (Hist. of Yorke) to have been a mile in length, half in circuit and inclosing a space nearly square. Many Roman antiquities have been dug up, including coins, necks, pieces of urns, &c.: and there have been found the remains of aqueducts cut in great stones and covered with Roman slab, and of a triple built on what is called the Borough Hill; also several mosaic pavements. The remains of Isurium have served for the pavements and the walls of out-buildings, both in Aldborough and Boroughbridge, which latter place, about half a mile to the west of the former, is called Boroughbridge.

Three remarkable obelisks are yet remaining to the west of Boroughbridge, and are therefore nearer to it than to Aldborough; but they are connected in their origin with Isurium. Antiquaries do not agree whether they are Britons or Roman monuments. They have been vulgarly called the Devil's Arrows, and are rough blocks of coarse rag-stone. The middle one is above thirty feet from the top to the base, which is six feet below the surface.

Aldborough contains only 620 inhabitants, and is about six miles from York. [See Boroughbridge.] There is another place of the same name on the coast of Suffolk, once a town of considerable importance, but reduced by the encroachments of the sea, which has worked away the market-place and a whole street during the last century. It was also disenchained by the Reform Bill. The town is pleasantly situated between the river Alde and the sea, and is much inhabited by fishermen, pilots, and other seafaring people. Some corn is exported, and the curing of sprats and herrings carried on to a considerable extent. It has been frequented late as a bathing place. Population, 1341. Distant from Ipswich twenty-five miles, from London ninety-four.

ALDEBARAN, the Arabic name of a large and bright star of the first magnitude, called in modern catalogues a Tauri, situated in the eye of the constellation Taurus. Whence it is called also by the Arabs Aínl Thaur, the bull's-eye. It is the bright star in the group of five, known by the name of the Hyades, on which account it is called by the Ancients and by the Arabs "The Eye of the Hyades." It is reddish, and of late years it has become remarkable as having been frequently occulted by the moon, and having exhibited the curious phenomenon of projection on the moon's disk. [See Occultation.] It is easily found in the heavens by the following directions. If a line be drawn through the three conspicuous stars forming the belt of Orion, towards the head, it passes just below Aldebaran and the Hyades; if towards the feet, it passes through Sirius, which is about the same distance from the belt as Aldebaran. This is shown in the following diagram.

We subjoin the right ascension and declination of Aldebaran at the beginning of the years 1800 and 1834. The difference is owing to the precession of the equinoxes, as this star has no perceptible proper motion.

<table>
<thead>
<tr>
<th>Year</th>
<th>Right Ascension</th>
<th>North Declination</th>
</tr>
</thead>
<tbody>
<tr>
<td>1800</td>
<td>4 24 94</td>
<td>16° 5' 59&quot;</td>
</tr>
<tr>
<td>1834</td>
<td>4 26 24</td>
<td>16 10 92</td>
</tr>
</tbody>
</table>

Annual motion in right ascension: 3° 49' 49"

Annual motion in declination: 7° 10'

ALDER. [See ANLUR.]

ALDERMAN. This word is from the Anglo-Saxon ealdorman or ealdorman. The term ealdorman is composed of ealh, originally the comparative degree of the adjective eald, old, and man; but the word ealdorman was also used by the Anglo-Saxons as a substantive, and as such it was nearly synonymous with the old English term elder, which we so often meet with in the English version of the Bible. A prior meaning is then 'the chief civil magistrate of a city, or governor of a district, Hiresa-ealdor; the magistrate of a hundred, Hundred-ealdor, &c.' In a philological sense, the terms ealdor and ealdorman were synonymous and equivalent; but in their political acceptance they differ, the former being more general, and, when used to express a specific degree, commonly denoting one that is lower than ealdorman. In both terms the notion of some high trust or office, as well as that of rank or dignity, seems to be inherent; but ealdorman at the same time expressed a definite degree of hereditary rank or dignity which the other does not.

Thus in England, earls, governors of provinces, and other persons of distinction, were generally termed Aldermen by the Anglo-Saxons. But besides this general signification of the word, it was also applied to certain officers in particular; thus there was an Alderman of all England, (ealdorman totius Anglorum,) the nature of whose office and duties the learned Spelman says 'he cannot divine, unless it corresponded to the office of Chief Justiciary of England in later times.' There was also a King's Alderman, (ealdorman regis,) who has been supposed to have been an occasional judge, with an authority or commission from the king to administer justice in particular districts: it is very possible, however, that his duties may have resembled those exercised by the king's sergeant in the time of Bracton, when there are strong traces of the existence of an officer so styled, appointed by the king for each county, and whose duty it was to prosecute pleas of the crown in the king's name. Spelman, however, doubts whether the King's Alderman may not have been the same person with the Alderman of the county, who was a kind of local judge, entrusted, to a certain extent, with the administration of civil and criminal justice. Besides those above mentioned, there were also Aldermen of cities, boroughs, and castles, and Aldermen of hundreds, upon whose peculiar functions it would, at this distance of time, be useless to speculate.

In modern times, Aldermen are individuals invested by charter with certain privileges and duties in municipal corporations, either as civil magistrates themselves, or as associates of the mayor. They are in some cities called Marshall, or Clerk, or Steward, or Mayor; and in some towns, Marshals, or Magistrates, or Stewards. These privileges and duties, and also the rules which regulate the election and promotion of these officers, are of course as various as the provisions of the different charters under which they act.

ALDERNEY, or AURIGNY, one of the islands in the English Channel, lying in the bay of Avranches formed by the peninsula of Cotentin, (which constitutes part of the department of La Manche,) in Normandy, and the coast of Brittany. It is the nearest of this group of islands to the French coast, being about seven miles west of Cap de La Hogue, in Normandy, from which it is separated by the
strait or 'Race of Alderney,' a channel very dangerous in stormy weather, from its conflicting currents, but safe at other times, and affording sufficient depth of water for the largest merchant vessels. The village of Alderney, which lies through the Race of Alderney, after the defeat of Tournville by the combined navies of England and Holland, under Admiral Russell, in 1692, Alderney is distant from Guernsey (N.E. by N.) about fifteen miles, or twenty from port to port, by the S.W. coast, and forty-five from port to port; and about fifty-five or sixty miles S. by E. of Portland Bill, the nearest point of England. The communication with Guernsey is much more direct, and by regular thence, than by Alderney, which possesses four vessels, the total tonnage of which is 150. During the oyster season some of them ply on the French coast; but two, at least, run regularly to Guernsey, paying a visit occasionally to Jersey.

The island is about 3½ miles long, from N.E. to S.W., about 1½ broad; and about 8 miles in circuit. The S.W. coast is formed by picturesque and lofty cliffs, from 100 to 200 feet high; but as the island shelves towards the N.E., the surface of the spine of the island are of less elevation, and more indented with small bays, such as those of Longuy or Citél (query, Château—Castle?) bay on the E., and of Braye on the N.W. The south affords good anchorage, and near it is the only harbour in the island, that of Crabbiy, which, however, is not of much use but occasionally. The equinoctial winds to the island is dangerous in bad weather, in consequence of the rapidity and diversity of the currents, and the rocks and islets which surround it in every direction. Six miles, or thereabouts, to the west lies a cluster of rocks, called the Brests, where one vessel is sometimes taken and having, on the S.W. side, a natural harbour, in which a frigate may shelter as in a dock. The light-houses on these rocks are three in number, and so situated as to form a triangle. They are called St. Peter, St. Thomas, and Donjon. The platform of each is weathered with recesses are also the stairs-case, to prevent their destruction in case of fire. The men who have the care of the lights keep a journal of the wind and weather: they have a telegraph for their information, by which the sight of the lighthouse, the House, (which corporation has the charge of the light-houses) also a little brewery and a forge. Their salary is about fifty pounds per annum. Upon these rocks, or others, in the vicinity, Prince William, only son of Henry I., perished by shipwreck, in the year 1119; and in 1714, the Victory, of 110 guns, was lost, with 1100 men.

The climate is mild and healthy; the soil sandy, gristy, and gravelly round the coast, but in the valleys it is very fertile for excellent corn, potatoes, and vegetables. The potatoes, much superior to those of Jersey or Guernsey. In the meadows they grow peas and clover, which give excellent milk and butter. The grass lands seem to about one-third of the area of the island. The land is generally cultivated by labourers, both of high and low rank. The supply of excellent water is procured in every part of the island. The Alderney cows maintain their reputation: they are easily distinguished from those of the neighbouring islands, by being remarkably small and straight in the back.

The population of Alderney is decreasing by emigration, which is attributed to want of trade and employment. The majority of the emigrants go to Guernsey and Jersey; some to America. The population was, in 1813, 1580; in 1821, 1521; in 1832, 1527; and in 1831, 1547, of whom 447 were males, and 560 females. The number of inhabited houses, in 1831, was 217; of houses uninhabited or building, 58; and of families, 246. Of these last, 29 were employed in agriculture, 59 in fishing, and halliards: 153 or 107 were not included in either of these classes. The inhabitants are a good deal engaged in fishing, to which their insular situation and the abundance of fish supply an ample inducement. The town, which is known simply by that description, and situated on a high promontory in the centre of the island, with roads leading to Brave and Longy Bays, and comprehends all the houses in Alderney. It is partly paved, but presents, as may be supposed, few buildings worthy of notice. The church is dedicated to St. Elizabeth, and is in a ruinous state. The government-house is near the church. An ancient monastery at Longy Bay has been made to serve the purpose of a barracks in time of war, and a depot for military stores and an hospital, about the conclusion of the peace. The island contains the decayed foundations of a castle which bears the name of 'Esses farm,' from having been for a time the residence of the Earl of Essex, the favourite of Queen Elizabeth.

The island of Guernsey and Jersey, with their dependencies, formed part of the Duchy of Normandy, and are therefore the relics of the extensive domains which the Kings of England once possessed in France, they are subject to the crown, but not to the jurisdiction of the legislative power of this country. [See GUERNSEY, Jersey.] Alderney is a dependency of Guernsey. The civil power is vested in six jurors, who are chosen by the people, and hold their offices for life, unless removed for misbehaviour. The laws of Jersey are adapted to the people, who form a sort of local legis-lature, the donzeaires having only the power of deliberating, not of voting: neither is this power possessed by the governor of Guernsey or his lieutenant, though the presence of one of these is requisite. The jurors, or constables, are the eldest adulteness, with the procuret procurator and advocate, the last a barrister, and the greffier, or registrar, nominated by the governor, constitute the court of justice; from which, however, an appeal lies to the prince at Jersey, and to the last resort to the king in council. In criminal cases, the court at Alderney only collects and transmits evidence to the superior court at Guernsey, where the sentence is pronounced, and carried into execution. The local militia is composed of the solemn, armed corporals, and occasionally men are furnished with clothing and accoutrements at the cost of the government, but receive no pay when called out. They are excellent marksmen. The officers are appointed by the Lieutenant-Governor of Guernsey. The militia and royal treasury, one private, one maintained by John Le Meurier, Esq., and the other by the United Company of Alderney, a body of 300 men. The inhabitants appear to have embraced the Protestant religion about the time of the Reformation in England: at present they are about equally divided between the Establishment and the Wesleyan Methodists. There is a chapel.

Persons quite uneducated are unknown. All speak and write either French or English. The last is spoken by about half, and understood by all. There are three week-day schools—one private, one maintained by John Le Meurier, Esq., and the other by the United Company of Alderney, a body of 300 men. The Sunday schools connected with the two places of worship.

Aldernian was called Rilbana by the Romans. The Normans settled here at an early period; and it has been observed, that the island remained under the English monarchy, who were also Duke of Guernsey, when there were, many of their contingent donations were lost. Few or no antiquities are found excepting the castle and monastery above noted. In April, 1852, seven stone coffins, one of them containing a human remain, were discovered in the best kept field, there to point out the site of the ancient burial-ground of the island. There are, at different spots on the coast, two stones wrought by nature in the shape of a chair. One on the N.W. of the island, is called 'The Monk's Chair,' the other, on the S.W., common tricks; and 'The Lover's Seat.' It lies in 45° 45' N. lat., 2° 13' W. long. [Communication from Jersey, &c.]

ALDROVAND (ULYSSES), the most celebrated naturalist of the sixteenth century, was born at Bologna in 1527, where he died the 4th of May, 1605, at the age of seventy-eight. He was of a noble family, and on the title-page of his posthumous works he is designated a patrician. On these published by himself he is termed philologus, phsicus, and professor of natural history in the gymnasium of Bologna. Nothing seems to have been recorded of his early studies, but few incidents of his after life. It is generally known that he visited several parts of Europe in quest of knowledge in his favourite science. According to M. Audibert de Mure, he gave a painter whom he employed in drawing specimens a yearly salary of two hundred crowns for upwards of thirty years, and engaged as engravers, Christopher Balbi and custos Corbellus. He has left nearly a thousand drawings and engravings, and in 1565 some verses which he recorded in this way, as well as in the purchase of specimens, exhausted his fortune: and it is reported he was so much reduced in circumstances, that having become blind in his old age, he was compelled to go to Paris, where he died, and is buried in the hospital of St. Vincent de Paul, where his body has been honoured: but the only grounds alleged for the doubt are, 'that it is not probable the senate of Bologna, to whom he bequeathed his cabinet and his manuscripts, and who appropriated a considerable sum to continue the publication of his works in his death, would have suffered him...
to want during his lifetime; while his widow ever expressly mentions, in the dedication of one of those volumes, that he was honoured and upheld by the magistrates.' (Biog. Universelle, art. Aldrovand.) But so far from these circumstances being improbable, as this writer supposes, the whole tenor of this rhetorical history rests on natural history. It appears probable that Aldrovand might have been neglected during life, and honoured after his death. In the volume published by the widow, we have found no dedication as is above stated; except the part of the text, 'and, the new and the whole new work,' illustriissimum Senatum Bononensem et; and it would surely be an extraordinary thing to construe the preposition 'ad' into 'honoured and upheld.'

His works on natural history are comprised in thirteen fine folios of modern nations, by which he published, four, namely, three upon Birds, dated 1599, 1600, and 1603, reprinted at Frankfurt in 1610; and one upon Insects in 1602. In 1605, immediately after his death, his widow published a volume on Exsanguineous Animals, including Shells and Corals. The subsequent volumes on Quadrupeds, Serpents, Monsters, Minerals, and Trees, were published at the expense of the senate of Bologna, under the superintendence of the professors in the gymnasmum—Cornelius Uterverius, a Doctor of Physic, a Provost of the University of Paris, a Doctor of Moral Philosophy, a Doctor of Law, a Doctor of Divinity, and a Doctor of Canon Law, together with more than a hundred others. The works of Aldrovand were translated into the Latin tongue, by Juan Baptista, a Scotaman; Bartholomew Abruscan of Bologna, and Ovid Montalban of Bologna. It is difficult to procure a uniform edition of all the thirteen volumes; and the one on Minerals is rare.

The merits of the author have been in our judgment, greatly overestimated by his own writers. 'We can only,' says the writer of his life in the Biographie Universelle, 'consider the books of Aldrovand as an enormous compilation without taste and without genius, while the plan and manner of them are in a great measure borrowed from Gentili, and in the first edition of his work reducing one-tenth of all the inutilities, and things foreign to the subject were expunged. 'On the subject of the cock and bull,' adds this great naturalist, 'Aldrovand tells us all that has ever been written on a quarter of a hundred books, and all that ancients entertained of them; all that has been imagined of their virtues, character, and courage; all the circumstances in which they have been employed; all the tales which old women have told of them; all the miracles which they were made to perform in the mythological age; all the subjects of superstition which they have furnished; all the comparisons which poets have drawn from them; all the attributes which have been accorded to them; all the representations of them in hieroglyphics and heraldry; and in every age for their beauty and fidelity which have ever been related on the subject of cocks and bulls.'

Now so far from this copiousness of illustration being an objection, it is to us one of the greatest recommendations of the works of Aldrovand, without which the work of Bonghi could have frequently been meagre and imperfect. The worst of it is, that by thus fixing on Aldrovand the character of a retailer of fables, one of his chief merits is quite thrown into the shade:—we allude to his veracity, his extensive personal observations, and his numerous dissections, with his consequent corrections of errors in preceding naturalists, particularly Aristotle, Albertus Magnus, and Gesner. It is singular that he uniformly terms Gesner 'Ornithologus,' and never once, so far as we have observed, gives his own name as its synonym, because, while he gives him all due praise, he often corrects his mistakes, and might dislike to appear partial.

Several specimens from his cabinet are still to be seen at the University of Bologna; but his numerous MSS. were removed to Paris by Napoleon, and we do not know whether they have been restored.

ALDUS. [See Manutius.]

A.L.E. The etymology of this word is utterly uncertain; the most probable conjecture is, that it is Anglo-Saxon. For specific information respecting the mode of manufacturing ale, and its distinction from beer and porter, we must refer to Bawmow, confining this article to a general history of ale as an article of consumption by man. The use of ale is very ancient; it is mentioned by Pliny, that barley steeped in water and afterwards fermented, may be traced in several parts of the ancient world. Pliny the Naturalist, states, that in his time it was in general use amongst the ancients, and that it was employed in the manufacture of paper; and, according to him, it was not confined to those northern countries whose climate did not permit the successful cultivation of the grape. He mentions that the inhabitants of Egypt and Spain used a kind of ale; and says that, though it was differently named in different countries, it was universally the same liquor. See Plin., Nat. Hist. lib. iv. c. 22. Herodotus, who wrote 500 years before Pliny, tells us that the Egyptians used a liquor made of barley (ll. 77.) Domb Garmis relates it to a similar beverage amongst the people inhabiting the shores of the Adriatic, lib. 49, De Pannomit. Tacitus states, that the ancient Germans ' for their drink drew a liquor from barley or other grain, and to the price of which it resemble wine.'—Tacit. De Mor. Germ. c. 23. Ale was also the favourite liquor of the Anglo-Saxons and Danes; it is constantly mentioned as one of the constituents of their feasts; and before the introduction of Christianity amongst the Saxons, the custom of drinking copious draughts of ale formed one of the chief felicities of their heroes in the Hall of Odin. It is expressly named as one of the liquors provided for a royal banquet in the reign of Edward the Confessor. If the accounts given by Isidorus and Orosius of the method of making ale amongst the ancient Britons and other Celtic nations be correct, it is evident that it did not materially differ from our modern brewing. They state, that 'the grain is steeped in water and then dried and ground; after which it is infused in a certain quantity of water, which is afterwards fermented.' (Henry's History of England, vol. ii. p. 364.)

In early periods of the history of England, ale and bread appear to have been considered as essential to human life, and to constitute necessary elements of life. This appears from the various assizes or ordinances of bread and ale (assise panis et cierung) which were passed from time to time for the purpose of regulating the price and quality of these articles. In the year of the 3rd Edward I. it was decreed that all ale sold under 2d. should be sold only for 3d. No ale was to be sold under 3d. nor over 4d. The price of 4d. was raised, the preamble of which alludes to earlier statutes on the same subject, by which a graduated scale was established for the price of ale throughout England. It declared that 1£ was to be sold for three shillings, or three shillings and four-pence, and a quarter of a shilling for twenty pence or twenty-four pence, and a quarter of oats for fifteen pence. In the 20th year of the same King, it was enacted that ale-brewers should not brew ale out of season, and in the year 25 Henry VI. c. 4, it was enacted that ale-brewers should not sell their ale except in alehouses, and that they should not sell it to the consumer, to a certain extent, from any adulteration of the article by the admixture of improper ingredients.

ALEHOUSES. The adoption of efficient measures for the regulation of houses appropriated to the sale of intoxicating liquors among the lower orders of the people has been found, especially in populous countries, to be absolutely necessary, as the consumption of these liquors, and the consequent debasement of the human body and mind, has increased almost to an alarming degree. In some countries the experience of the past is always the best guide to an opinion for the future; and it may, therefore, be useful to trace, in a summary manner, the history of the laws which have been introduced from different countries into the law of the regulation of alehouses. By the common law of England, it was as lawful for a person to open a house for the sale of beer and ale as to keep a shop for the purpose of converse.
niently selling any other commodity by which he might choose to gain his livelihood; subject only to a criminal prosecution for a nuisance if his house was kept in a disorderly manner, having been previously warned against it, and for encouraging bad company to resort thither, to the danger and disturbance of the neighbourhood. As civilization and population increased, this restriction was found to be insufficient; and so easily as the eleventh year of the reign of Henry the Eighth passed, all penalties for selling ale were removed, and the justice of the peace were empowered 'to reject the common selling of ale.' This slight notice of the subject in the statute 2 Henry VII. c. 2, seems to have been entirely disregarded, as is proved by a statute passed in 1549 (6 & 7 Edw. VI., c. 29), enacting that all interdicts and troubles to the commonwealth daily grew and increased through such abuses and disorders as were had and used in common alehouses and other houses called tippings-houses, pot-houses, or such other places, where any ale was sold and drunk, and such alehouses; and it was enacted that 'none should be suffered to keep alehouses unless they were publicly admitted and allowed at the sessions, or by two justices of the peace; and the justices were directed to take security, by recognizances, from all keepers of alehouses, and for using of unlawful games, and for the maintenance of good order therein; which recognizances were to be certified to the quarter sessions, and there recorded.' Authority is then given to the justices at quarter sessions to inquire whether any nuisance be occasioned by alehouse keepers which might subject them to a forfeiture of their recognizances. It is also provided that 'if any person, not allowed by the justices, should keep a common alehouse, he might be committed to gaol for three days, and, before his deliverance, must enter into recognizances to repent his offence, and if the recognizance and the offence is to be given to the next sessions, where the offender is to be fined 20s.' This statute formed the commencement of the licensing system, and was the first act of legislation which expressly under the control and direction of the local magistrates; and alehouses continued to be regulated by its provisions, without any further interference of the legislature, for upwards of fifty years.

In 1604 a statute (9 Jac. I., c. 9) expressly as its preamble states, for the purpose of restraining the 'inordinate haunting and tipping in inns, alehouses, and other victual houses.' This act of parliament re- cites, that 'the ancient, true, and principal use of such houses was for the lodging of wayfaring people, and for the supply of the wants of such as were not able, by greater quantities, to make their provision of victuals, and not for entertainment and harbouring of lewd and idle people, to spend their money and their time in lewd and drunken manners.' It proceeds to say 'that any alehouse-keepers who are harbouring the inhabitants of any city, town, or village, in which his alehouse is situated, (excepting persons invited by any traveller as his companion during his abode there; excepting also labourers and handicraftmen, on working-days, for one hour at dinner-time to take their diet, and servants in cities, by the day, or by the great, lodging at such alehouses during the time of their working,) to continue drinking or tipping therein, shall forfeit 10s. to the poor of the parish for each offence.' From these exceptions inserted in this statute, and also from the preamble, it is quite clear that, in the time of James I., alehouses were used for a purpose which is now almost wholly discontinued; and that it was then common for country labourers both to eat their dinner in them, and to sing and dance in them, from the injudicious prohibitions of cottages in the reign of Elizabeth, and the statutes of Inmates, which limited the number of inmates in a house to one family; or it may have been the natural step in the progress of civilization. In the time of Queen Anne, the Ale House-keeper was the master, both for subsistence and lodging, to the improved condition of the free labourer, who provides himself with necessaries.

The operation of the last-mentioned statute was limited to the end of the next session of parliament, in the course of which a statute (4 Jac. I., c. 4) was passed, imposing a penalty upon persons selling beer or ale to unlicensed alehouse-keepers; and by another statute (4 Jac. I., c. 5) of the same session, a period of seven years was enacted that upon the view of a magistrate, of remaining drinking or tipping in an alehouse, should pay a penalty of 3s. 4d. for each offence, and in default of payment be placed in the stocks for four hours.' The latter statute further directs, that 'all offences relating to alehouses shall be diligently presented and inquired of before justices of assize, and justices of the peace, and magistrates; and that all constables, alehouse-keepers, [see ALE.,] and other officers in their official oaths, shall be charged to present such offences within their respective jurisdictions. The next legislative notice of alehouses is in the 7th Jac. I., c. 10, which, after reciting 'that notwithstanding former enactments by the parliament, the nuisance of drunkenness did more and more abound, enacts, as an additional punishment upon alehouse-keepers offending against former statutes, that, for the space of three years, they should be only fined 10s. and be committed to the county jail to reform themselves.' By the Act of 8 & 9 Jac. I., c. 7, declares, that the above-mentioned statutes, having been found by experience to be good and necessary laws, shall, with some additions to the penalties, and other trifling alterations, be put in due execution, and continue for ever; and that statute (9 & 10 Jac. I., c. 4) supplied an accidental omission in the statutes of James I.; and a second (3 Car. I., c. 3) facilitates the recovery of the 20s. penalty imposed by the statute of Edward VI., and provides an additional punishment, by imprisonment, for a second and third offence. At this point all legislative interference for the regulation and restriction of alehouses was suspended for more than a century.

It is remarkable that the circumstances which led to the passing of the above-mentioned statutes in the early part of the reign of James I., and the precise nature of the evils and inconveniences alluded to in such strong language in the preambles, are not described by any contemporaneous writers. It appears, however, from the Journals, that they might have been very extensive; and that the inconveniences were not eventually passed without considerable opposition.

What the extent of the evils arising from alehouses might have been, if these restrictive laws had not been passed, is, of course, mere matter of conjecture. It is probable that alehouses began to appear in large numbers, and the full advantage which it was expected would be derived from them. During the reign of Charles I., the complaints against alehouses were loud and frequent. In the year 1633 we find the Lord Keeper Coventry, in his charge to the judges in the Star-Chamber, inveighing in strong and angry terms against them. (See Howell's State Trials, vol. iii. p. 835.) He says, 'I account alehouses and tipping-houses the greatest pests in the kingdom. I give it you in charge to take a course that none be permitted unless they are a seconded and third offence. At this point all legislative interference for the regulation and restriction of alehouses was suspended for more than a century.

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of parliament on the subject passed in the year 1729, when the statute 2 Geo. II. c. 28, § 11, after reciting that "inconveniences last arisen in consequence of licenses being granted to alehouse-keepers by justices living at a distance, and therefore not truly informed of the occasion or want of alehouses in the neighbourhood, or the characters of those who apply for licenses, enacts that "no license shall in future be granted but at a general meeting of the magistrates acting in their respective counties, with the advice and approbation, that remarked, that at this period a most pernicious element in the compound of mischief produced by public houses had recently sprung into existence, in the shape of spirituous liquors, which we have just mentioned, a clause is contained, placing the keeper of alehouses or other shops under the same regulations as to licenses as alehouse-keepers. The easiness with which spirits were consumed at this period by the lower orders of the people in England, and especially in London and other great cities, annual, have resembled rather the brutal intemperance of a tribe of savages than the habits of a civilized nation. Various evasions of the provisions of the licensing act were readily suggested to meet this inordinate demand; and in 1733 it became necessary to enjoin, by the discontinuance of the practice of "hawking spirits about the streets in wheelbarrows, and of exposing them for sale on bulks, shods, or stalls." (See 6 Geo. II. c. 11.) From this time alehouses became the shops for spirits, as well as for ale and beer; in consequence of which an alehouse-keeper might find it far greater difficulty than formerly, and this difficulty was heavily increased by the growing importance of a large consumption of these articles to the revenue. Besides this, all regulations for the prevention of evils in the management of alehouses were relinquished, and the need to have at all times deemed necessary for the facility and certainty of collecting the excise duties. In 1753 a statute was passed (26 Geo. II. c. 31) by the provisions of which, with some trifling modifications, but at least, the licensing of alehouses continued to be regulated for the remainder of the last century. This statute, after reciting that "the laws concerning alehouses, and the licensing thereof, were insufficient for correcting and suppressing the abuses incident to the same," and amongst others, the following enactments:—1. That upon granting a license to any person to keep an alehouse, such person should enter into a recognizance in the sum of 10l., with sufficient sureties, for the maintenance of good order therein. 2. That no license be granted to any person not licensed the preceding year, unless he produced a certificate of good character from the clergyman and the majority of the parish officers, or from three or four respectable and substantial inhabitants, of the place in which such alehouse is to be kept. 3. That annually they be held, one in every September, and not before the eleventh of that month, at the town hall of the several places. 4. That if, after any person with licence to keep an alehouse, to appear at the next quarter sessions, where the fact may be tried by a jury, and in case it is found that the condition of the recognizance has been broken, the recognizance is to be arrested into the Exchequer, and the party is utterly disabled from selling ale or other liquors for three years. By a statute passed in 1808 (48 Geo. III. c. 143) a difference was introduced into the mode of licensing, not with a view to the internal regulation of alehouses, but for purposes connected with the excise, of which, which was formerly obtained from the magistrates, was, by that act, to be granted by the commissioners, collectors, or supervisors of excise, under certain specific directions, and upon the production by the applicant of a previous license or allowance. The purpose of this was to accelerate the execution of the provisions of the former statutes respecting licensing. The next act of parliament upon this subject was passed in 1822, (3 Geo. IV. c. 77,) but as that statute continued in operation for only a few years, it is unnecessary to specify its provisions further than to notice, that the preamble states the insufficiency of the laws previously in force respecting alehouses, and that one of its provisions is considerably to increase the amount of the recognizances required both from the alehouse-keepers themselves, and those to whom the granting of alehouse licenses was passed, (9 Geo. IV., c. 61,) which repeals all former statutes on this subject, and enacts a variety of provisions, of which the following are the most important:—1. Licenses are to be granted annually, at a special session of magistrates, appointed and summoned in a manner particularly directed, and to be called the General Annual Licensing Meeting, to be holden in Middlesex and Surrey, within the first ten days of March, and in every other place between the 20th of August and the 14th of September. 2. Every person intending to apply for a license must affix a notice of his intention to the several justices, and, within seven days, post such notice on the door of the house, and on the door of the church or chapel of the place in which it is situated, on three several Sundays, and must serve a copy of it upon one of the overseers, and one of the peace officers. 3. If a riot or tumult should arise, or licensed persons, or any licensed alehouse-keeper to close his house; and if this order be disobeyed, the keeper of the alehouse is to be deemed not to have maintained good order therein. 4. The keeper of such house shall not adulterate his liquors; that he shall not use false measures; that he shall not permit drunkenness, gaming, or disorderly conduct in his house; that he shall not suffer persons of notoriously bad character to assemble therein; and that upon the reception of the traveller) he shall not open his house, during divine service, on Sundays and holidays. 5. Heavy and increasing penalties for repeated offences against the tenor of the license are imposed; and magistrates at sessions are empowered to fine any person, not being convicted by a jury, to the amount of ten guineas. 6. That a list of such licences shall be kept at the Excise Office, which is at all times to be open to the inspection of the magistrate, and his assistant. 7. That an alehouse keeper be bound with a surety for the payment of any penalties imposed for offences against the act. 8. That any person licensed under the act, who shall deal in wine or spirits, shall be liable to a penalty of 20l. 9. That in cases of riot, persons so licensed shall close their house for the direction of the traveller. 10. That such persons suffering drunkenness or disorderly conduct in their houses shall be subject to penalties which are to be increased on a repetition of the offence, and the magistrates before whom they are convicted may sentence the housekeeper to the payment of double the amount of excise in London, and by collectors and supervisors of excise in the country, upon payment of two guineas. 11. That a list of such licences be kept at the Excise Office, which is at all times to be open to the inspection of the magistrate, and his assistant. 12. That any person licensed under the act, who shall deal in wine or spirits, shall be liable to a penalty of 20l. 13. That in cases of riot, persons so licensed shall close their house for the direction of the magistrate. 14. That such persons suffering drunkenness or disorderly conduct shall be subject to penalties which are to be increased on a repetition of the offence, and the magistrates before whom they are convicted may sentence the housekeeper to the payment of double the amount of excise in London, and by collectors and supervisors of excise in the country, upon payment of two guineas.
of the use of intoxicating liquors has been considered, by very competent judges, as an object of doubtful policy. 

For the remarkable efforts, ever since, to check the abuse, see Dr. Sir Frederic Morton Eden, in his valuable History of the Poor, 'any further that they are wanted for the many useful purposes which they serve among the labouring classes, is to act the part of a foel de se. Nor ought the public ever to be lured into an acquisition by the flattering bait of immediate gain, which ere long they would be obliged to pay back to paupers, in relief, with a heavy interest.'

ALEMAN (MATEO). This celebrated Spanish writer who died in 1699 and published a work about the Ancients of States, held an important office in the financial department, under Philip II., which he filled with honour for a long period. Dissatisfied at last with the broils of the court, he requested his dismissal; and having obtained it, he retired to devote himself entirely to study. In 1694 he published the Life of St. Antonio de Padua with an Exercitation in eundem, in Latin verses, not without merit. We are ignorant of the motive or object of his voyage to Mexico, and only know that in 1699 he published there an Ortografia Castellana, or Spanish dictionary.

Ortografia was the text-book of American Spanish for a long time; and the work which enabled him, and the huge edifice to fall already under his son. The nation was then swarming with a multitude of men, who, thinking it degrading to earn an honest livelihood, did not scruple to live by cheating and swindling. This was the origin, at Spain about the middle of the sixteenth century, of which, from the beginning of the sixteenth to the latter end of the seventeenth centuries, appeared in Spain, intended to describe the life and manners of rogues, vagabonds, and beggars, bringing also the other classes of society upon the stage of their adventures. Its author was Ruiz Chapu, and the title is the character of Alemán's work. It is written in a pure and correct style, though, from the nature of the subject, it is very often vulgar and even indecent. The abruptness and rapidity with which the author passes from one subject to another, together with the use of low slang words, render it obscure in many passages. His practice of moralizing or rather preaching is very often carried too far; but we must not forget the age and country in which the author lived. His work was translated into all the principal languages. A French translation appeared in 1690 by Chapu. James Balba of Magdalene College, Oxford, translated Guzman de Alfarache into English, the first edition of which was published 1622 or 23, the 2d in 1639, and the 3d in 1657. The work of Guzman de Alfarache, resembles in no respect the novel of Alemán. In this work as in his other productions, Le Sage copied indeed the figures, but he made out of them a picture adapted to the taste of the French public. We are not acquainted with the precise time of Alemán's death, but it is supposed that it occurred under the reign of Philip III.

Nicola Antonio, Bibliotheca Hispana Nova.

ALEMANNI, or ALLEMMANNI. It is difficult to give a clear and satisfactory account of this people, although much inaccurate writing has been done in the examination of both of Greek and Roman authors. These notices, however, generally detail only the circumstances of particular invasions and of mutual injuries, committed on the Roman frontier; but a comprehensive view of the history, and an accurate information respecting the origin and internal government of the Alemanni, are nowhere to be obtained. Their very name, Alemanni, Allemani, Alamanni, or Allamani, (the Greek writers call them Δραγασσονιχάι) has been the subject of much controversy; and after all that has been said, it is probable that this name was the most obvious, and which perhaps found less favour because it was so, still seems more probable than any other. It is more natural to look for the origin of the word Alamanni, in some Teutonic dialect, ancient or modern, than anywhere else; for it cannot be doubted that this people were Germans.

Ancient authors agree in this, that the Alemanni were a mixed race, and this word a generic name for many tribes. Agathias, in b. i. c. 6, of his History, has the following description of the Germans, the Allemanni were a gathered mob and mixed race, (ἀλαμαννοί ἀσφαλισμένοι καὶ μεταξύ, and this is expressed by their very name): Thus we shall see, admiring the Roman name of Alamanni, since we find that, in German, Alle still signifies all, and Mann (plur. manner), a man, and that Alamanni meant in their language people, men, or a race of men—Allemanni, since the Icelander analogy supports this etymology. In the ancient Norse (i. e. Icelandic), the Germans are called Pidvskjar, i. e. the men of the nation, from Pid, a nation, and ver, ver, a man, a defender, protector. The Germans, then, in the eyes of their northern neighbours, were thus described of nations—the great nation—the nation καί ετούνικος—and thus Romans and Scandinavians used a term, in different languages indeed, yet conveying the same idea, as a name for this people. The French, too, as they have borrowed from the Romans the name Allemann, which was significant in the language of the latter though not in French, so they have also borrowed from the Alemanni the appellation Allemann, which they have extended to the whole German nation—also significant in the German, but not in French. Thus it is interprunted.

It is likely that the sound of the word Alemann recommended it to the Romans; considering that it was barbarous, still it was sonorous, and the surname of Alemannicus, was given by the Romans to those Gauls who were brought from it, and probably pleased the matrons of Rome. At all events it is more natural thus to derive the name of Alemann from native Germanic roots, than, as several learned etymologists and critics have done, from the Welsh word Ethlyn, meaning an irregular end of the singing, which many think an intoxicating word, or from Ethlynus, which means foreigner. We say Welch word advisedly, not Celtic word, as Riickless, for example, does; for although the Welsh is one of the Celtic languages, it is not the pure, or the parent Celtic, but one of the more mixed of the languages of that family; the Welsh being an entire and independent race of protected foreigners, would be gained: the Celtic nations had, at the time when the Alemanni are mentioned by the Romans, been long settled in the westernmost parts of Europe; and it would be difficult, at that period, to prove their presence in any part of Germany.

Moreover, it would be a singular nation, who styled them selves the Foreigners, as the Alemanni must have done if the derivation of their name from Ethlyn be true; for it is more than probable that all the Romans who were brought from them called themselves; and lastly, it follows that these people must have adopted the national designation of Foreigners from a language which was foreign to them. It would not mend matters much to suppose, that the Romans named the Alemanni, which in our modern language means for that supposition again involves many other improbable suppositions. Pfister's derivation in the Allgemeine Encyclopaedie, art. Allemanni, is equally fanciful and uncerital, which we think proper, although foreign to the general plan of this work, to notice it, being a not unessential part of truth to confute error, when supported by respectable, and therefore more misleading, authority. On the other hand, the derivation of Alemann in the most natural way from Alle men, is recommended by the very common practice of placing them in the ranks of the barbarous nations, or with such as harmonize with their distinctive habits or lofty pretensions.

The boundaries of the territory of the Alemanni are even more uncertain than the name; for the extent has varied much at different periods. Their principal settlement, the nucleus from which their dominions spread, was the very heart of Germany, the space between the sources of the Rhine and the Danube; from this vital centre, their sway seems to have extended towards the eastern parts of Gaul, and towards N.E. and N.W. occupying the entire space between them. In the earliest period of their history, their limits are supposed to have been the Rhine, the Danube, and the Maine; in subsequent ages their territory extended towards the Alps and the Jura mountains. The first notice respecting them in history occurs in the year 214, in the reign of Caracalla. This emperor sojourned some time among them, and lived with them on good terms, as they greatly admired his hardiness, frugality, military habits, and personal bravery,

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as well as his plainness and affability of manner, for he affected entirely to forget the emperor, and assumed the part of their companion. But this play, like every other performance, had its end. Under pretext of raising a regiment of auxiliaries, he had a number of those among them who were of military age, and having surrounded them by his soldiers, he gave a signal for a general massacre; such as fled were hunted down by the cavalry. This vile treachery kindled an insupportable hatred to the Romans in the breasts of the former abode, and as the Romans of that time, which they continued the most unrelenting of the empire. They also had their revenge on Caracalla. In a battle which they fought with him, their fury is said to have been so great that they killed the vice-consul, who overran and devastated their country from the Rhine to the Danube. During the disturbances in the Roman empire in 237 and the following years, caused by the despotism and bad conduct of Maximus, the Alemanni recommenced their incursions, thus breaking the treaties they had made. In 257–60, Valerian's general, Posthumus, again drove them out of that country and erected fortresses in their territory. These they indeed repeatedly demolished, but the Romans always repaired them, and held them in possession till the reign of Gallus. In 268, he admitted the Thuringians and Alemanni; and he could no longer be resisted. Diocletian in 285, and Maximian in 287, seem only to have attempted to defend the Roman possessions to the west of the Rhine; and although the latter slaughtered vast numbers of them, he gained no further advantage than the loss of his life. The Alemanni remained the common boundary. Constantinus Chlorus, in 298–301, again ventured to cross the Rhine, and even marched as far as to the Danube; still the Romans gained permanent possession of the countries to the east of the Rhine. For the Alemanni in the meantime, which was the work of Julian, in 356–361, not only drove them out of Gaul, but even made several expeditions into their German domains. In 357 he beat seven of their chiefkains in a bloody battle at Tolbiac, and, at the time Chonostorpa was their commander-in-chief. The next year, in 329, he has had attacked them almost without a cause. The words of Ammiacus Marcellinus are as follows: 'He reflected that some of their gaias (pagi) were hostile, and that they would commit outrages unless they were put down like the rest.' For this expedition Julian made great preparations, by strengthening Hariobandus, a distinguished officer, as a spy, before him, by strengthening his alliance with those Alemannic kings with whom he was at peace, by fortifying the frontier, and placing in the defense of two populous towns, building granaries: yet, when he arrived on the banks of the Rhine near Mainz, he found them well prepared. They defended their frontiers with great spirit, and during a considerable time the Roman emperor found it impossible to effect any thing. His father was Marcianus, a master of an opposite bank; and whenever he attempted to throw a bridge, they were present on the spot and ready to give him a reception, which rendered the attempt unavailing. The emperor at last had recourse to stratagem, and made a number of ships, under the archbishop of Mainz, to carry cross the river during the night, yet they effected nothing of consequence. Finally, however, assisted by the treachery of an Alemannic chief, Julian crossed, and in this expedition he penetrated even to their eastern boundary. Eight Alemannic chiefs, or dukes, Hortensius, Suetamanius, Macranius, Hairobadus, Urbicus, Vestralthus, and Vadomarius, concluded a peace with Julian at Maynz. During the latter part of his reign, they did not venture to attack the Romans; but Valentinian I had almost incessantly to contend with them in his own dominions. In 377, he took them in a bloody battle at Argustalia (now Horbury). In the latter part of the fourth and the beginning of the fifth centuries, they occupied the southern and western banks of the Rhine, opposite the mouths of the Neckar and Main, almost without evaucating the abodes. In the midst of the conflict which they spread over Helvetia, as far as to the Jura and the Lake of Geneva. In whatsoever region they settled, they preserved their national language and manners. After the battle of Tolbiac (now Lulipich), in 496, they lost their eastern and western Frankish possessions. Many of them, disdaining to dwell in a subdued country, sought refuge with Theodoric the Great, who assigned to them abodes in Rhetia. In 536, Vitiges ceded them, and from the extension which the French have given to their name, we may judge that they were a leading, a preponderating tribe among the Germanic nations.

As branches of the Alemanni, there have been mentioned the Gepids, the Lutitians, the Juthungi, the Vitungs, and the Buxinobantes, on the right bank of the Main. The first of these Dion Cassius calls a Celtic nation (Kajovrov Kofiy); but it is difficult to conceive that this statement should be free from error, or, if they were Celts, that they have been among the modern authors, who make them a branch of the Alemanni.

The Alemanni were a very warlike people, and the Romans particularly admired their cavalry, probably because, like the Gothic and Teutonic nations in general, they were not formed on the same model as the auxiliaries of the African provinces. Their standard was divided into gaues (pro. Gov. en); by the Romans called pagi; which had their name either from the tribes who inhabited them, or from the chiefs or dukes, called kings by the Romans, who ruled over them. Each of these, it is said, had its own people, united as one nation, and was independent in war only they all acted as one people, with united interests, and had one general. The Alemanni had a peculiar body of laws given to them by the kings Theoric, Childebert, and Clother, and improved by Dagobert.

For language, see Germanic Languages, and the art Teutonic. Notices respecting the Alemanni are to be found in Herodian, Dion Cassius, Ammianus Marcellinus, Agathias, and Aurelius Victor.

ALEMBERT (JEAN LE ROND). The birth of this eminent man is shrouded in obscurity, and it is believed to have taken place on the 16th, by others on the 17th, of November, 1717. This matter is of the less consequence, as his career ought rather to be dated from his abandonment by his parents and exposure in a public market by the church. At the age of thirteen, Jean d'Alembert, as the son of Notre Dame, at Paris, from which he derived his christian name. How he obtained his surname is not mentioned: probably it was that of his foster-mother. He was found by a commissary of police, and instead of being conveyed to the hospital of Enfants Troues, was intrusted to the wife of a poor property, and about fifty pounds sterling, for his support. Other accounts state that the abandonment was that of the mother, and that the father, upon hearing it, came forward for the protection of his son. This father was M. Deslouches, commissioner of the police department, Madame de Tencin, a lady celebrated for her talents and adventures, and authorless of several works, in one of which, Les Malafrés de l'Amour, she is supposed to have given a sketch of her own life. She was sister of Peter Gaultier de Temps, a celebrated seaman, who took the veil in the convent of Montfleur, near Grenoble, which place she afterwards quitted, and settled at Paris, where she became more celebrated for wit than virtue. It is said that when D'Alembert began to exhibit proofs of extraordinary talent, the senses for him, and acquainted him with the relationship which existed.
between them; and that his reply was, 'You are only my step-mother—the glazier's wife is my mother.'

D'Alembert abandoned his studies at the Collège des Quatre Nations, at the age of twelve years. The professors were of the Jansenist party, and were not long in discovering the talents of their pupil. In the first year of his course of philosophy, he wrote a commentary on the Epistle to the Habitations, which, with his Condemn remarks, they imagined they had found a new Pascal; and, to make the resemblance more complete, turned his attention to mathematics. The attempted parallel probably never existed except in the ingenious head of the author of the Eloge; for D'Alembert herself, in her preface to her Opuscules, collected and published towards the end of his life, in eight volumes. Though D'Alembert wrote no large system of pure analysis, the various methods and hints which are so richly scattered in his physico-mathematical works have always been considered as rendering them a mine of instruction for mathematicians.

We now turn to his philosophical productions. The French Encyclopædia, as is well known, was commenced by Diderot and himself, as editors; and it is needless to speak of his celebrated Encyclopædia, as the best epitome of all that is good in the history of our age. We can only express it, there are only two or three men in a century capable of writing. D'Alembert contributed several literary articles; but on the stoppage of the work by the government, after the completion of the second volume, he retired from his editorial labours, and the work was under the superintendence of Condorcet. The commission to proceed was at length obtained. From that time he confined himself entirely to the mathematical part of the work, and his expositions of the metaphysical difficulties of abstract science are among the clearest and best on record. D'Alembert first broached the undertaking on this subject; but he had not the latter share of mathematical talent till he was made doctor; but he soon found that he could not send his mathematical genius with them. One book after another was begged back, to refresh his memory upon something which he found he could not keep out of his head, he laid before him the next step, and the uninitiated thinkers were never anything but a philosopher—and what is that but an ass who plagues himself all his life, that he may be talked about he is dead.'

With nothing but his income of 1200 francs, and the revenue of some of the shares for obtaining those books with which he could not buy, he gave up all hopes of wealth or civil honours, that he might devote himself entirely to his favourite studies. Here he was dispirited by finding that he had been anticipated in most of what he imagined to have been his own discoveries. In the mean time he had obtained a profession, to which he at last agreed, and chose the law. After being admitted an advocate, he abandoned this profession and took to physic, as more congenial to his own pursuits. Determined to persevere, he sent all his mathematical books to the printers; but in the latter share of his talent he was made doctor; but he soon found that he could not send his mathematical genius with them. One book after another was begged back, to refresh his memory upon something which he found he could not keep out of his head, he laid before him the next step, and the uninitiated thinkers were never anything but a philosopher—and what is that but an ass who plagues himself all his life, that he may be talked about he is dead.'

Some memoirs which he wrote in the years 1739 and 1740, as well as some corrections which he made in the Analyse d'Albou, a work then much esteemed in France, procured him admission to the Academy of Sciences, in 1741, at the age of twenty-four. From this time may be dated the career of honour which ranks him among the greatest benefactors to science of the last century. We will now interrupt the order of his life to specify his principal works. In 1746, he published his Treatise on the Motion of Fluids. In 1748 his Reflections on the General Causes of Winds obtained the prize of the Academy of Berlin. This treatise will always be remarkable, as the first which contained the general equations of the motion of fluids, as well as the first mention of the principle which bears his name. (See Principles, D'Alembert.) The deductions from this new and fertile source of analytical discovery appeared in rapid succession. In 1750, he published his Treatise on the Motion of Fluids. In 1746 his Reflections on the General Causes of Winds obtained the prize of the Academy of Berlin. This treatise will always be remarkable, as the first which contained the general equations of the motion of fluids, as well as the first mention of the principle which bears his name. (See Principles, D'Alembert.) The deductions from this new and fertile source of analytical discovery appeared in rapid succession. In 1750, he published his Treatise on the Motion of Fluids. In 1746 his Reflections on the General Causes of Winds.
opinion, the assertion, if untrue, would have been unnecessary. The friendship, or love, of the lady, however, found other objects; and though D'Alembert still retained all his former affection for her, she treated him with contempt and unkindness. Her death left him inconsolable; and his reflections upon her tomb, published in his posthumous work, present the singular spectacle of a lover mourning for a mistress whose regard for him, as he was obliged to admit to himself and enter into before her death. After that event, he fell into a profound melancholy, not did it ever recover his former vivacity. His death took place October 29, 1783. Not having received extreme unction, it was with great difficulty that a priest could be found to inter him, and then only on condition that the funeral should be private.

The character of D'Alembert was one of great simplicity, carried even to bluntness of speech, and of unusual benevolence, mixed with a keen sense of the ridiculous, which, however, never impaired his splendor. He was as free from scruple in his private as in his public life. He attempted the common species of flattery. He was the friend of Frederic of Prussia, because that monarch exacted no servility; and to him only, and two disgraced ministers, of all the great ones of the earth, did D'Alembert ever dare to address himself. It was the same with Encyclopa ge and Laplace owed some of their first steps in life to him; though the former had settled a mathematical controversy in favour of Euler and against him. In his dispute with Clairaut on the method of finding the orbit of a comet, as his own method was not much in vogue, he offers to write an essay on the subject; and elopédie, he gave his friends no reason to blush for his want of temper. It was his maxim, that a man should be very careful in his writings, careful enough in his actions, and moderately careful in his words; his observance of the last, he frequently admitted, had sometimes made him a mark. The Duc de Choiseul, when minister, refused the united solicitations in his favour of the Academy of Sciences for a pension vacant by the death of Clairaut, for more than six months, and finally, in a letter written to Voltaire which was opened at the post-office, 'Your protégé, M. de Choiseul.' He cared nothing for those in power, at a time when the latter exacted and obtained deference in very small matters. M. de Pompadour, also, had all the friends of France, refused the request of Marmontel that she would employ her influence with the king in favour of D'Alembert on one occasion, alleging that the latter had put himself at the head of the Italian party in music. It was his maxim that no man ought to spend money in support of others when he was in want; and a friend, who knew him well, declared to the editor of his works, that when his income amounted to 8200 francs, he gave away half. His attentions to his foster-mother, to the end of her life, were those of a son. In his account of himself, and the character of M. de Fleury and Encyclo- pedeur, written in the third person, he speaks as follows: 'Devoted to study and privacy till the age of twenty-five, he entered late into the world, and was never much pleased with it. He could never bend himself to learn its usages and language, and, perhaps, ever indulged a sort of vanity in despising them. He is never rude, because he is neither brutal nor severe; but he is sometimes blunt, through incitement or ignorance. Compliments embarrass him, because he never can find a suitable answer immediately; when he says flattering things, it is always because he thinks them. The basis of his character is frankness and truth, often rather blunt, but never disgusting. He is impatient and angry, even to violence, when any thing goes wrong; but it all evaporates in words. He is so soon satisfied, and easily governed, provided he does not see what you are at; for his love of independence amounts to fanaticism, so that he often denies himself things which would be agreeable to him, because he is afraid they would put him under some restraint; which makes some of his friends call him, justly enough, the slave of his liberty.' This account agrees very well with that of his friends.

D'Alembert has been held up to reprobation in this country on account of his religious opinions. But on this point we must observe, that there is a wide line of distinction between him and some of his colleagues in the Encyclopedia, such as Diderot and Voltaire. When we blame the two latter, it is, not for the opinions they held, (for which they are answerable to any man,) but for their offensive manner of expressing them, and the odious intolerance of all opinions except their own which runs through their writings. Men of the best and of the worst lives appeared to be equally offensive to them, if they professed Christianity. The published writings of D'Alembert contain no expressions offensive to religion: they have never been forbidden on that account. He has openly contradicted the seven articles of faith, which the Emperor had not been for his private correspondence with Voltaire and others, which was published after his death, the world would not have known, except by implication, what the opinions of D'Alembert were. On this point we will cite two extracts (of the most contemptible Character,) which he himself admitted, during the life of D'Alembert. 'I do not know him personally; but I have always heard that his manners are simple, and his conduct without a stain. As to his works, I read them over and over again, and I find nothing there and then of talent that it was the sand Epress system of morals. If his opinions are not as sound as his writings, he is to be pitied, but no one has a right to interrogate his conscience.' La Harpe says of him, 'I do not think that he ever printed a sentence which marks either hatred or contempt of religion; but we may cite a great many passages where, apparently drawn into enthusiasm by the heroes of Christianity, he speaks of them with dignity, and, what in him is even more strange, with sentiment.'—'I knew D'Alembert well enough to be able to say, that he was sceptical in everything except mathematics. He would no more have said positively that there was no religion than that there was a God: he only thought the probabilities were in favour of theism, and against revelation. On this subject he observes, in a very just disputation, he made him think the intolerant arrogance of the atheists odious and unbearable.—'He has praised Massillon, Fénélon, Bossuet, Flechier, and Fleury, not only as writers, but as priests. He was just enough to be struck with the constancy of their faith and their practice, between their priestly character and their virtues. To these testimonies we need nothing, except to desire the reader to turn to the part of the letter of the Empress Catherine which we have quoted, and then to reflect that it was the same Empress Catherine who refused a visit from Voltaire, saying, 'that she had no Parmenides in her dominions for those who spoke disrespectfully of religion.'

The style of D'Alembert as a writer is agreeable, but he is not placed by the French in the first rank. His mathematical works show that he wrote as he thought, without taking much trouble to finish. His expression was, 'Let us find out the thing—their will be plenty of people to put it into shape,' an assertion abundantly verified since his time. He had often, he said, 'some talent, and great facility.' He liked the mathematical part of natural philosophy better than any other, and took but little interest in purely experimental researches. Hence he remained in ignorance of some of the most striking facts discovered in his day; and when laughed at on the subject, he always said, 'I shall have plenty of time to learn all these pretty things.' The time, however, as Bos- suet remarks, never arrived.

Those readers who would know more of D'Alembert should consult the first volume of Bastian's edition of his works.

ALEMBIC, a chemical vessel used in distillation. Various forms of it have been devised; the simplest consists of

2 P 2
that a by Jesuits* but nan one An used employ The Alençon the not separated the jade falling and luting and the receiver c, loosely fitted to it with a cork. If the receiver be kept partly immersed in cold water, the condensation will be more readily and economically effected. Sometimes the head is perforated at f, and furnished with a stopper; by removing this, a supply of the fluid to be distilled may be poured into the body, without disturbing the luting by which the body and head are kept in close contact. An alembic of this kind is not very useful for the general purposes of distillation; it can scarcely be applied to a receiver rec spit pro j ner pro ver of f rep tion fri whi wat boil run the lot

1 cor.

becomes hot, is let out at the cock i, and a fresh supply of cold water is poured in; the condensed vapour is received at the end of the worm in the receiver k.

Fig. 4 represents a water-bath, also made of tinned copper; it fits into the body a, and is heated by the medium of the boiling-water contained in it, instead of the fire directly applied. When the water-bath is used, the head, fig. 2, is fitted into it in the manner already described with respect to the body a, fig. 1.

Fig. 5 shows the whole apparatus placed in the furnace, with the worm attached to the pipe of the head.

The alembic in the form now described, is but little used; the addition of the worm surrounded with cold water has rendered it unnecessary to employ any refrigeratory round the head; and the apparatus thus simplified is the common still, which will be described under the article Distillation.

ALENÇON, the capital of the department of the Orne, in France, stands in an extensive plain, on the north-west bank of the Sarthe, which here forms the boundary between the departments of the Orne and the Sarthe. The town itself is not very large; but its five suburbs, one of which stands on the opposite bank of the Sarthe, add to its population and importance. The streets are generally broad, and ornamented with some handsome buildings, especially the poor's residence, the corn-market, and the town house, towers of which last are the remains of the castle of the counts of Alençon. These nobles appear conspicuous in the ory of France; one of them fell at the battle of Agincourt, and In the population of Alençon (including, we presume, the suburbs) is given by Malte Brun and Balbi at 14,000; trade of the place is very considerable. Its chief manufactures are of lace and muslin, the latter of which gives employment to more than two thousand persons, who are aged in making and embroidering it. Some cottons are also manufactured, as well as leather, glass, and glass. The agricultural products of the neighbourhood, including cattle, horses of good quality, goose down and quills, cider, add to its commerce. The lace manufacture, which has acquired considerable celebrity, was patented during the administration of Colbert, in 165. The proprietor had a monopoly for ten years, and a ree of 36,000 livres, or about 1500l. There are at Alençon a library of above 6000 volumes, an archaeological society, a museum of natural history, and a tartory; the last-mentioned is surmounted by a lantern, and used as an observatory. There is also a theatre; horse-races take place annually, on the 25th of August. Many religious houses and hospitals, and a Jesuit tartory, existed in the town before the revolution. In her ages it was fortified, though the outworks and the outer part of the wall are now destroyed, and little remains to its formidable defences but four gates, by which enter the town. It was the birth-place of the historian Denon. Alençon is in 48° 26' N. lat., 5° E. long. of enwich. Distance from Paris 116 miles W. by S. The neighbourhood of the town produces iron, and stone ed for building or for mill-stones. In the quarries, a very few miles distant, were found the false diorite, called the diamonds of Alençon, said to equal the stone in brilliancy though not in hardness. The mine said to be now nearly exhausted.

The arrondissement of Alençon contains 416 square miles, and above 70,000 inhabitants.

ALENTEJO, or ALÉMTEJO, the largest province of kingdom of Portugal, so called from its position (alem, beyond the Tagus). It is separated on the east by a Spanish Extremadura and Andalusia. The boundary this side is determined, to begin from the north, first by river Sever, running into the Tagus, soon after by the Guadiana and the Caya, tributaries of the Guadiana, the line from the one to the other stream so as to avoid the estuary of Badajoz. It then follows the Guadiana, leaving made on the east, which since 1801 has belonged to the nish crown. North of Mourão it bends from the river to S.E. so as to meet first the Arda, and then the Chanza, latter of which again conducts it to the Guadiana. Far point the boundary runs west to the ocean, so as to separ Alentejo on the south from the Algarve by the ridges do Cabeira and Monchique. On the west it is bounded by the provinces of Estremadura and now that by the ocean. The Tagus partly forms its boundary on the north, but in the centre of the line the Portuguese province of Estremadura again extends south of the river. In this part the two provinces are divided by
small streams called the Soro, Erra, and Zatas, the two former of which run into the third, the Zatas itself falling directly into the Tagus. The province covers a surface of 883 square leagues, or 7947 geographical square miles, and its population is given by Antillon and Miliano at 1,00,000, which is 45 to the square mile, while the province of Entre Douro e Minho has a population of 346 to the same surface. Some accounts state the population at only 265,000 in the year 1820. The most fertile parts are around Evora, Portalegre, Elvas, Villavicencia, Beja, and the peninsula of Kouto. The sierras or mountains are the already-mentioned Sierra de Monchique on the south, which rises at one point to the height of 4078 feet. From the northern side of this mountain the waters are collected into the river Sado, which reaches the Tagus at Alcacer do Sacramento. The mountainous country from this river is very injurious to the health of the inhabitants. The Sierra de Portalegre rises to 2130 feet; that of Osa, north of Evora, slightly exceeds this height. Nearly the whole country is covered with mountains, but their course is so varied that description would be at once difficult and useless. The harbours of Sines and Villa Nova de Milfontes are of little value. The population is not very industrious, yet corn is produced to such an amount as to supply the interior, according to the estimates of the supply of wine and oil is less abundant. The former is altogether consumed within the province, and a considerable quantity of oil is often imported from the bordering regions of Spain. There are many quarries of marble, white, green, and red, which are of considerable importance; and of iron, it contains the eight comercial districts of Evora, Elvas, Portalegre, Ourique, Villavicencia, Beja, Crato, and Aviz. Evora, the chief city of the whole province, is the seat of an archbishopric; of two bishoprics, one of Tavira and the other of Elvas, Portalegre, and Beja. Elvas is also a place of great military strength, and with the adjoining fortress, La Lippa, protects the frontier on the side of Badajoz.

ALEPPO. [See HALEP.] The Nile is one of the five divisions of the principal province of Piedmont, which is again subdivided into the provinces of Alessandria, Asti, Casale, Acqui, Voghera, and Tortona. The whole division is said to contain a population of above 100,000.

The town of Alessandria is intersected by hills of small elevation, the spurs or offsets of the Apennine chain, which divides Piedmont from the Riviera of Genoa: it is not well watered, though it is bounded on the north by the Tanaro river. The Tanaro receives the Belbo, a little above Alessandria, and the Bormida (increased by the Orba) a little below it. The chief products of this province are, maize, wine, silk, madder, and the best flax in Piedmont. It contains very little foreign trade, and the internal commerce is entirely in the hands of the inhabitants.

ALESSANDRIA, a town and fortress in Piedmont, the capital of the province of the same name, near the confluent of the two rivers Tanaro and Bormida. It was built by the Lombard league in 1183, as a barrier against Frederic Barbarossa and the Guibelines of Asti. It was a declared a free city like the others of the league, and was named Alessandria in honour of Pope Alexander III., the protector of the Lombard league and the strenuous opponent of the emperor. In 1174, Frederic, having returned to Italy, besieged the new city, which his soldiers, seeing their houses covered with straw, had then been abandoned, and called it the commune della paglia, or 'of straw,' an appellation which it has since retained. Frederic, however, after four months was obliged to raise the siege. Afterwards Alessandria passed to the House of Savoy. It came under the power of the Marqueses of Montferrat, and finally of the Dukes of Savoy. Its citadel is one of the strongest places in North Italy, and has been repeatedly besieged, and taken and retaken, by the French and Austrians. Alessandria has ten forts, which are protected by a network of fortifications by order of Bonaparte, who wanted to make it a chief stronghold in Piedmont, but, by the treaty of Vienna, the fortifications have been razed, and the citadel is now a vessel of war. It has a fine square planted with trees, a public library, and some good palaces and churches. The population is above 30,000, who carry on a considerable trade; a well-attended fair is held twice a year, in April and October. There are some manufactories of linen, silks, cotton stockings, cotton handkerchiefs, and woolen cloth. Alessandria is one of the most considerable and lively towns of Piedmont, situated in a wide and fertile plain 70 miles E. by S. of Turin, and 60 N. by W. of Genoa. The field and village of Marengo are within sight of Alessandria on the opposite or right bank of the Bormida, on the road to Tortona; 44° 55' N. lat. 8° 36' E. long.

ALEUTIAN ISLANDS, called also Aleutian, Aleutic, or Aleutksy Islands, these several names being derived from the Russian word, aleut, which signifies a bold rock.

This group of islands is situated in the North Pacific Ocean, between Cape Alaska in North America, and the peninsula of Kamtschatka in Asia; describing a regular arc which extends from 163° of west to 166° of east longitude, and thus comprehends 31° of longitude. The islands which form the two extremities of the chain, viz. Oomenak, which is separated by a narrow channel from Cape Alaska, and Belonging's island, are the principal islands of the group; the others, which are not so much inhabited, are the ones in the 55th parallel of north latitude, while the others extend in a curve towards the south, the centre one of the chain being situated in the 53d parallel.

The first attempt at geographical discovery in this region was planned, a short time before his death, by Peter the Great of Russia, with the view of ascertaining the distance between the Asiatic and American continents. The plan was prosecuted, in the following reign, by a Dane, named Christian Asbjornsen, who, being instructed in the plan by Peter with his own hand. Two voyages prosecuted in 1728 and the following year, were not attended with success; but a third expedition, undertaken in 1741, was productive of a better result. Behring discovered the coast of America in 55° 20' N., lat. and 167° E., long, and in the year 1168, by the order of Peter the Great, Behring's island, then uninhabited, where he soon after died. This island, which is 104 miles long, with a mean breadth of 15 miles, is, as before stated, in 55° N. lat. and 167° E. long., and 407 miles N.E. of the harbour of St. Peter and St. Paul in Kamtschatka.

Behring's island having thus become known to the inhabitants of Kamtschata, they were led thither in search of sea-otters and other fur-bearing animals; and some of their vessels were driven by the easterly winds into these islands, in those latitudes, the other islands of the group were successively discovered. Geographers at first divided this Archipelago into three groups, calling those nearest to Asia the Aleutian, those next to the centre the Andrenovian, and those which are nearest to America the Fox Islands. But these distinctions are all comprehended under the name of Aleutian Islands. The derivation of this name has already been given; the Andrenovian group were so named in honour of either the Swedish king or a celebrated Russian captain or her owner, Andreas Tolstoy. The Fox Islands received their name in consequence of the great number of those animals found upon them.

A survey of the entire chain was made by two Russian officers in 1768, for the Emperor Catherine, with knowledge of the islands and of the adjoining coasts of the two continents is principally derived from the narrative of the last voyage of Captain Cook, who, in 1778, determined with accuracy the positions of the islands, and of the more remarkable points of the two coasts.

As early as 1785, establishments, protected by fortifications, were formed by Russian adventurers in many of the islands. These were all the result of private enterprise. The success by which these were started led to the formation of the Russian American Company, whose operations were carried on during several years in a somewhat irregular manner; but in 1799 the association was invested with considerable privileges by the Russian government, and it still continues to prosecute the trade in furs with much activity.

The traders who first visited these islands are charged with having acted with the most wanton cruelty towards the natives, whose revengeful feelings were at length so far excited, that they seized upon every opportunity for retaliating upon the galleys and the colonists. The Russians, in destroying the Russian vessels and murdering their crews. Notwithstanding these disasters, other adventurers were still tempted to go in quest of the valuable skins which the islands supplied, but they were often themselves murdered by the natives, and by their owners, who, after discovering the trade, would not procure them any more presents.
The number of islands which compose the entire chain is very considerable; above forty have received names. The most important of those situated to the eastward—the Fox Islands—are, Unomak, Oonalashka, and Oonmack. Those composing the Androven division are smaller than the others, and are seldom visited. The principal of them are, Amlak, Atchka, Teshchina, and Tan vanga. The two last mentioned have volcanoes, and Teshchina possesses a high hill which is apparently an extinct volcano. The division nearest to the Asiatic coast contains, among other islands of less importance, Semitchi, Atoca, Agripo, Copper Island, and Belring's or Commodore Island.

The prospect on approaching any of these places is described by Kotzebue to be frightful and desolate. Black masses of lava appear to rise perpendicularly from the sea to a great elevation, the whole of each island presenting the appearance of pointed mountains lying close to each other, and some of them having their summits above the clouds. The islands are all of them destitute of trees, and the inhabitants would suffer much inconvenience in consequence, but for the great abundance of drift wood from the American coast which is continually thrown upon their shores. An unsuccessful attempt was once made to plant a species of pine at Oona-lishka.

The towns of the Aleutian Islands are all so rocky and so encompassed by breakers, that the navigation among them is dangerous. The whole group bears evident marks of a volcanic origin, and on several of the islands are volcanoes in a state of activity at the present time. The soil is in general of a black, and some of the small spots of high ground, is of better quality, gardens have been formed in which several esculent vegetables arrive at tolerable perfection. Cabbages, carrots, turnips, radishes, beet-root, and even cucumbers are commonly raised under glass houses which are sometimes very large. Potatoes have been recently introduced, and appear likely to be of great benefit to the inhabitants.

The islands are amply provided with springs of water, which, in some instances, flow from the bases of the mountains directly into the sea, and in other cases form considerable lakes, the superfluous waters of which are drained off by natural canals.

The land animals which are general on the islands are, bears, wolves, beavers, ermines, and river-otters. The sea-otters, whose skin is held in much estimation by the Chinese with whom the Russians trade, has had its numbers much diminished. Red, grey, brown, and black foxes are seen in great variety on the Fox islands. Seals and whales are abundant on the coasts, and sea-lions are occasionally met with. The kinds of fish most usually caught are, salmon and halibut; the latter of these are sometimes of an immense size.

The valleys of some of the islands furnish an abundance of herbage, which would support a considerable number of cattle throughout the year.

Almost the only occupations of the inhabitants are fishing and hunting, and the preparation of implements necessary for the prosecution of these pursuits. In fishing they make use of a species of canoe, which they call a baidar, and which consists of a skeleton of wood, over which a covering of seal skins is extended. Thus constructed, these canoes are so extremely light that they may be carried about by one person without difficulty. They are long and narrow in form, and are most usually made to hold only one person; sometimes they are calculated to carry two, and very rarely three people. Each canoe has a kind of deck formed of skins, in which, according to the number it is intended to carry, one or more round holes are left just fitted to the size of the hands. These canoes are very commodious for the transportation of these vessels by means of double paddles seven or eight feet in length. They sometimes venture in them to a considerable distance from the land, even in very stormy weather.

Domestic occupations, such as making clothes, and even the covering of canoes is performed by the women, who likewise make mats, baskets, and other useful articles of straw. The native inhabitants are mostly short, but stout made and unornamented. But little difference is observable in the clothing of men and women, which consists of a frock made of seal skin, fastened round the neck and descending below the knees. The same material is employed for making boots. Both the men and women bore their under lips, and by way of ornament, insert pieces of bone in the holes.

They likewise ornament their frocks with glass beads, feathers, beaks of sea parrots, or red goat's hair brought from Siberia. They all wear a kind of wooden cap which is dried, generally green, and adorned with figures carved out of sea-cow teeth, or with beads. The women usually wear rings on their fingers, and bracelets of glass beads above the wrists and ankle joints.

The food of the Islanders consists almost entirely of fish and the flesh of sea animals. They provide in summer a store of fish which they dry and lay up in small huts for winter use. A very favourite species of food with them is whale blubber, and this abundance, when it becomes too rancid for even an Aleutian stomach, they use for lighting and warming their dwellings. Their habitations are holes dug in the earth and covered with sticks, over which grass and earth are thrown. The entrance is from the roof, whence also light is admitted through a window covered with dried fish skins, and the dwelling is divided into separate apartments by means of seal skins and straw mats, so that each one forms the abode of several families.

The Islanders are inclined to be superstitious, and are great believers in charms. Some have been baptized, and make a profession of the Christian religion according to the faith of the Greek church. Polygamy is common, if indeed marriage may be said to exist among a people where the sexes are so scarcely seen as to take as many wives as their means enable them to maintain, and may send them back to their friends to form new connexions when those means are diminished. It sometimes happens that one woman will live at the same time with two husbands.

It is extremely difficult to form any estimate of the population of the islands. There is reason to believe that it has very seriously diminished since the settlement among them of the Russian traders.

Half a century ago Oonalashka was assumed to contain 1300 inhabitants, while recent accounts estimate the population at only 300 souls. (Cook's Third Voyage, Coxe's Account of Russian Discoveries, Kotzebue's Voyages round the World.)

ALEXANDER. [See Paris.]

[Head of Alexander the Great, enlarged, from a coin in the Bodleian Library, Oxford."The head is repeated reversed, with the reverse, showing the size of the coin.]

ALEXANDER III., commonly called the Great, son of Philip II. king of Macedon, was born B.C. 356. His mother was Olympias, the daughter of Neoptolemus king of Epirus, through whom Alexander claimed a descent from the great Pthiotic hero Achilles. (Pausan. I., 11.)

The history of Alexander forms an epoch in the history of the world. Whatever difficulties we may have in making an exact estimate of his personal character, we can hardly assign too much importance to the great events of his life, and their permanent influence on the condition of the human race.

The overthrow of the great Asiatic monarchy which had so often threatened the political existence of Greece, the victorious progress of the Macedonian arms from the plains of
Thebes to the banks of the Danube, and from the Hellespont, the boundary of rival continents, to the Nile, the Xystarites, and the Indus. His foreign conquests, therefore, were made whilst rising in power, and in the main points of historical declaration, and are still the subject of vulgar admiration. But the diffusion of the language and the arts of Greece, the extension of commerce by opening to Eur- opes the ports of the Hellespont, the advance of natural science and geography by the expedition of Alex- ander,—these are the real subjects for enlightened and crit- ical research. Of the numerous writers who treated of the campaigns of Alexander not a single contemporary remains; and our knowledge of the nature of civil government, as well as of history, has been increased considerably by books which have lived several centuries after the age of Alexander, and founded their narratives on such contemporary records as then existed. With the exception of Arrian, not one of them was equal to the subject; and even he was often too deficient in knowledge of Asiatic geography to enable him to make a proper use of his materials. The accounts of the different writers, though agreeing in all the great events, offer no small discrepancies when we come to details, and, with the exception of Arrian's History, are marked by a general absence of some of the incidents which we shall notice these authorities briefly at the end of this article.

If we knew nothing more of Alexander than that Aristotle was his master, the memory of the philosopher would pre- serve that of the pupil. But it is a rare coincidence to find that two of the greatest men of all time, and of all countries—philosophers—the master of all knowledge teaching the future master of the world. Some of the great projects of Alex- ander might pass for the mere caprice of a man possessed of unbounded power, for his dreams were petty compared with his habit of giving him lessons in political science, and written for his use a treatise on the art of government. That the pupil amidst all his violence and excesses possessed a vigorous and clear under- standing, with enlarged views of the advantages of com- bined arms for the protection of the empire, is amply con- firmed by some of the most prominent events of his life. Unfortunately Aristotle was not his only master; the flattery of Lyaminachus, and the obsequiousness of his attendants, conspired to cherish those ungovernable passions which seem to have existed in the character of his father. The military education of Alexander commenced from his boyhood: he was trained to be expert in all manly exercises, and particularly in the management of a horse. His first essay in arms was made at the battle of Chero- nese, (a. c. 336), in which his father commands. We shall notice these affairs briefly at the end of this article.

Philip was murdered (a. c. 336) during the celebrat- ing of the wedding at Messene, which occasioned the eve of setting out on his Asiatic expedition, at the head of the combined force of Greece. His sudden death in- spired the states which had been humbled with some hope of throwing off the yoke of the Macedonian kings. Alex- ander's first step was to produce his father's will, and to give the great designs of his father. Though threatened with danger on all sides, from the movements of the barbarians on the north, and the restless Greeks in the south, his cour- age and address saved him. The Thessalians readily chose him as the head of their confederacy; and the Amphictyons confirmed him in the honours which had been granted to Philip. His next step was to march an army into Bocotia, to check the beginning of insurrectionary movements, by showing himself at the gates of Thebes. His vigour secured for him the boundaries which were required for the army of Asia, the states of Greece, Lacedemon excepted, transferred to him, at Corinth, with abject flattery and mean submission, the office of commander-in-chief against Persia, which they had already conferred on his father.

In giving a brief sketch of the chief events of Alexander's short life, we may observe that without a constant reference to maps it is impossible to form any idea of the rapidity of his movements, the natural obstacles which he had to overcome; and to such an extent that our knowledge of his movements, the natural obstacles which he had to overcome, and to such an extent that our knowledge of his movements, has been increased considerably by books which have lived several centuries after the age of Alexander, and founded their narratives on such contemporary records as then existed. With the exception of Arrian, not one of them was equal to the subject; and even he was often too deficient in knowledge of Asiatic geography to enable him to make a proper use of his materials. The accounts of the different writers, though agreeing in all the great events, offer no small discrepancies when we come to details, and, with the exception of Arrian's History, are marked by a general absence of some of the incidents which we shall notice these authorities briefly at the end of this article.

Theophrastus, who was contemporary with Alexander, seems to have been ill qualified to retrieve the falling fortunes of the monarchy: he was deficient in courage and military skill, and had no hope of opposing the invader but by turning against him the arms of the Greeks themselves.
From the time of Cambyses, the son of the first Cyrus, to the age of Alexander, we find renegades Greeks constantly in the pay of the Persian monarch, ready to serve their new paymaster against those who were united to them by kindred and language. The civil commotions which so often disturbed the peace of Grecian communities were also continually driven on by counsellors from the East, who sought to raise the rank and property which they had lost at home. At this time the hopes of Darius rested on Memonon, a Greek of Rhodes, whose military skill might have made him, with better opportunities, a formidable opponent to the Macedonian prince. To the Macedonian, the courage of Alexander, who himself killed two Persians of the highest rank, and to the long spears of the Macedonians, the victory may be mainly attributed. The Greek infantry in the Persian army was cut to pieces, with the exception of 2000, who, according to Xenophon, came safe from the field of battle, and declared the Macedonians to be the most wonderful people and the best slaves. Alexander showed, after the battle, that he knew how to win affection by flattering self-love, as well as to lead men to conquest. He visited his own disabled soldiers, listened to their exploits, and gave gifts to the parents and children of those who had fallen privileges of distinction and immunity from civil burdens. Twenty-five horsemen belonging to the Companion cavalry, — a kind of military order, perhaps instituted by Alexander, — were in the first assault Lysias, the chief sculptor, was ordered to make their figures in bronze, which were placed in the town of Dum in Macedonia, and afterwards adored one of the public buildings of Rome.

This success was of the utmost importance to Alexander, by preparing the submission of most of the Greek towns on the Aegean, in which he adopted the policy of establishing democratic forms of government, with the double purpose of showing that he had come as the liberator of the Greek states, and perhaps, too, with a view of preventing their conversion from Greece by the convenience of government which they would have in quarrelling with one another.

To crown the compass of a short article the military operations of Alexander's campaigns would be useless to the叙述 of the narrative of his actions were too vague and insufficient to enable us to form a clear conception of the events. Nothing but a careful examination of a map, and some idea of the nature of the country, can give a reader any notion of the vigour of the Macedonian general. One of the most memorable events between the battles of the Granicus and Issus was the capture of Haliacmon and Caria, which Memnon only left when it was no longer possible to hold out. This memorable siege is minutely described by Arrian, whose personal experience (see Arrian) enabled him to detail the military events of Alexander's life more faithfully than the compiler Comparing the events, nothing but a careful examination of a map, and some idea of the nature of the country, can give a reader any notion of the vigour of the Macedonian general. One of the most memorable events between the battles of the Granicus and Issus was the capture of Haliacmon and Caria, which Memnon only left when it was no longer possible to hold out. This memorable siege is minutely described by Arrian, whose personal experience (see Arrian) enabled him to detail the military events of Alexander's life more faithfully than the compiler.

The progress of Alexander southward was marked by an event in which the durable features of bear nature bear evidence to the truth of the story. In passing from Phaselis to Pergamon, part of his troops being newly made, the enemy had reeled from the difficult route in the interior; he himself proceeded along the shore of Lydia, where the mountains rise from the sea step by step like a ladder, leaving between the base of the land and the sea the Greeks on the beach, which offered a shorter and more convenient road. The projecting cliffs, however, over which there appears to have been at that time no road, would render it necessary for the men in some places to wade through the water, though without the danger; but a fortuitous opportunity was offered for accomplishing this, by the depression of the sea in this part, consequent on the blowing of a north wind. (See Beaufort's Karamania, p. 116. Arrian, I., 26.) Among the numerous writers of Alexander's history there were not wanting those who embellished it with stones of miscellaneous interpositions, and unmeaning flourishes of rhetoric, in which they showed at once their own ignorance of the character of the country traversed by Alexander, and reckoned on a corresponding ignorance and credulity in their readers.

After gaining the strong post of Celaenus, near the source of the Meander, the Macedonian general marched to Gordium in Phrygia, (n. c. 333) where he had another opportunity of turning to profit the belief of a superstitious age. The empire of Asia was promised to him who should untie the complicated knot which fastened to the pole a figure of the god. Alexander, who, like a child, came to the Meander, relieved himself from the difficulty, either by cutting the cord, or some equally expeditious process. The promptitude of his resolution, and the presence of a victorious army, may partly have helped him in giving the credit of having fulfilled the intentions of the Deity.

The army was now increased by fresh reinforcements from home, and the return of the new married soldiers who had been sent to winter in Macedonia. In approaching the passes which lead from the central plateaus of Asia Minor into the plains of Cilicia, Alexander must have been in the track of the Greeks who accompanied the younger Cyrus in his expedition against his brother, not quite a century before; and the march from the mountain pass to Tarsus (the modern Birecik) was without any difficulty. A remarkably narrow defile, about twenty miles north of Tarsus, which is cut in the rock, has been conjectured to be the pass described by Xenophon and Arrian. At Tarsus the career of Alexander was nearly terminated by a fever, either communicated by his troops or by fresh colours of the Syriac, which covered the island of Cyprus. His sudden death relieved Alexander from an opponent whose operations in Greece might have compelled him to give up the dazzling prospect of Asia conquest; but the little bit of time Memnon died, and with him the best hopes of Darius. This skillful commander, at the time of his death, was in the Aegean with a powerful fleet, to which Alexander had nothing to oppose: he was master of Chios, the chief port of Lesbos, and ready to fall on Eubea and Macedon, which their officers attributed, as had Macedonians. His sudden death relieved Alexander from an opponent whose operations in Greece might have compelled him to give up the dazzling prospect of Asia conquest.

From Tarsus Alexander marched, partly by the route of the younger Cyrus, along the Gulf of Issus to the little town of Myriandrus in Syria. Darius had for some time occupied an extensive plain in Syria, well adapted for the evolutions of his large body of cavalry, and for the disposition of his immense array of foot-soldiers. As the Macedonian was a better desertor, he abandoned this position for one in which the defeat was almost certain. An offset from the range of Taurus runs down to the Gulf of Issus, (the modern Gulf of Skanderoon,) and terminates in the high land of Cape Kizary. The mountains project into the Gulf of Issus, leaving in some places a plain barely large enough for the battle-ground of an army in one particular: the spot the passage is so narrow as to be capable of an easy defence. By this unguarded pass Alexander had advanced into Syria, while another north in the mountain range, Darius moved from Syria to the plain of Issus with the river Pinarus in his front. He was now in the rear of Alexander; but he had engaged himself in a position where victory must be considered by the Macedonians. Alexander marched back through the Syrian pass, and found the Persian king prepared for battle in the plain of Issus. The left wing of the Macedonian army was protected by the sea, and the right by the position of the Persian lines. The Macedonians, on the right, who were opposed the Persians from effectually out-flanking the Greeks on that side. The Persian king, though possessing a far superior force, waited the attack on the opposite bank, as if conscious of his inferiority, and anticipating a defeat. Alexander himself was on the other side of the river, the Persians and Phœnicians were defending a natural line of the stream, attacked the Persians with impetuosity, and soon put their left wing to the rout. The 30,000 Greek mercenaries in the Persian army offered a stout resistance to the Macedonians; and the Persian cavalry on the right, who were opposed by the Persians, fought with such bravery as long as their king remained on the field of battle.

The Persian king himself gave the signal for flight when he saw his left wing entirely routed; and the cavalry, soon following the example of their leader, turned their backs with
the rest of the army. The slaughter, though perhaps exagger- 
ated, must have been prodigious, from the nature of the 
ground; and Ptolemy, the future king of Egypt, who was in 
the battle, relates that in one narrow pass the pursuers 
crossed the road on the upended bodies of the slain. Darius 
succeeded in escaping over the Euphrates by the usual ford 
at Thapsacus, (33½ 20' N. lat.) but his mother, wife, and 
his infant son, who had attended him to the field of battle, fell 
into the hands of the conqueror, and experienced from him 
the same fate which befell to Pelusium and Tyre. 

Some consider that the close of a.c. 333 may be considered as having 
devised the fate of the Persian monarchy: it opened to Alexander 
a passage towards Egypt and Babylon, and checked the designs 
of Agis and Pharnabazus in Western Asia and the Arabian. 
Osroens, which had received permission to win over to 
damable than the armies of Darius. A single day was sufficient 
to disperse a numerous army, but the labours of many months 
were necessary for the capture of Tyre. This great commer-
cially was situated on an island (33° 12' N. lat.) separating 
from the mainland by a channel about half a mile wide; 
which, on the side of the continent, was shallow and muddy, 
but had about eighteen feet water close to the island. The 
islend itself was defended by lofty walls, and well supplied 
with water; and, according to most historians, the ancient 
wealthy city had been the great entrepôt between the eastern 
and the western world; and through it the inhabitants of 
Europe had long received those Asiatic products which we 
find mentioned in the oldest Greek writers. Her commerce 
and manufactures shewed in what point we placed in the 
venturous traders, through many intermediate hands, received 
the products of countries which the Tyrians themselves never 
visited. Her merchants were princes, and her warehouses 
were stored with all that contributes to national wealth and 
decorum; and, perhaps under the influence of the prophetic 
words of Ezekiel a most glorious picture of the prosperity of this 
great empirem, expressed with all the sublimity and 
strength of the ancient Hebrew poetry. (See Volney's 
explanation of the name of Tyre.)

The cities of Phoenicia submitted to Alexander on his 
approach, and the ancient Sidon yielded without a blow; but 
Tyre, proud of her naval superiority, refused to grant all 
that was demanded, and prepared for a vigorous resistance. 
Alexaner, having resolved to assault the place, was at first 
une the mainland and the city by a causeway, which 
was not effected without great labour and difficulty. It is 
said that Nebuchadnezzar had taken the city by the same 
means; but, if the story is true, his causeway must have been of such 
a magnitude as to be barely visible from a distance. As the probable 
that the island was not occupied till the old city, which 
was on the mainland, had been taken by Nebuchadnezzar. 
Alexander's work still remains, and the island of Tyre is now 
part of the mainland. After a laborious blockade of seven months, 
the Tyrians surrendered, and the besieging army was 
the slaughter of 8000 Tyrians; 
30,000 more were sold into slavery; and, if we trust the 
authority of Diodorus and Curtius, the conqueror was guilty of the 
inhuman treatment of the inhabitants. The plain of Arrian, 
which was the last bulwark of the Persian monarchy was now gone, 
and the dominion of the sea, as well as of the land, was in 
the hands of the Macedonians. Under the Persian monarchy 
Tyre enjoyed favour and privileges, on condition of furnishing 
the main part of the navy, in all the wars with the Greeks; a 
condition to which the Tyrians probably were not averse, 
as it gave them additional means for crushing the Greeks, 
whom they hated as their rivals in the commerce of the Med-
iterranean. The siege of Gaza, one of the strong towns of Palestine, 
collected a considerable force of the Persian army. 
In the year 332 B.C. Alexander entered Gaza, 
there fought an obstinate battle; the inhabitants did not preserve the city 
from being taken, nor the women and children from being 
sold into slavery. 

After the capture of Tyre and Gaza, according to the autho-
rity of Josephus, Alexander marched to the holy city of 
Jerusalem, intending to punish the inhabitants for their 
refusal to supply him with troops and money. The High-
priest Jaddus went forth to meet the conqueror, attended by 
the priests and the people, to show him the image of the 
intellectual of the Jewish religion. Alexander was so struck 
with this spectacle, that he pardoned the people, adored the 
name of the Most High, and sacrificed in the temple, accord-
ing to the directions prescribed to him by Jaddus. The Book 
of the Prophet Daniel was shown to him, and that 
point put out in which it was foretold that the King of 
Greece should overcome the King of Persia. With this, as
a certain victory. Darius fled to Ecbatana (Hamadan) in Media; and Alexander, who no longer had any reason to fear such an opponent, marched unmolested to take possession of Babylon, and the empire of Asia. This battle is more commonly known by the name of the battle of Arbela, (now Erbil,) up to which city Alexander pursued Darius. Arbela is between forty and fifty miles east of Gaugamela.

The battle of Arbela may be considered as an epoch in the history of Alexander. Though Darius was still alive, he could no longer be considered as king; his power was eroded; the fairest part of his empire had submitted; and the progress of the conqueror was henceforth attended with almost immediate submission. But the conduct and treatment of Alexander began to unsavor with success; he gradually assumed the state and manners of an Asiatic sovereign; and, unrestrained by habits of self-control, he gave way to the most guilty excesses, which, if not actually destroying the evidence of history, it is equally futile to palliate or deny.

The ancient city of Babylon, which had so long resisted the first Cyrus, and the first Darius, yielded, without a blow, at the approach of Alexander. The Macedonian adopted a most generous policy towards the Persians, whose fanaticism and intolerance to foreign religions are hardly exceeded by that of the followers of Mohammed. Xerxes had ruined the temples of Babylon, and even had dared to profane the shrine of the Great Bel, and to murder the high priests of the temple. Alexander restored the temple of the deity, and showed himself a worthy protylee, by sacrificing to Bel, according to the rites prescribed by his ministers the Chaldeans.

A march of twenty days brought the Macedonians from Babylon to the Chiaspera (the Kerah,) one of the east side of which stood the city of Susa, (Sus,) then the chief residence of the Persian kings, and the depository of their treasures; now only remarkable for its extensive ruins, which stretch for several miles along the banks of the Kerah. From Susa the active monarch resolved to march into Persia, (the Karoon,) and thence by the route which Timour afterwards followed, along the valley of Ram Hormuz, to the mountain pass (Kala-Sibid, the white castle,) which led to Istakhar, (Bokhara,) the original seat of the Persians. His object was to surprise Persepolis, in which he succeeded; and, according to some accounts, he burnt the palace of the Persian kings in a fit of drunken madness, and at the instigation of Thais, an Athenian prostitute, who accompanied and haunted him. It is difficult to believe in the circumstances as they are related; and it is almost certain that the real destruction of Persepolis belongs to the Mohammedan epoch. Under the name of Isatikah it is often mentioned by oriental writers; and the immense remains of Tachis, a town of forty columns, which once the court of the Persian kings, have been described and copied by various modern travellers. Persepolis was a kind of sacred city to the Persians; the former capital of their early empire, and the burying-place of their monarchs after the seat of government was removed to Ecbatana.

From Persepolis Alexander marched to Ecbatana, (B.C. 330,) but not by a direct route. On his approaching the city Darius fled past the ancient Rhagae, and through the passes of the Elbours mountains, (Capua pylen,) to seek a refuge in his Bactrian provinces. In fact, he was now a prisoners, in the hands of the Bactrian satrap Bessus, who accompanied him in his flight, and assumed the command. At Ecbatana the Thessalian cavalry and many of the allied troops had quitted his railway of fifty years' duration, and he had chosen his capital, with the object that the court of the Persian kings, have been described and copied by various modern travellers. Persepolis was a kind of sacred city to the Persians; the former capital of their early empire, and the burying-place of their monarchs after the seat of government was removed to Ecbatana.

The march of Alexander from Rhagae, (the modern Rey, whose extensive ruins lie near Tehran,) to his entrance into India, is the most obscure part of his history. The geography of those regions is still very imperfectly known to us, and the brief narrative of Arrian, our sole trustworthy authority, only enables us to form a general idea of the movements of the army. Alexander penetrated into regions where no European army has yet followed him, and few travellers have ventured to explore. The surprising rapidity of his movements, and his capacity to endure toil, are not surpassed by what is recorded of

Genghis Khan and Tamerlane, though we may readily admit that Arrian in this part of his work may have exaggerated, and fallen into error from unavoidable ignorance of the country. It is the same with distance as with time; those who look at the map, and know the route that the Macedonians pursued, cannot convince us that all of the conquerors who ever troubled the peace of mankind, he was the most unwearied and daring.

From Rhagae the Macedonian commander passed through one of the declives in the Elbours mountains, commonly known by the name of the Caspian Pass, and in one night accomplished, while pursuing Darius, a distance of 400 stadia through the arid wastes of Parthia, with foot-soldiers mounted on horses. Just as Alexander was coming up with the fugitives, he was met to more than fifty of his Persian attendants assassinated their unfortunate master, and made their escape with 600 horsemen. Alexander sent the body to Persepolis to be interred in the tombs of the Persian kings.

The army advanced into the ancient Hyrasana, composing a part of the modern Mazanderan, a country hemmed in on one side by lofty wooded mountains, and on the other stretching down in a sloping plain to the great inland waters of the Caspian. The king's object was to gain over the remnant of the Persian army in the region; and, as his progress eastward might be dangerous, and the occupation of the conquered provinces insecure, if he left in his rear a body of armed Greeks. After some negotiations, they came and surrendered at his camp, and Alexander had the good policy of pardoning all, and compelling, in his own name, to pay his on the same terms as they had served the Persian king. Some Lacedemonian embassadors to king Darius, who surrendered at the same time, were put in chains. In Zadarwa, the capital of Parthia, (a city whose name is a corruption of Areia,) the king was met by Sayyid Khurshid, Alexander's confidential minister, who conducted him to Persepolis,

...
policy, the offspring of fear, was the only remedy that a Turkish sultan would have applied in a similar case. No proof of Parmenion's guilt is brought forward, and the absence of all real charge against him, tends rather to show that the tyrant had basely murdered the son, and feared the just resentment of the father.

The mountain torrents, probably along the valley of the Helmand, to the Ariaps, a people to whom the first Cyrus had given the name of Orosang, or benefactors, (Euergetes,) for their aid in his Scythian expedition. Their civilized manners secured to them the favour of the second great conqueror of Asia, and when, about the middle of the third century B.C., Scythians, and Persians, and Indians, a people who live west of the Indus, and south of the great mountains, were subdued by Alexander: these operations, as well as the complete conquest of the Areati, were accomplished in the winter time, 'in the midst of much suffering of men, and baths, suffering, the part of the soldiers.' Nothing but the general's own capacity of endurance could have maintained the discipline of his army.

Were the history of this campaign more minutely known, we might, perhaps, find another argument for the statement of Xenophon, that the Macedonian king, in his speech to his governor of the Sogdiana, supposed by some to be the modern Candahar, this, however, we may dispute. His course now lay over the Caucasus, as his historian terms the western part of the Hindoo Coosh, (Cau-Causus—Ko-Kosh,) the mountain range, the mountainous habits of the winter, dried the reeds, or into the ocean from those that contribute to the lakes of central Asia. The greater part of the mountains were lofty and bare of wood, but the residence of a great number of people who here found food for their cattle. Bessus laid waste the country on the north side of the mountains, the part to impede the progress of his pursuer; 'but,' to use the simple and energetic words of the Greek historian, 'Alexander moved forwards not a bit the less: with difficulty, indeed, through deep snow, and without provisions; but still he moved forwards.'

On the nearer approach of Alexander (a.c. 329), the Persian satrap crossed the Oxus, burnt his boats, and retreated to Nautaca, a town of Sogdians, the modern Mavvernahr. Alexander advancing to this point with provisions, and the latter is conjectured to be near the modern site of Balk, which lies on the line of road that the conqueror probably followed. The Oxus is described by Arrian as the largest river crossed by Alexander except the rivers of India, and as being the boundary of the summer and winter warfare. The time was about six stadia, which proves that Alexander crossed it about the melting of the snow in the mountains in May or June: the current was deep and rapid, and its banks offered no materials for constructing boats or rafts. In five days the army crossed the river. With great difficulty the floats made of the tent skins of the soldiers staffers with dried reeds and grass (Arrian iii. 29. Compare Xenophon, Anab. i. 5). Before crossing this mighty stream and entering on a new world, he sent home his disabled Macedonians, and such of the Thessalian volunteers as were no longer fit for service. The traitor Bessus fell into the hands of Alexander soon after he had crossed the river; after being kept a prisoner for some time, his nose and ears were cut off by order of Alexander, and he was sent to Ecbatana to be put to death. The Scythians, who, on the death of the satrap, were without a king, presented to the conqueror many beautiful gifts, and had the satisfaction of seeing the throne of an Asiatic despot, and it would be difficult to distinguish his future conduct from that of any other conqueror who has been the scourge of Asia.

From the Oxus the army marched to Maracanda, (Samarcand,) the royal city of Bactria, and the residence of the fierce and vigorous government of Tamerlane. The impetuous Macedonian still advanced eastward till he reached the banks of the Jaxartes, (the Sir,) which he proposed to make his frontier against the Scythians, or the nomad tribes occupying the country now possessed by the Kirghiz. After taking several cities to which the inhabitants had fled for refuge, he at last assaulted Cyropolis on the Jaxartes, a town which claimed for it the great Cyrus. This place is conjectured to be Khoqund, but it must be remarked that the measurement of distances and the fixing of positions in this part of Asia are yet entirely conjectural. When the actual geography of these regions has received that illustration which we are daily expecting, we may then venture to illustrate the descriptions of antiquity. After taking Cyropolis, Alexander crossed the river, defeated the cavalry of the Scythians, and pursued them under the burning heat of a Bucharian summer. The army was exhausted by thirst, and the commander himself was compelled to recross the river in consequence of illness, caused by drinking the unwholesome water, the only kind they could obtain. The banks of the Jaxartes, which bore the name of Alexandria, was designed to commemorate the limit of his conquests, and to serve as a frontier against the nomadic tribes. It would be unprofitable to add details minutely to the operations of Alexander in a country of which most readers know as little as of the interior of New Holland. Alexander recrossed the Oxus, and spent the next winter (of 329 and 328 a.c.) at Bactra or Zariasp. Here Arrian relates the story of the Cadihar, a demi-god, and the heroine of Asia. He was a conqueror; however, he never murdered his own people, but his cruelty and improvidence he had encouraged by exalting him above the demi-gods and heroes of Greece. Cleitus, who was drunk himself, had the boldness and imprudence to deny Alexander's claim to such extravagant honours, and the furious king, whom he had already attempted to restrain, enlightened through with a javelin on the spot. Unavailing honours to the dead, and bitter remorse on the part of the murderer, were the natural termination of this tragical story.

In the spring of 328 Alexander recrossed the Oxus at a place marked by winter difficulty, and on the banks of oil (naphtha?) which, if discovered, might throw some light on the course of the army. He paid a second visit to Samarcand in order to tranquilize the country, and spent the severe season of the next winter in quarters at Nautaca, a town of the Thessalians, in consequence of the operations impracticable. In the following spring (a.c. 327) he assaulted a strong natural fortress in which Oxyartes the Bactrian had deposited his wife and daughters. The place was almost inaccessible, and well furnished with provisions, and in addition to the recent fall of snow had rendered the scaling of the rocks more difficult. By means of the iron pins used for securing their tents, and strong ropes of linen, some adventurous soldiers ascended the steepest face of the fortress by night, and by the suddenness of the ascent took the place (Arrian ii. 15). Alexander thus not only got possession of the strongest post in Sogdiana, but he found there a wife in Roxana, the daughter of Oxyartes, whom his followers pronounced to be the handsomest woman they had seen in Asia, after the wife of Darius. What became of her husband, of whom so many stories were told, Alexander being much devoted to the fair sex. His conduct to the wife of Darius may have proceeded from indifference, though it is more charitable, and, perhaps, more true, to assign it to a generous feeling for a female whose husband's feebleness and misfortunes were more like to meet with pity than the wish to insult his fallen fortunes. Roxana was the daughter of a Bactrian prince, to which of which the tribes now found in Bulgaria this wife of a Greek king belonged, and that of the Thracians has been, is impossible to say. The most chronicled condition of the aborigines of Bucrania, are a handsome race, with European features, fine eyes, dark hair, beautiful teeth, and a good complexion: among their women there are some whom the conqueror of Asia might gladly make his wife, and who, according to Arrian, were dressed 'like the painter in the Theban festival,' but more simple. At a distance of another almost impregnable fort, Alexander moved southward about the end of spring, crossed the Caucasus, (Hindo Coosh,) and in ten days arrived at Alexander. It is impossible that ten days' march could have brought him to this place. But if Alexander, immediately after a crossing of the mountains, can we even then admit that he marched to this city; it is most probable, then, that the time is incorrectly given, for there are stronger reasons for supposing that Candahar was the Alexandria than any other known place. The memory of Alexander is still preserved among the ignorant inhabitants of Bulgaria, where a molla reads in the public place to a numerous audience assembled about him, the exploits and adventures of Iskander the Great.
The winter residence in Bactra had been marked by new events. A conspiracy was formed among the royal pages to murder the king, but, being discovered in time, Heracles and his young associates suffered the punishment of death by stoning; after having first been put to the torture. Callisthenes, a pupil of Aristotle, was implicated in the plot, and was forthwith put to death and then burned.

There seems no doubt about the existence of a conspiracy, and as little doubt that it was provoked by the intermeddling conduct of Alexander. (See Arrian, iv. 14. 11.)

The next move on the part of Alexander was the passage of the Indus is difficult to trace, though we can have no doubt that it followed, in part at least, the line of an existing commercial road, and would be pretty near the same route that would be followed now. In his march Alexander crossed the Cho- enes, a river which was difficult to pass. In crossing the Ganges, he then considered streams; he took the important town of Massagetae (Mazæorum), and once more aided one of those mountain fortresses, by name Aroras, which seems, from the peculiar difficulties which it offered, to have had additional claims for the adventurous spirit of Alexander. The place was captured in spite of a vigorous resistance; and the army advanced, by a road which they were obliged to construct for themselves, to the bridge of boats over the Indus which Ptolemaus and Hephæstus had been sent forward to make. A similar task now awaited Nichæus, who was informed upon his arrival, by Arrian, how the bridge across the Indus was constructed: he conjectures, however, that it was made by boats, fastened together with planks laid across them, and the whole kept steady by baskets full of stones let down from the bank. Such a bridge was no doubt thrown across the river in a little north of which is probably the place where Alexander crossed. The river here is above 1000 feet wide, and very deep. It is only from November to April that such a bridge could be thrown across the river, for the period of time is not recorded.

Alexander, who had spent the winter between the Casus and the Indus, must have entered India early in the year B.C. 326. His route was the same as that of Timour and Nadir Shah, the object of whose plunder was the gold of India.

The region which the Macedonian conqueror now entered is watered by numerous large streams, whence it receives the Persian name of Penj-ak, or the five rivers. The waters of the Penj-ak unite in one stream, and fall into the Indus on the left bank in latitude 29°. Jilissa was the first Indian town he came to, and here the army enjoyed a little repose after its toils. Taxilas, the king, had saved himself by previous submission: and it seems not unlikely that the dissensions among the Indian rulers of this country, which facilitated the operations of the Macedonian army. Alexander's progress was towards the Hydaspes, (now the Beutel, or Behista, also called by the natives the Jumna,) a large river swollen by the solid deposits of the snows that had fallen on the Indus had been taken in pieces, and brought across the country to the bank of the river; but a more formidable enemy than the swollen Hydaspes presented itself on the opposite bank. Porus, an Indian king, one of the great rulers of the Penj-ak, was stationed there with a formidable army, and a train of elephants that rendered all attempts at landing too dangerous to be hazarded. By a manœuvre, Alexander, with part of his troops, and his formidable companion cavalry crossed the river in another place before he was discovered. The boats of Porus were upon the point of being drawn up in order of battle in the plain, with a line of elephants in front; the rest of the dispositions of the Indian prince were such as showed him a master of the art of war as practiced at this period. Unlike the triumph of the first of Porus, Persia made a gallant defence; but the Macedonian cavalry, with the assistance of the elephant, and the compact mass of the infantry bristling with their spears directed by the courage and skill of Alexander, were a force that no Indian army could resist. The whole loss of life was about 10,000 to 12,000, and the number that fell on the side of the conqueror is stated as proportionately small, as to lead us to doubt the accuracy of Arrian's authorities. Two sons of Porus fell in the battle: and the gallant father at last yielded to Alexander, who treated him with respect due to his rank and courage, and restored to him his kingdom with extended limits. In this battle a number of elephants fell into the hands of the Greeks, and from this time we may date the use of that animal in European warfare.

We are told that Alexander founded two cities, or probably military posts, one on each bank of the Hydaspes. One city was called Niemen, to commemorate his victory; the other Bactropleius, in honour of Alexander's horse Bucephalus, which, after carrying his rider safe through so many battles, died in the last encounter, worn out by age and fatigue.

On crossing the Hydaspes the army advanced to the great Araxes or Chin-ah, which Ptolemy describes as fifteen stadia, or considerably above a mile in breadth. The estimate, which may be true of some parts in the rainy season, when the river is swollen by the rains, may be safely reduced to about 600 feet, without a blade of grass, except on the banks of the river. Over this tract he marched and crossed the Hydaspes to attack a new enemy. A second Porus, who was king of the country between the Araxes and Hydaspes, had fled as the enemy approached, and hence received the name of Coward. The recurrence of the name Porus, added to other reasons, proves that this was not a proper name of an individual, but of a family or tribe. The dominions of the runaway Porus were given to the true man. But all the Indian races north of the Araxes, as far as the city of Taurians, (Taurians,) were determined to oppose the invader. Three days' march brought the Greeks to Sangala, where the Caturi were stationed on an eminence with a triple line of wagons around, or a sort of a circular enclosed mound, surrounded by a brick wall higher on the outside than the inside, are found in the Penj-ak. The city was captured with the usual slaughter, and the power of the brave Caturi was for the time broken. A pastoral tribe, a restless, marauding, and hostile one, Porus was determined to conquer; a fact which stands out with considerable distinctness, and which still exists in the countries between the Chin-ah and the Araxes, and is conjectured by a late explorer of those regions (Burnes) to be the Caturi of Arrian. The name and the locality are certainly in favour of this hypothesis. The king was determined to be cooler to yoke the steeds of the Macedonians upon the waters of the Hyphasis, and the adventurous conqueror probably thought to make the Ganges the boundary of this progress. But the Indian troops exhausted with fatigue, disappointed in finding a country poor, and full of vigorous enemies, retired among their societies into the forests, and the foreign land, could not be induced either by threats or promises to cross this river. The Hyphasis was, therefore, the boundary of Alexander's conquests, and of that victorious career which he had so successfully conducted down the consequences of his march. The Macedonians, a race hitherto looked on with contempt by many of the southern Greeks, furnished the officers for this bold undertaking; the republics, whose names and exploits form the subject of all previous Greek history, had no representative in the glory of the Indian conquest. It appears further when we consider the small number of Macedonians, Thessalians, and soldiers from southern Greece who formed the original army, or who were afterwards added to it, that Alexander's army must have been constantly recruited during the course of the campaign to make up the number that had been added at this period a strange and motley set of Asiatic and European troops officered by Macedonians.

Our limits compel us to pass briefly over the remaining events of Alexander's life. The army retracted its steps from the Hydaspes to a winter's quarters, where a curious description of which is preserved in the historians, of which this river still abundantly supplies from the upper parts of its course. On descending the river to its confluence with the Araxes, the fleet experienced, at the junction of the two, about 200 miles, which, it was then supposed, must only to exist in July and August. The long ships of war suffered severely, but the round boats, as Arrian calls them, which probably resembled the native boats still used on the river, passed the dangerous spot in safety. A late traveller (Burnes) who journeyed up the river to within a few miles of Attock, the winter quarters of the Hydaspes (Ravee), to commemorate his victory; the other Bactropleius, in honour of Alexander's horse Bucephalus, which, after carrying his rider safe through so many battles, died in the last encounter, worn out by age and fatigue.

The Malli, a powerful Indian tribe, who seem to have chiefly occupied the lower course of the Hydaspes (Ravee), were next attacked. We are inclined to look in the modern
orders to send out on his voyage along the coast towards the Persian Gulf, as soon as the change of the monsoons would allow him. The narrators of this voyage, the earliest of which any account exists, are Herodotus, Polyclitus, and Arrian, which is certainly very vague, with the position of Multan. We can hardly doubt, however, that Multan is on the site of one of the conquered cities. In this campaign, Alexander, like some of the modern heroes of the screen, was always on the march, the head of his army, to attack the enemy, who were drawn up on the opposite bank.

The Oxydrape, who were also obliged to surrender, may possibly have their name preserved in the name of Ouch, a town with a considerable population from the sea. Alexander, the Chin-ab, five miles below the junction of the Garra, which takes place in 29° 30' N. lat.

The troops moved downwards (n.c. 325) to the confluence of the Indus and the Chin-ab at Multan (29° 55' N. lat.), where he may have established a naval station on the site of Danahar, before he entered India, and it also adds to the probability of this being the Alexandria above alluded to. Shiokarpoor on the Indus must be about the point of departure.

At Pattala (Tatta?), the apex of the great delta of the Indus, which the damage done, Alexander established a naval station, and laid the foundation of a city, which he no doubt anticipated would prove the centre of an extended commerce; and such it might be in the hands of a politic and powerful government. The enterprising monarch, on his advance, gave him no safe place of repose, and his city suddenly on dry land, and as suddenly returned to surprise them. At last he reached the mouth of the stream, and beheld the great Indian Ocean: he floated onwards till he was fairly in the open sea, with the view of ascertaining, as he himself expressed it, whether he could assist himself in an undertaking that he wished to be able to say that he had navigated the Indian Ocean. He next explored the eastern branch, which he found more practicable, and opening into a wide estuary. It may be doubted whether he sailed down the Suta, or proceeded to the junction of the Drang and the Kandal Ganges to the delta of the Ganges. He took the Koral, which has the widest embouchure of all, though now no longer an outlet of the Indus. Alexander appears to have had views somewhat beyond those of an ordinary commander: he evidently possessed a spirit of geographical discovery. With a few horsemen, says Arrian, he followed the outline of the Delta along the margin of the ocean, to see what kind of a country it was, and he ordered wells to be dug for the benefit of those who might navigate this coast. He also established a naval station on the site of Multan, and left a garrison to keep the country in order.

Nearachus, the commander of Alexander's fleet, received
The marriages, he adds, were celebrated after the Persian fashion: seats were placed for the bridesmaids, and after the meal, the brides were introduced, and each sat down by her husband. The meal took the formals by the hand and kissed them. After this courting, Alexander gave a dinner to each. Every other Macedonian who chose to take an Arian wife was registered, and received a present on his marriage: the number who followed the king's example was above twenty. The feasts and revelry that attended these fine shows excited marvellous envy and astonishment. The kind of amusement that music, theatrical representations, and all the talents of the most skilful artists of the Greek nation could supply: but in the midst of this scene of perhaps riotous festivity, we must not overlook the wise policy of his which he endeavoured to blend with the conquerors and the conquered into one nation by the strong ties of intermarriage. It was obviously, also, a further design of Alexander, as we see from his historian, to train the natives of Asia to European arms and manoeuvres, and by incorporating them with his troops, and forming also new bodies, to render himself independent of the control of his Macedonians.

Discovery and works of utility also still engaged his attention. He sent the garrison of 302 to Esbantha, the northern capital of the empire, where he had left an important garrison, as the result of the battle of the Granicus, which was at not inconsiderable distance from the river for the purpose of making proper use of water and favourable irrigation: but they proved at the same time an impediment to the navigation, which it was the conqueror's policy to improve and extend. Various remains of such constructions exist at the present day in the region.

Having quelled a rising among his Macedonians, and dismissed the worn-out veterans with more than their full pay, he went, about the close of the year 321, to Esbantha, the northern capital of the empire, where Hermonius, one of his generals, held a garrison, which it was his duty to commissary; and a road route towards Babylon from Esbantha, (Hamathus,) Alexander diverted his garrison by subduing the Cossae, a mountain tribe of robbers, whom he entirely rooted out, as he thought; but they soon showed themselves again. It seems as if the king acted on the advice of his wife, and he was so over-zealous, that he mistook the enemy's general for his own, and killed him. His wife Roxana was much grieved by his death. It was certainly a matter of considerable regret to the king, who had been with his troops, and forming also new bodies, to render himself independent of the control of his Macedonians.

The priests of the temple of Ilus endeavored to persuade the king that he could not safely enter the city: the great Bihus himself had been warned. Their motive, Arrian tells us, and as we might readily suspect, were disinterested as they appeared. The great temple was in ruins, and the priests had made little progress in rebuilding it according to the orders given during Alexander's lifetime, and had not sold the lands, but the emperors, which, like prudent economists, they had no wish to expend on a useless building. The king despised the warning of Ilus and his priests, and entered the city.

In Babylon Alexander proposed to fix the seat of his government in on a style to suit the cities of the monarchs of the East. His projects were grand and characteristic. He sent Hercules to build vessels on the Caspian, and to explore these unknown waters, which Herodotus a century before had declared to be an inland sea, but other sailors connected with the Euxine or the Great Ocean. He executed a town at Babylon to hold the vessels he wanted to navigate the Persian gulf and the Euphrates, which he wished to possess, to enable skillful seamen to return to his new capital. The circumnavigation of the Arabian peninsula, also, part of his plan, but no commander of those

who were sent out ventured farther than Cape Matar (Cape Massendeun) at the entrance of the gulf. The treasure of the agriculture of the Euxine, nobody ever was another object of his policy, as a. The kings of Persia, which is the most important section of the empire, the great to the Euphrates and the Euphrates, which he wished to possess, to enable skillful seamen to return to his new capital. The circumnavigation of the Arabian peninsula, also, part of his plan, but no commander of those
Justin (xxxv. 12) states, that Balas was the original name by which Alexander was known during the period of his private life. He is called by Strabo \textit{Balas Alexandros}; where the word \textit{Balas} appears to be used by him as synony-

\[\textit{ Balas Alexandros }\]

...
he was buried in a pompous style. His reign, like the rest of the later history of the Jews, is full of cruelty and acts of perfidy, although, in comparison with others, he has obtained the praise of moderation. (Joseph. Arch. xiv. c. 12-15.) There is a small copper coin of Jannaeus in the British Museum, but the Samaritan inscription between the rays of the stars, mentioned by others, is not discernible. (Compare Bayeri, Vindici. Num. Hebr., plate, fig. 5.) There is a coin extant of Alexander Jannaeus, having on one side an anchor, and the legend Αλεξάνδρου Βασιλείου, and on the other a star, between the rays of which stands in the Hebrew coin characters, υπέριον (Jonathan), and on others, ΤΩΝ ΚΟΓ (King Jonathan). Barthelemy and Eckhel, Dr. Num. iii. p. 479, have rendered the authenticity of this coin very probable. Gesenius thinks that Jonathan was the Hebrew name by which he was known among the Jews; whilst Alexander was the Greek name which he had adopted, like other monarchs during this period, when the Jews were so fond of imitating everything Greek.

[Alexander Zebinas.]

ALEXANDER II.—Zebinas, or Zebina—was a pretender to the Syrian crown, reigned over a part of the kingdom of Syria, from the year 1218 to 1222 B.C. The inhabitants of Apamea, Anthioch, and other cities, disgusted with the tyranny of Demetrius II., requested Ptolemaus Philocus to appoint another king. Ptolemy sent to a young Egyptian, the son of a broker Protarchos of Alexandria, whom he represented as having been adopted by Antiochus Sildetes. The pretender took the name Alexander; but the people called him, in derision, Νου Ζεβινα, that is, the bought one. Demetrius being defeated near Damascus, fled to Tyre, where he was murdered. Zebinas, thinking his kingdom firmly established, refused the annual tribute to Ptolemaus Philocus, who now encouraged Antiochus VIII., the son of Demetrius II. Zebinas was in his turn defeated by the Egyptian army, and retreated to Antioch; where, being unable to pay his troops, he permitted them to pillage the temple of Victory, and took for himself the golden statue of Jupiter. Expelled by the people of Antioch from their city, and deserted by his troops, he endeavored to escape on board a small vessel into Greece, but was taken by a pirate, and delivered into the hands of Ptolemy, who put him to death. Twenty-two coins of Zebinas are to be seen in the Fröhlich, Annals Syrie, tab. xii. (Compare p. 84, Eckhel, Dr. Num. Vet. iii. p. 237; Justin, xxxix. 1, 2; Josephus, xiii. 9, 10; Athenaeus, v. 17; Gesenius, in Ezech. und Gruber; Foy-Vallant, Syrie Hist. ad fidem numerositatem accommodata.) The British Museum contains twenty-six silver and copper coins of Alexander Zebinas.

ALEXANDER, a son of King Aristobulus II., and grandson of Jannaeus, was taken captive in Judea by Pompey, who intended to exhibit him with his father and brother in his triumph at Rome. Alexander escaped on the journey, and returned to Judea, where he raised an army of 10,000 foot and 1500 horse to attack Hyrcanus, who had been appointed by Pompey to govern Judea. Alexander took several castles in the mountains; but Hyrcanus imporing the assistance of the Romans, Marcus Antonius, who was sent by Gabinius, governor of Syria, defeated Alexander near Jerusalem, B.C. 57, and besieged him in Alexandria, a small town with a fine castle about six miles south of Tyre, where he capitulated. After his father Aristobulus had escaped from Rome to Judea, and had been again defeated and put into prison, Alexander once more took up arms, conquered Judea, put many Romans to death, and besieged the rest in Gaunt. But his army of 30,000 men was finally defeated by Gabinius, in a battle near Mount Tabor, in which 10,000 Jews perished. Alexander at last fell into the hands of Metellus Scipio, and was beheaded at Antioc, in the year 49 B.C. (Joseph. Arch. xiv. 5, 6, 7; Bell. Jud. i. 8, 9.) A few variations of this account occur in Strabo, p. 337 to 349.)

ALEXANDER SEVERUS. [See Severus.]

ALEXANDER POLYHISTOR. [See Polyhistor.]

ALEXANDER I, one of the earliest bishops of Rome, succeeded Evaristus about the beginning of the second century of our era, but the precise epoch is not well ascertained. (Ed. To. Frid. Breithaupt, lib. iv. cap. xxiv., xxv. p. 337 to 349.)

ALEXANDER III, Cardinal Rolando of Siena, succeeded Adrian IV. in 1159. His long pontificate of 21 years was agitated by wars against the Emperor Frederic I., and by a schism in the church, during which three successive antipopes were raised in opposition to Alexander. The latter took part with the Lombard Cities in their struggle against Frederic. [See Frederick Barbarossa.] At last peace was made, and the pope and the emperor became reconciled at an interview they had at Venice in 1177, and Alexander was universally acknowledged as legitimate pope. He held a great council in the Lateran palace in 1180, when, among other regulations, a decretal was passed, that two-thirds of the cardinals should be requisite to make an election valid. He died at Rome in 1161, and was succeeded by Lucius II. The famous Thomas à Becket was Archbishop of Canterbury during Alexander's pontificate. The latter took part with the English prelate in his contest with King Henry II., and canonized him after he had been murdered.

ALEXANDER IV., of Anagni, succeeded Innocent IV. in 1254. He inherited the ambition, but not the talents of his predecessor. He manifested the same invertebrate hostility against the house of Sicily, and its representative Manfred, King of the two Sicilies, but did not succeed in his attempt at overthrowing the latter, which became the work of his two immediate successors. Alexander died in 1261, and was succeeded by Urban IV.

ALEXANDER V., a native of Candia, and monk of the Franciscan order, was elected in 1409, and died the following year. He was succeeded by John XXIII.

[Alexander VI.]

ALEXANDER VI. Roderic Borgia of Valencia in Spain, a man of great personal wealth and of some ability, but of loose conduct. He had been made a cardinal by his uncle Calixtus III., and was elected pope in 1492, after the death of Innocent VIII. At the time of his election, he had four children by his first wife, and (during his reign) he made no scruple at employing every means in his power to confer on them honour and riches. The most notorious of his sons was Cesar, first cardinal, and afterwards made Duke of Valentinois in Dauphiny by King Louis XII,
from which he was styled the Duke of Valentia, a name which he rendered infamous by his atrocities. The politics of the pope were capricious and faithless in the extreme. At first he was hostile to the house of Aragon then reigning at Naples, and showed himself favourable to the French who were at that time attempting to invade Italy, but afterwards his younger son, Gioffredo, having married a daughter of Alfonso Ill. of Naples, Alexander allied himself with the latter, for the purpose of arresting the progress of the invaders. As, however, Charles VIII., at the head of his army, advanced upon Rome, the pope received him with honour, and even gave him his son, Cardinal Cesar, as a hostage. But the Cardinal found means to escape; and Alexander joined the league formed in the North by the Venetians and Sforza against the French. A treaty was accordingly concluded. He afterwards allied himself to Lewis XII., successor of Charles VIII., who wanted the Pope's sanction for his first wife: he was also a party to the double treachery by which Ferdinand of Spain first betrayed his cause. (See The 'Ecclesiastical History', partitioning that kingdom between Lewis XII. and himself; and then, breaking his engagement with the French, he seized upon the whole of the conquest by means of his general, Gonzalvo. Alexander's internal policy was, if possible, still more pernicious. The destruction of the families of Colonna, Orsini, and Savelli; and either by treachery or open violence he in great measure succeeded in putting to death most of them, and seizing on their extensive possessions. He sent his son, the Duke Valentine, into the Marches, where neither his sword nor his latter made master of that country, entrapping and strangling the independent lords and petty despotis of the various towns. Alexander gave his only daughter Lucretia Borgia in marriage, first, to Giovanni Sforza, Lord of Pesaro, whom she afterwards divorced, for the sake of the bride of Aragon, who was murdered by her brother Cesar; after which she lived some time in the pontifical palace, sharing in the intrigues and licentiousness of that court. She was married thirdly, in 1501, to Alfonso d'Este, son of Herencia, Duke of Ferrara, to whom and to his claimant, her last Alexander himself died on the 18th of August, 1503, being seventy-four years of age. It was said, and several historians have repeated the assertion, that he died of poison which was intended for his guest, the Cardinal of Corneto. The cause of his death, however, is not known; at least it has been sitting for some time with a terrestrial fever, this circumstance, added to his advanced age and irregular habits, is sufficient to account for his death. He was succeeded nominally by Pius III., who died twenty-six days after his elevation, and whose brother of Henry III. of England, called the Casket of Alexander VI. is certainly the blackest page in the history of modern Rome. The general demoralization of that period, of which abundant details are found in John Burchard's 'Diarium', as well as in Panvinius, Muratori, Fabrici, the Memoirs of Pier Francesco Malatesta, and other writers, Catholic as well as Protestant, appears in our times almost incredible.

ALEXANDER VII. Fabio Chigi of Sienna, succeeded Innocent X. in 1655. He embattled Rome, protected Jesuits, and espoused France in her contest against the prelates and connexions. He was embroiled in a dispute with the imperious Louis XIV. of France, in consequence of some insult which had been offered by the populace to the Duke of Guise. France sent against him the Duke of Savoy. He died in May, 1667, and was succeeded by Clement IX.

ALEXANDER VIII. Cardinal Ottoboni of Venice, succeeded Innocent XI. in 1689. He assisted his native country in its wars against the Turks. He died in February, 1691, at the age of eighty-two, and was succeeded by Innocent XII.

ALEXANDER I., king of Scotland, was a younger son of Malcolm III. (Canmore), and succeeded his eldest brother Edgar, who died without issue on the 4th of January, 1107. In those times, in Scotland, as well as in other countries, the succession to the throne was frequently regulated, at least to a certain extent, by the will of the reigning king; and Edgar, at his death, left part of his dominions to his younger brother David. Lord Hailes thinks that David's share was only the Scottish portion of Cumberland; but it appears rather to have included the whole territory that was considered subject to the Scottish crown to the south of the Forth, except the Lothians. Alexander was at first inclined to resist this apportionment; but he eventually acquiesced in it. The instructions of his mother, Margaret, the daughter of Edgar Atheling and the advantages which he enjoyed from the society of the English exiles, who crowded, after the Conquest, to his father's court, had given to Alexander a degree of literary cultivation which none of his predecessors had possessed. His natural talents seem also to have been of a superior order; while, in the generation which followed, in an eminent degree, the energy of character suited to the government of the rude and turbulent country which Scotland then was. His reign, almost from its commencement, was agitated by successions, civil and foreign, in which, however, he promptly put down. One of the most serious that excited in the district of Moray, in 1120, by Angus, the grandson of Lulach, son of the wife of Macbeth, and the occupant of the throne for a few months after the death of his predecessor. It was styled 'the great law', and was accordingly brought by Alexander with his usual decision, and speedily quelled. From the energy which he displayed on this occasion, he derived the epithet, or surname, by which he is known in Scottish history. The old chronicle bears this inscription: 'Pray that day forth his legs go Used him Alexander the Pioneer to call.'

 Alexander showed equal spirit in resisting all foreign encroachments upon the independence of his kingdom. The kingdom of Scotland is a region almost entirely free from the disputes occasioned by the pretensions of the Archbishops of Canterbury and York to episcopal jurisdiction over that country. A very full abstract of the course of this controversy has been given by Lord Hailes; but it is sufficient here to observe, that the determination of the Scottish king at length compelled the English prelates to give up the contest. St. Andrew's, and several of the other ecclesiastical foundations of Scotland, were largely indebted to the bounty of Alexander. The only church of which he was the founder, however, was, we believe, that which he built in 1123 on the island of Inchcolm, in the Frith of Forth, in the neighbourhood of which he had nearly perished in a tempest. He died at Stirling, without leaving any legitimate issue, on the 27th of April, 1124, and was succeeded by his eldest sister, who had married Sibilla, the natural daughter of Henry I. of England. She died suddenly, at Lochar, on the 12th of June, 1122.

ALEXANDER II., king of Scotland, was born at Haddington, in 1124 (St. Bartholomew's day), 1119, and succeeded his father, William the Lion, on the 4th of December, 1214, being crowned at Scone on the following day. His mother was Ermengarde, daughter of Richard Viseount of Beaumont, and granddaughter of a natural son of Henry I. of England. After the death of his father, entering into a league with the English barons who were conferred against King John,—engaging to aid them in their insurrection, on condition of being put in possession of the northern counties of England. This led to several engaging insurrections into each other; but many of these two kings. The death of John, in October, 1216, put an end to their hostilities; and the following year Alexander concluded a treaty of peace with the new sovereign of England, Henry III., one of the conditions being that Alexander should become vassal of the English king, and swear fidelity to him. This marriage accordingly took place on the 25th of June, 1221. In the course of the following thirteen or fourteen years, Scotland was disturbed by insurrections which broke out successively in Argyile, in Caithness, in Murray, and in Galloway; all of which, however, were respectively repressing. Meanwhile the connexion which he had formed with the royal family of England preserved peace between the two countries, and even led to considerable intercourse between the Scottish king and his brother, who was repeatedly visited at London. The death of Queen Joan, however, without issue, on the 4th of March, 1238, and the marriage of Alexander, on the 15th of May in the following year, with Mary, daughter of a French nobleman, Ingelram de Conis, broke this bond of amity; and after some years of mutual dissatisfaction and complaint, the two kings prepared to decide their differences by arms in 1244. By the intervention, however, of some of the English nobility, bloodshed was prevented, after Alexander had approached
the border with an army, it is said, of 100,000 men; and a peace was concluded at Newcastle in August of that year.

In 1247, another insurrection broke out in Galloway, which Alexander soon succeeded in putting down. In the summer of 1249, he had set out at the head of an army to repress a rising in Angus. Lord Spynie was taken ill at a small island, variously spelled Erray, Kerrera, Kerarry or Karry, off the coast of Argyll, and died there on the 8th of July. By his second marriage, he left an only son, his successor, Alexander III., born at Edinburgh, Scotland, on the 1st of September, 1249. Alexander II. bears a high character in the pages of the ancient historians and chroniclers of Scotland; and he appears to have been a prince endowed with many great qualities. Besides the warlike ability with which he preserved both the independence and the internal order of his kingdom, he is particularly celebrated for his regard to justice, and the wisdom and impartiality with which he took care that the law should be administered among all classes of his subjects. This is a virtue in a king, or governor, that never fails to attract the popular esteem and respect, and, accordingly, we are told by a contemporary English writer, Matthew Paris, that Alexander was deservedly beloved, not only by his own subjects, but by the people of England; and he usually placed one of the ablest and best of the Scottish kings.

ALEXANDER III. King of Scotland, was the son and successor of Alexander II. Although only eight years old at his father's death, he was crowned at Scone, by David de Beaumont, Archbishop of St. Andrews, having previous to that ceremony been knighted by the same ecclesiastical head. He had, already, when only a year old, been betrothed to Margaret, the eldest daughter of the English king, Henry III.; and notwithstanding the youth of both parties, the celebration of the marriage took place at York on the 25th of December, 1251. The connection thus formed, together with the minority of his son-in-law, gave Henry a plausible pretext for interfering, as he was very anxious to do, in the affairs of Scotland; and the distracted state of the kingdom, occasioned by the quarrels of the nobility, facilitated his views. In August, 1255, he approached the borders at the head of an army; and, the Castle of Edinburgh, in which the king and queen resided, having been previously taken by surprise out of the hands of the Comyns, in whose possession it was then vested, that party, comprising the most patriotic portion of the nobility and clergy, was dismissed from power, and the administration committed to their opponents. This event made ostensible the young king, may be considered as having been dictated by Henry, and as having had for its principal object the establishment of the supremacy of England. It was the commencement of the design so perseveringly pursued by Henry, of reducing the Scottish kings to the condition of vassals. The eminent talents, however, which Alexander began to display as soon as he came of age, and took the administration of affairs into his own hands, together with the determination he showed to maintain his own rights and the independence of his dominions, effectually thwarted the further prosecution of these views so long as he lived. Meanwhile he kept on good terms with his father-in-law. In 1260, he visited London with his queen; and in February, 1261, the latter was married at Windsor to a daughter, who was named Margaret.

Alexander had not long assumed the government, when he was called upon to meet a foreign power, which aimed at the division of the kingdom. On the 1st of October, 1264, Haco, king of Norway, after having conquered the Scottish islands in the course of the summer, approached the coast of Ayrshire at the head of a numerous fleet. Every preparation had been made by the Scottish king to meet this formidable attack. Haco, however, having received the news of the invasion, was deterred of his progress, caused the ships to disperse, and after a short day's fight, made his escape, only to die of a broken heart a few months afterwards. The attack of the Scottish soldiers and peasantry completely the destruction of the invading force; and Haco with difficulty made his escape, only to die of a broken heart a few months afterwards. Year next year Magnus. Haco's successor, agreed to relinquish to the king of Scotland the Hebrides and the Isle of Man for the sum of 4000 marks, and a small yearly quit-rent. In 1262, the peace, between the two kingdoms was further consolidated by the marriage of Alexander's daughter, Margaret, to the Norwegian king Eric, then a youth of fourteen. Margaret died in 1283, but left a daughter of the same name, commonly designated the Maid of Norway, who eventually became the successor of her grand- father.

The successful resistance which, seconded by his clergy, he offered to an attempt of the pope to levy certain new imposts in his dominions, is almost the only other act of Alexander's reign which history has commemorated. Under his rule, the Parliament had taken place. It was at a time to which she had long been a stranger, and which she did not regain for many years after his decease. The death of his daughter Margaret, however, was the first of a succession of calamities. Soon after her death, Alexander, the Prince of Cumberland, the king's only son, who was born in 1263, had been united in marriage to Margaret, daughter of Guy, Earl of Flanders; but he also died without issue on the 28th of January, 1284. On the 15th of April, 1285, the king, having sometimes before lost his first wife, took a second, Joleta, daughter of the Count of Mortimer, in the hope of leaving a male heir. But on the 16th of March, 1296, as he was riding in a dark night between Burntisland and Kinghorn, on the banks of the Firth of Forth in Scotland, he was stricken as a precipice, and killed on the spot. The place, which is called the King's Wood End, is still pointed out. The death of Alexander, followed as it was in a few years by that of the Maid of Norway, was one of the most unfortunate events of the age, as it threw the country into confusion, and, as the result of the internal disturbances arising from a disputed succession, and with all the art and force employed by a powerful neighbour to effect its subjugation. But Alexander was not less lamented by his subjects on account of his own virtues, and the fact that he had never before enjoyed such prosperity, and Scotland may be said, during this reign, to have passed from semi-barbarism to civilization. It was under Alexander that its intercourse with England first became considerable, and that it began to acquire with the Scotch many of those characteristics which we may call European life. This king also improved and completed the system for the dispensation of justice which had been introduced by his father; he divided the country into four districts for that purpose, and made an annual progress through it, in a manner known to us from the decisions of the ordinary judges. He was long affectionately remembered in Scotland; and the old chronicler Wyntoun has preserved the following verses about him, which are at once affecting and interesting, as being the most ancient specimen of the Scottish dialect now extant:

Aohan a' Alexander whoe king was dada,
Dat Scotland led in lawes (love) and (law)
Away was ane of me and breida,
If o' this to reduce the scottish king to a condition of vassalls.
One gold was changed into lade.
Dat sone was born into wyntoun,
Succour Scotland, and remade,
Dat steel (placed) is in peryntylad.

ALEXANDER, WILLIAM, a statesman and poet of Scotland, who flourished in the reign of James VI. [See Stirling, Earl of.]

ALEXANDER JAROSŁAWICZ NEVSKOJ enjoyed a high renown among his countrymen for bravery, prudence, and religious zeal: he has been celebrated in many a Russian ballad, and is still venerated by Russia.

He was the second son of the Grand Duke Jaroslav II. Wscladowitz, and was born at Vladimir in 1219. At the period when his father ruled over Novgorod, (in 1237,) the Tartars, with a tremendous army, under the command of Khan Ichak of Bokhor of the Chagatai branch of the Golden Horde, invaded Russia, desolated the country in the most cruel manner, overran it even to the Upper Volga, and exacted the most degrading submission from the Russian princes. Jaroslav, seeing the danger which threatened his state, met the Tartars in his own Principality of Novgorod, found it adjoined to the great Tartar horde, stationed at that time in the region of the modern city of Kasan, to pay homage to Baju-khan. From this Khan he received the grand duchy of Vladimir, to be held as a fief, and the office of the lord of Poretsawle, his residence, and, as his eldest son Fedor had died, he entrusted Alexander the younger with the government of Novgorod.

Returning a second time to the great horde, and there remonstrating against certain unreasonable Tartarian commands, he met with ill treatment, and
Alexander succeeded his father in the sif of Wladimir, the possession of which was confirmed to him by Bu-tu Khan, Alexander, while his father was still alive, had distinguished himself by two great victories, of one over the Swedes, and another over the united order of the Livonian and Teutonic Knights of the Sword. A crusade against the Russians had been proposed by the Pope Gregory X, who, having set out in 1229, enjoined the bishops of Lubeck, Linkoping, and Livlond, to prohibit all intercourse and commerce with the schismatic Russians, as long as they should resist the conversion of the apostate Finnsiders. This, however, only was a proclamation made of the day by a league of which the Livonian and Esthonian Knights of the Sword were united to the Teutonic order, evidently by way of strengthening them for a Russian crusade, tended in a more direct and positive manner towards the destruction of the Grand Duchy of Lithuania. The Roman Court also opened negotiations with Eric the Eleventh, King of Sweden, who, at the pope's instigation, gladly sent an army against the Finnsiders, which landed near the mouth of the Neva, on the spot where St. Petersburg has since been built. Alexander marched against this army, and, on the 15th of July, 1240, totally defeated it, at the confluence of the Ishora and the Neva. By this victory he obtained the honourable surname of Nevskoj, or Alexander of the Neva. While he thus engaged, the Knights of the Sword, defeated by him, crushed by his troops, in their Balk, had taken Pleskow. Early in the year 1241 Alexander marched against them from Novgorod, and drove them out of Pleskow; but, having allowed his army to disperse in the autumn, he next winter saw the enemy again in the field. The Knights of the Sword had advanced within thirty versts of the city of Novgorod. With great speed Alexander again collected his army, pursued the retreating enemy, and, on the 5th of April, 1242, fought them on the ice of the lake. He found, indeed, a decisive victory for the Teutonic Knights was slain, and fifty were taken prisoners; those of the prisoners who were Germans were pardoned, but the Esthonian Alexander ordered to be hanged, considering them as Russian rebels. Alexander returned in triumph to Pleskow, having-liberated the country of small commerce, which at that time was considerable, from the yoke of foreigners.

Arms proving unavailing, the Roman Court had recourse to diplomacy as a surer means for converting Alexander, Alexander attempted to gain this king's good will, and, by his preceptors, by the popes Innocent III., Hono-rius III., and Gregory IX. Innocent IV. made a new treaty, and in the year 1251 sent two cardinals, who, in Russian Chronicles, are called Guld and Gemont, as ambassadors to Alexander, who were engaged in a war with England, which had broken out in the course of the preceding year. They immediately introduced the pacific character of his policy by taking steps to bring about a termination of this state of things, which was already seriously distressing the commerce of Russia, and a low unit at that unaccordedly concluded between the two powers, and signed at St. Petersburg on the 17th of June, 1251. The general sense followed on the 1st of October, and lasted till the declaration of war by England against France on the 18th of May, 1263. Meanwhile Persia, hitherto under the protection of Persia and Turkey, had been occupied, on the invitation of the people themselves, by the troops of Russia, and incorporated with that empire. Alexander also, during this interval, showed his disposition to extend the influence of Russia in another direction, by entering into a negotiation with France respecting the compensation to be granted to certain of the minor powers of Germany, with which country he was connected both through his mother, and through his father, who was born head of the house of Holstein-Gottorp. It was in the course of these negotiations that he had his first interview with the King of Prus-sia, which is understood to have laid the foundation of an intimate friendship between the two sovereigns, and to have established a concurrence of views which powerfully influenced the future policy of each. In a dispute with Sweden, with regard to the frontier of Finland, although hostilities were averted by the concession of the Swedish king, the extensive military preparations which were immediately made by Russia were seen as a sign that this power was disposed to allow the invasion of any of her rights.
Alexander did not immediately join England in the war against France; but even in the early part of 1804, symptoms began to appear of an approaching breach between Russia and the latter country. On the 11th of April, 1805, a treaty of alliance with England was concluded at Petersburg, to which Austria became a party on the 9th of August, and Sweden on the 3rd of October following. This league, commonly called the third coalition, speedily led to actual hostilities. The campaign commenced the avowed purpose of the coalition. A succession of battles, fought between the 6th and the 15th of October, almost annihilated the Austrian army, before any of the Russian troops arrived. Alexander made his appearance at Berlin on the 25th of October, and on the following day he concluded a secret convention with the King of Prussia, by which that prince, who had hitherto profess’d neutrality, bound himself to join the coalition. Before leaving the Russian capital, Alexander, in company with the king and queen, visited at midnight the tomb of the great Frederick, and, after having kissed the coffin, is said to have solemnly joined hands with his brother sovereign, and pledged himself that nothing should ever break their friendship. He then hastened by way of Leipzig and Wembrn to Dresden, from whence he intended to overhaul Napoleon there, on the 15th of November, joined the Emperor of Austria. On the 2nd of the following month, the Austrian and Russian troops, commanded by the two emperors in person, were beaten in the memorable and decisive battle of Austerlitz. The immediate consequences of this great event were, the conclusion of a convention between France and Austria, and Alexander’s departure to Russia with the remains of his army.

Although Alexander did not accede either to the convention between France and Austria, or to the treaty of Presburg, by which it was followed, he thought proper after a short time, to profess a disposition to make peace with France, and negotiations were commenced at Paris for that object. But after a treaty had been signed, on the 21st of July, 1806, he refused to ratify it, on the pretense that his minister had departed from his instructions. The true motive of his refusal no doubt was, that by this time arrangements were completed with Prussia and England for a coalition against Napoleon; and it is impalpable that the negotiations which led to the signature of the treaty had from the first no other object beyond gaining time for preparations. On the 8th of October hostilities recommenced, and the victory of Jena, gained by Bonaparte, and won at Erfurt, laid Prussia C to many by at his feet. When this great battle was fought, Alexander and his Russians had scarcely reached the frontiers of Germany; on receiving the news they immediately retreated. They had left the Vistula, and were pursued by Bonaparte, and having been joined by the remnant of the Prussian army, were beaten on the 8th of February, 1807, in the destructive battle of Eylau. Finally, on the 14th of June, the united armies were again defeated in the great battle of Friedland, and pursued in such disorders that they were obliged to retreat behind the Niemen. This crowning disaster terminated the campaign. An armistice was arranged on the 21st; and five days after Alexander and Napoleon met in a tent erected on a raft in the middle of the Niemen, and at that interview not only arranged their differences, but, if we may trust the subsequent professions of both, were converted from enemies into warmly attached friends. A treaty of peace was signed between the two, at Tilsit, on the 7th of July; by a secret article, Alexander engaged to join France against England. He accordingly declared war against his late ally, on the 26th of October following. The treaty of Tilsit indeed converted the Russian emperor into the enemy of almost all his former friends, and the friend of all his former enemies. Turkey, too, though still at war by France, but at some time had been pressed by the united military and naval operations of England and Russia; but upon Alexander’s coalition with the French emperor, a truce was concluded between Turkey and Russia at Slobobia, August 24, and Turkey’s empire was saved from being threatened by it. A war with Persia, commenced in 1802, continued to be carried on with varying success.

On the 24th of February, 1808, Alexander, in obedience to the plan arranged with Napoleon, declared war against Sweden, and, having marched an army to Sweden Finland, which, after a great deal of fighting, succeeded in obtaining complete possession of that country. On the 27th of September, the Russian and French emperors met again at Erfurt; many of the German princes, with representatives of the King of Prussia and the Emperor of Austria, also attended. On the 11th of October. On this occasion a proposal for peace was made to England in the usual names of Napoleon and Alexander; but the negotiations were broken off after a few weeks. The French and Austrian with France continued for nearly five years; but, notwithstanding fair appearances, various causes were in the meanwhile at work which could not fail at last to bring about a rupture. The Russian autocrat havingfailed in the plan of policy with which he entered the war, and been grieved by the manner in which the avowal of war, but at the same time the exercise of a powerful foreign influence, appears to have resolved to try another game, and to see what he could gain by entering into confederacy with the great conqueror of nations. But the peace of Tilsit, and the new relations into which Russia was thrown, however much they may have been to the mind of the sovereign, entailed such privation and commercial suffering on the people of that country, by severing the connection with England, as made it at length impossible to continue it. However, the treaty of Vienna, signed on the 14th of October, 1810, which, following the battles of Eoling and Wagram, dissolved the fifth coalition against France, increased the Russian coalition by the admittance of Turkey described by Austria. The war with Turkey, also, which had been recommenced, continued to be prosecuted with success. But by the end of the year 1811, the disputes with the court of Paris, which ostensibly arose out of the seizure by Bonaparte of the cessions of the damans of France, was assumed such a height as left it no longer doubtful that war would follow. A treaty of alliance having been previously signed with Sweden, on the 19th of March, 1812, Alexander declared war against France; and on the 24th of April, he left St. Petersburg to march to the western frontier of Lithuania. The great events which followed may be supposed to be fresh in the memory of all but the youngest of our readers. On the 25th of May peace was concluded at Bucharest on advantageous terms with Turkey, which in a few weeks removed all the immense army of France, led by Napoleon, entered the Russian territory on the 24th of June. As they advanced, the inhabitants fled as one man, and left the invaders to march through a silent desert. In this manner the French troops, who had repaid to Moscow, from whence he proceeded to Finland, where he had an interview with Bernadotte, then crown prince of Sweden. Here he learned the entry of the French army into Stockholm; they were pursued, and defeated near Bonaparte, and having been joined by the remnant of the becoming the Swedish king, he would sign a treaty of peace with Napoleon while he was in Russian ground. ’Should St. Petersburg be taken," he added, ‘I will retire into Siberia." I will then resume our ancient customs, and, like our long-bearded ancestors, will till the earth, or recline, as to our resolution, explained Bernadotte, will liberate Europe.

On the 7th of September took place the first serious encounter between the two armies, the battle of Borodino, in which 25,000 men perished on each side. On the 14th the French entered Moscow. In a few hours the city was a smoking ruin. We cannot pursue the story of Napoleon’s homeward march, and the destruction of his magnificent army. Not fewer than 300,000 Frenchmen perished in the campaign. The remnant, which was above 150,000, repulsed the Russians on the 18th of December.

In the early part of the following year, Prussia and Austria successively became parties to the alliance against France. Alexander, who had joined his army while in pursuit of Napoleon at Vienna, continued to follow the allied troops throughout the campaign of this summer. On the 26th and 27th of August he was present at the battle of Dresden; and on the 18th of October at the still more sanguinary conflict of Leipzig. On the 24th of February, 1814, he met the King of Prussia at Coblence, and the two sovereigns signed a treaty binding themselves to prosecute the war against France to a successful conclusion, even at the cost of all the resources of their dominions. On the 30th of March, 150,000 of the troops of the allies were besieged at Paris. On the following day at noon, Alexander and William Frederick entered that capital.
We shall not enter into the detail of the transactions which followed this event. Alexander, owing in a great measure to his engaging affability, as well as to the liberal sentiments which he made a practice of professing, was a great favourite with the Parisians. The conquerors having determined upon the deposition of Bonaparte, and the restoration of the Bourbons, Alexander spent the remainder of the time he stayed in inspecting the different objects of interest in the city and its vicinity, as if he had visited it in the course of a tour. He left the French capital after a fortnight's residence. It appeared afterwards that the last days were embittered by the information of an extensive conspiracy of many of the nobility and officers of the army to subvert the government, and even to take away his life; and it is not improbable that this news, which is said to have been brought to him by a courier during the middle of the night in the 8th, which he spent at Alupta, may have contributed to hasten the fever by which he was two or three days after attacked. For full details upon this subject, and a translation of the Report of the Commission appointed to inquire into the affair by the Emperor Nicholas, we refer the reader to vol. ii. pp. 333–435 of Webster's Travels in the Crimea, Turkey, and Egypt; London, 1830.

The death of Alexander took place exactly a century after that of Peter the Great, under whom the civilization of Russia may be said to have commenced. The state of the empire did not change so completely during Alexander's reign, as it did during that of Peter; but still the advancement of almost every branch of the national prosperity was rapid. The 1st of January, 1813, was marked by the elevation of the Emperor Nicholas to the throne. Alexander filled the throne was probably, with that one exception, greater than had ever been exhibited in any other country. The reader will find in the 13th chapter of a Sketch of the Life of Alexander, by H. E. Lloyd, Esq. (5vo., London, 1836.) an able and interesting account of the characters of the two sovereigns. Alexander the people of Russia were indebted for many political reforms of great value. Certain checks were applied to the arbitrary authority of the monarch, by rights granted to, or recognized in, the senate; the provincial governors were subjected to the effective control of their governors, which was improved by a mitigation of the severity of the old punishments: and in various other respects; personal slavery was entirely abolished; and even of the serfs attached to the soil, great numbers were emancipated, and arrangements made for the eventual elevation of all of them to a state of freedom.

Under Alexander also, both the extent and the population of the Russian dominions were greatly augmented; the military strength of the nation was developed and organized; and the country, from holding but a subordinate rank, took its place as one of the leading powers of Europe.

Alexander was married on the 9th of October, 1793, to the Princess Louise Maria Augusta of Baden, who, on becoming a widow, followed the emperor to Egypt, where she died on the 25th of October, 1809. She was succeeded by his cousin Princess Alexandra, daughter of Catherine the Great. Alexander was educated with her by Elizabeth Alexiwna. By her, however, he had no issue. On his death, his next brother, the Grand Duke Constantine, was proclaimed king at Warsaw; but he immediately surrendered the throne to his younger brother, the present Emperor Nicholas, and reigned only too long to meet the terms of a treaty made with Alexander during his lifetime.

ALEXANDER. [See SIRMN.] ALEXANDERIA. [See SCANDERBOW.] ALEXANDRO. [See Alexander, who erected the monument by the Arabs, the only port of Egypt, stands on an artificial neck of land which joins the continent to the ancient island, now the peninsula of Phœnix; 31° 13' N. lat. 29° 53' E. long. We shall first describe its present appearance, and then give a short sketch of its origin, its ancient condition, and its existing monuments.
The district around Alexandria consists of a long narrow strip of land, bounded on one side by the Mediterranean, and on the other by the Lake of Mareotis. At the time of the French invasion in 1801, this lake was dry; but the British troops, during the siege of Alexandria, by cutting a passage through the narrow neck of land that separates it from Lake Aboukir or Mahit, let in the sea, and restored the bed of the lake, and the dominion of the water. The immense circle of land and the lake, extends from the lower of the Arabs, which is west of the town, to Cape Aboukir, east of it; the width of this tract near the city may be seen from the accompanying plan. The lake is a continuous chain of calcareous rock and sand, without good water, and almost without vegetation.

There are two ports. The old port is at the extremity of an extensive seacoast of granite rocks, stretching from Cape Marashli on the mainland to the Cape of Fig Trees, which is the western extremity of the island of Pharos. There are three passes into the deep, the deepest of which will admit frigates, and probably vessels of the burthen of the line. The eastern extremity of the roadstead, is sheltered from the violent winds that blow between N.W. and N.E., by the high chain of the island of Pharos. The anchorage is good, and the port might be made one of the most enviable in the world. The new port has its entrance in a narrow passage, which lies across the entrance, and it is further exposed to the violent north and north-easterly winds which sometimes render it impracticable in such weather. It is also very shallow in many parts, owing both to natural rocks and to sand and rubbish with which it is choked. The entrance into the new port is also sometimes barred with sand; and the constant decomposition of the calcareous rock, which in some parts lies it, contributes still further to choke it up. It is stated in the public prints that this port is got up to only a large sum in improving the ports of Alexandria.

The passage into the new port is about 650 feet east of the Diamond Rock, and the fort of the Pharaohs. This fort is also a light house, and is connected with the island Pharos by an artificial dyke, made in the ancient granite rocks which lie transversely across the island of Pharos itself consists of a saline and a dazzling white calcareous rock; it is bordered with rocks, especially on the west side. The Arab's calls it Roche de Tan, or Garden of Fig Trees, because this fort is successively crowded on this other present spot. The island shows many traces of ancient buildings, such as we know existed under the Greek dynasty and the Roman empire.

The modern town occupies the neck of land between the two ports, which was originally intended merely to form a continuation of the Pharaohs; but, in consequence, it had a continual increase which it receives, it has gradually become the chief inhabited part. Such quays and jetties as there are on the two ports, are, in a great measure, formed of the materials of old Alexandria. The quayings, the public wharfs, on the points of the rocky promontories of granite, marble, and other stones, which clearly indicate that they once belonged to ancient edifices. The street are narrow, and unpaved, full of dust in dry weather and of mud when it rains; the houses, both internally and externally, present no great attractions; and the general appearance is, to a European, deary and monotonous. The town contains a great number of mosques, and some public buildings, such as the custom house, new palace, marine arsenal, and the architectural group of buildings called that of the Thousand and One Pillars, the chief ecclesiastical building. Alexandria is still a place of considerable trade, being the chief port by which the products of Egypt are exchanged for those of the various countries of Europe. Most of the commodities have a peculiar name in Alexandria. The population, at the time of the French invasion in 1801, was only about 7000; at present it is said to amount to above 25,000. In the bazaars may be seen a moluy population, composed of Turks, Egyptians, Arabs, Greeks, Jews, and the natives of Europe. The houses of Europe and Alexandria.

The rise of the sea at Alexandria is not regular; the greatest elevation is due to the winds that blow between the points of west and north-east, and even this does not amount to more than from nineteen to twenty-five feet. The climate of Alexandria is pretty good, through the occasional visitations of the plague in modern times, the inhabitants have given rise to a contrary opinion; but the ravages of epidemics are perhaps to be attributed more to the character and habits of the people than to the climate. The winter, during which the climate is most dangerous, is from December, January and February, 1799.

Alexandria communicates with the Rosetta branch of the Nile by means of a canal, called the Mannehouse, constructed in the reign of Ptolemy II. This canal was restored and completed in 1820 by the labour of 13,000 Fellahs, of whom it is said that 20,000 died in its course. The whole length of the canal is about forty miles, but it is already much injured by deposits of mud, and can only be navigated by the vessels of the Nile navigation. As the town has no fresh water, the inhabitants are obliged to have recourse to the eusternes which are annually filled partly by the winter rains, and partly by water brought from the oasis by a long tunnel.

ALEXANDRIA, ANCIENT, owes its origin to Alexander the Great, who, during his visit to Egypt, in B.C. 332, made orders to erect this city between the sea and the Lake of Mareotis. The architect was Dandanes, a Macedonian, and towards the entrance was to be a branch of the Nile. These orders were carried out by the present walls, which are chiefly the work of the Arabs. The main long street, thirty stadia in length, ran through the town from the eastern extremity to the Necropolis at the western, and this was intersected by another main street, ten stadia in length, running nearly east and west. Thus formed the district of the Lake and the Port of Alexandria. The object of this arrangement was to give the city the benefit of ventilation from the north winds. The main land and the island of Pharos were connected by a dyke, called the Heptastadium, in which, at each end, there is a chamber to admit or withdraw water from the sea. Over these passages there were also bridges; and we are told that water was conveyed along the dyke to the island of Pharos, though we do not understand how this was managed, unless the bridges must have been very high. On reaching the rocks which are the entrance to the light-house was constructed by Sostratus of Cnidus, in the reign of Ptolemy Philadelphus (B.C. 283); its height is stated, though probably with much exaggeration, to have been 409 feet. The point opposite to the Pharos was called Lichus; and as the Lichus itself was pronounced taxable towards the Pharos among some rocks, on which the Pharillai now stands, this prolongation received the name of Areo Lichus, or the Point of Lichus. In advancing from Lichus towards the eastern branch of the great canal, there are the places of the Pyramids, the theatre, and various temples. The port bounded by the two promontories, by the north-east part of the city, and the Heptastadium, was called the Great Port. The other port was called Eumastus (safe turn); it was situated near a small island called Alea, or the Chest, because the entrance could be completely closed; no traces of it, as far as we can learn, can be made out.

A canal which united the lake with port Eumastus terminated at or near port Kobos, and was nearly the S.W., an arm of the lake. The trade with Alexandria, with this port (city of the dead), or great cemetery of Alexandria. The city in its full extent was divided into several quarters, but we cannot assign either the names or the exact limits of each. The part of the east, otherwise called Bruchis, comprehended the whole of the district between the Lake of the Ouleaks, and the eastern or Rosetta gate (C). It contained also the Museum. The Rhaetons (R) bordered on port Eumastus, and contained the great temple of Serapis, which, after the
of Egypt by the Ptolemies. Near the two obelisks is part of a tower called 'the Tower of the Romans,' and probably it may be correctly named.

About the centre of the enclosure stands the mosque of St. Athanasius, on the site of a Christian church erected by this patriarch during the fourth century. In this mosque the French discovered the bemagogoe, or place where BEMAGOGOE of Egyptian breccia, which is now in the British Museum. It was ungenerously required of the French at the capitulation of Alexandria, (1801,) together with other monuments of antiquity, which they had collected with great pains. Near the mosque are the ancient shafts of these red granites, which are the only remains of a large monument that once existed in this part of the city; but it is not possible now to determine to what kind of an edifice they belonged.

The cisterns for keeping the Nile water are still in great part preserved. They consist of rows of chambers supported by columns, which form arcades of two or three stories. (See Plans, &c., Egypte, Ancq., vol. v., pl. 37.) The interior walls are covered with a thick red plaster that is permeable to water. The level of these cisterns varies, but some of them are from fifteen to eighteen feet below the level of the sea. At the time of the French occupation of Alexandria, there were about 308 of these cisterns known to exist, though many more are doubtless buried beneath the rubbish. The number in use at that time was 207. The only remarkable monument between the wall and the lake is the column commonly called Pompey's Pillar. It stands on a mound of earth about forty feet high, which contains remains of former constructions. The shaft, which consists of a single granite of red breccia, is 82 feet long, and weighs at least 276 tons: the whole height, with the capital, which is in bad taste, and the base and pedestal, which are no better, is about ninety-four feet. According to a Greek inscription on the plinth of the column, it stood on the west side of the city. It was erected (though perhaps not for the first time) in honor of the Emperor Diocletian by a prefect of Egypt whose name cannot be further deciphered than that it begins with PO. The foundation of this pillar has evidently often been repaired, probably with the benefit of this same granite, and it is, perhaps, owing to this disturbance that it is inclined about seven inches to the S.W. Amidst the broken materials around its base we discover the centre stone on which it rests: this is a piece of yellow breccia, with Egyptian hieroglyphics on it, placed the wrong end upwards.

Having crossed the canal, in going S.W. from the pillar, we come to some catacombs cut in a small elevation of a sandy, calcareous and farther secondarily of a porous sandstone, which faces the sea, we find almost countless excavations, in the sides of which niches are cut; these once formed part of the Necropolis, or burial-place of old Alexandria. The most spacious of these, which, like the rest, communicates with the sea by a narrow passage, is about half-way up the side of the column, and is near the place called, by the inappropriate name of Cleopatra's Baths. In the interior we find a great number of chambers and passages cut in the rock in such a style of decoration as proves their Greek origin. Such a monument could only be intended for a king. (See Plates, Egypte, v.42, for the plan; and Mayer's Viens in Egypt.)

The history of this city is as remarkable as its monuments once were. We can here only indicate its great epochs. From B.C. 322 to B.C. 30, when it fell into the hands of the Romans, it was the residence of the Greek kings of Egypt, the resort of commerce, and of many foreign nations, especially Jews; and also the centre of the scientific knowledge that the first day of July, 30 B.C., and at Alexandria, B.C. 48, the place sustained much damage.

From B.C. 30 to the Arab conquest under Omar, A.D. 640, Alexandria was still a flourishing city under the Roman emperors, and afterwards under the eastern empire. Alexandria, at the time of Julian, the Christian, is the day of the strength of the true faith. It was also the theatre on which the Christians showed their most determined hostility to all the works of Pagan art.

In 689, the Fatimite caliphs seized on Egypt and built New Cairo, from which it is still more, and sunk to the rank of a secondary Egyptian city; the discovery of the route round the Cape of Good Hope in 1497, tended still further to diminish the commercial importance of Alexandria.

The establishment of Christianity, was for a long time a grievous offense to the Christians. Theophilus, the patriarch of Alexandria, obtained permission from the emperor Theodosius (A.D. 390) to destroy this town; and no one could accuse him of executing the commission imperfectly. A place called Soma, (the body,) in the quarter of the palaces, contained the tomb of Alexander the Great. Besides the canal, from the ancient port to Eunous with the lake, there was also a canal from the lake to the town of Canopus situated near the mouth of the western branch of the Nile. By means of this canal the city was supplied with river water, which was kept in cisterns. These were so numerous that a Roman writer tells us, (De Bello Alexandrino, cap. v.) nearly all Alexandria was undermined, and furnished with subterranean aqueducts to convey the Nile water to private houses, where after a short time it became purified. Numerous traces of such constructions are found on the site of old Alexandria.

The city was embellished by the Ptolemies with the spoils of the ancient towns of Egypt, and for several centuries continued to receive accessions and improvements. At one time it was the rival of Rome in size, and the first commercial city of the earth. It became, what Tyre had been before, the point of exchange for the eastern and western world, but with a commerce more widely extended after the conquests of the Macedonians had laid open the eastern world to Greek enterprise, Dioclórus, who visited Alexandria just before the downfall of the empire of the Ptolemies, says, that the registers showed a population of more than 300,000 free citizens.

The enclosure which is surrounded by a double wall flanked with lofty towers, contains the remains of old Alexandria, an almost shapeless mass of rubbish, in which we see fragments of broken columns and capitals, pieces of wall, cisterns half choked up with earth, bits of pottery, glass, and grass, and the signs of complete desolation. There are five gate-ways or entrances into this enclosure. Of the two granite obelisks, commonly called Cleopatra's Needles, one is still standing; the other is lying near it on the ground. The dimensions of the two are pretty nearly the same. The whole height of the erect obelisk, including the pedestal and the three steps, all of which are covered with earth, is about seventy-nine feet. When the French examined the base of this obelisk, the accumulation of earth around it was about sixteen feet deep. It has suffered considerably, like all the remains, and even the natural rocks, of Alexandria, from the action of the atmosphere; the side is in the best state of preservation, and the south the worst of all. These two obelisks formed the entrance to the temple or palace of Caesar, as it is called, though there is no doubt that they were moved from some of the ancient cities...
For more information on the history and antiquities of Alexandria, see Diodorus, lib. xvi., Strabo, lib. xvi. D'Anville, Epitaphe. Description de l'Egypte, and the plates, vol. v. (Percwke, Nieuhof.)

ALEXANDRIA, a town and port of entry in the United States of North America, in the district of Columbia, on the west or Virginia side of the Potomac river, and about 10 miles from the mouth of the river: 38° 49' N. lat. Ships of the line can ascend the river as far as Alexandria, which is the most distant point from the ocean to which vessels of the largest size can be navigated in the United States. The whole voyage from the ocean to the entrance of Chesapeake bay to Alexandria is about 200 miles. Alexandria lies about five miles distant S.S.W. of the Capitol at Washington; the communication across the Potomac is kept up by a wooden bridge and boat docks.

The town slopes down to the river with the streets at right angles to one another, and is on the whole pretty well built. It has a courthouse, jail, almshouse, a theatre, market-house, and places of worship. Good wharfs extend along the river about half the length of the city, and allow the largest vessels to come up to them. The chief trade of the place is in flour, a great part of which is brought from the Shenandoah valley of Virginia, and the back part of Pennsylvania. The population of Alexandria in 1800 was 4136; in 1810, 7257; in 1820, 20113; of whom 2063 were blacks. The canal from Ohio to Washington, when completed, will probably much increase the trade of this town.

(Darby's Geog. of the United States.—Encyclop. Americana, &c.)

Returns of shipping at the port of Alexandria:

<table>
<thead>
<tr>
<th>Tons</th>
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<tr>
<td>American vessels entered,</td>
<td>7826</td>
<td>8298</td>
</tr>
<tr>
<td>Foreign vessels entered,</td>
<td>11,101</td>
<td>12,727</td>
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<tr>
<td>Registered tonnage belonging to the port in customs trade,</td>
<td>872</td>
<td>875</td>
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<tr>
<td>Steam vessels,</td>
<td>5066</td>
<td>4403</td>
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<tr>
<td>Emolled and licensed tonnage,</td>
<td>246</td>
<td>339</td>
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ALEXANDRIAN LIBRARY, a celebrated collection of books, formed and maintained by the first Ptolemy, king of Egypt, and his successors; and probably the largest which was formed, of the Ptolemies, and maintained before the invention of printing. It is said to have been founded by Ptolemy Soter, after he had associated his son, Ptolemy Philadelphus, with him on the throne (and therefore between B.C. 285 and 281), in consequence of the suggestions of Demetrius Phalerus, who had been associated by Ptolemy with him. Demetrius was appointed superintendent of the new establishment, and busied himself diligently in collecting the literature of all nations, Jewish, Chaldean, Persian, Egyptian, Greek, &c., as well as Greek and Latin. Some authors assert that, before his death, he had brought together 200,000 volumes; but Eusebius says, with more probability, that the death of Ptolemy Philadelphus, which occurred later, there were but 100,000 volumes in the library. It was situated in the quarter of Alexandria called Brucian. Philadelphus purchased the site of Brucian, and having established a rival library. The Egyptian monarch, in a fit of jealousy, forbade the exportation of paper (papyrius) from his dominions; and the invention of parchment, or, perhaps, the improvement of this material (charta Pergamena), was the consequence. (Pliny.) Ptolemy Philadelphus (or Euergetis II.) was also a lover of science, and is said to have commenced a second library, probably that in which was placed in the Serapeum, or temple of Serapis, in a different quarter of the city. It is said that during his reign all books brought into Egypt were seized, and sent to the Museum, as it was called, where they were transcribed, and the copies delivered to the owners, while the originals were detained in the library,—a royal road to the formation of a valuable collection. Almost all the Ptolemies were patrons of learning; and at last the Alexandrian Library is said to have amounted to 200,000 volumes. It is to be recollected that the rolls (columnae) spoken of contained far less than a printed volume; as, for instance, the Metamorphoses of Ovid, in fifteen books, would make fifteen volumes; and one Dylmus is said by Athenæus to have written 3500 volumes. This consideration will bring the number assigned at least within the limits of credibility, and the book of Celsus.

In the siege of Alexandria by Julius Caeser, the library in Brucian was burnt by a fire which spread from the shipping to the town, and 400,000 volumes perished. (Spor. Osorus, lib. 6.) The library of the Serapeum is said to have been burnt by the entrance of Chrestus, a Saracen. It burnt, at last, in a very short time re-established; and there is reason to presume that the diligence of the learned men, who frequented and were attached to these establishments, who were not wanting, to preserve some of the books through the formation of the new library, which they may have presented, through Cleopatra, the whole collection of Pergamus, amounting to 200,000 volumes. Gibbon (chap. xxviii.) asserts that the old library was totally consumed, and that many books were the foundation of the new, and continued to increase in size and reputation for four centuries, until, at the destruction of the Serapeum by Theophilius, Patriarch of Alexandria, it was dispersed, a.d. 390. That this was the case we learn from Osorus, who visited it in the year 409, and found it re-established. (Spor. lib. 6.) Still the library was re-established; and Alexandria continued to flourish as one of the chief seats of literature, till it was conquered by the Arabs, a.d. 640. The library was then burnt, according to the story generally believed, in the consequence of the fire which destroyed the city. Gibbon asserts, that if the Arabs had destroyed it, there was no means of preserving the books, which consisted of the Greek, Latin, and Arabic, both of which were extensively used. They continued, however, to be preserved, and with every facility for the pursuit of knowledge. This establishment was subsequently transferred to the Serapeum, and continued to flourish till the destruction of the temple by Theophilius. The sciences of mathematics, astronomy, and geography, were generally cultivated in the world. (Gau. des Inscriptions, &c.)

Connected with the library of Brucian was a college, or retreat for learned men, called the Museum, where the most learned was the foundation of the public library, and with every facility for the pursuit of knowledge. This establishment was subsequently transferred to the Serapeum, and continued to flourish till the destruction of the temple by Theophilius. The sciences of mathematics, astronomy, and geography, were generally cultivated in the world. (Gau. des Inscriptions, &c.)

ALEXANDRIAN CODEX, a celebrated manuscript of the Old and New Testament, in Greek, now preserved in the British Museum. It was sent by Cyrus, an Arab, in the name of Euphrasius, patriarch of Alexandria, then of Constantinople, to Charles I.; was placed in the royal library in 1628; and continued there until that collection was removed to the British Museum, in 1753. The history of the MS., before transfer to the British Museum, is very remarkable. For some time the received account was, that it was written in Egypt by a woman named Thecla, in the latter half of the fourth century, and was brought from Alexandria by Cyrilus. This minute specification of name and date seems entirely on two documents, one and the same. That part of Cyrilus, in fact, which is in the hand of Cyrilus, and the one last written, is in the hand of Cyrilus, and was stated to have come from tradition, was written by the hand of Thecla, a noble Egyptian woman, about 1300 years ago, a little after the council of Nicea. The name of Thecla was written at the end of the book; but on the extinction of Christianity in Egypt by the Mohammedans, the books of the Christians were reduced to the same condition. The name, therefore, of Thecla has disappeared and is cut out, but memory and recent tradition preserves it—Cyrilus, Patriarch Constanti. The high character of Cyrilus places
him above the suspicion of intentional fraud: but his statement is vague and unsatisfactory. Why the Mohammedans should spare the book, but tear out the transcriber's name; what is the value of the tradition which asserts the name of Thobias to have been written at the end of the book; how is it that Thobias is identified with the Thobias who lived after the Nicene council, when the existence of three Christian Theslais, two of them martyrs, is noted in the Fathers, and there may have been three thousand—these are questions on which any answer given to them will be of no light, nor can they be answered from external evidence. On the other hand, a passage in the letters of John Rudolph Wetstein, uncle to the celebrated critic of that name, has been brought forward to convict Cyrilus of inaccuracy, if not fraud: in which passage he asserts that Cyrilus, in one MS. at Munich, was ordered to make a copy of a certain MS. in Cyrilus' handwriting; that, however, this MS. has been destroyed in Egypt. This is rendered probable by internal evidence. Moreover, it appears to have been dedicated at some time to the use of the Alexandrian patriarch, if it is not true that in manuscript there is an interesting note at the foot of the first page of Genesis. It is to be observed, however, that the passage is confessedly very hard to be understood, and that a different version was given by Mr. Birch in his notes, from that which he subsequently adopted. The profession, which he is so ready to make,

'This book is dedicated to the patriarchal chamber in the fortified city of Alexandria Whoso shall take it thence he be excommunicated, torn forcibly from the church and communion of men.'

'Athanasius the humble.'

Two patriarchs of this name presided over the church of Alexandria after the Saracen invasion, one at the end of the thirteenth, the other in the fifteenth century,—either of whom might naturally have written this. It seems therefore, that there is no ground for charging Cyrilus with fraud.

The real age and value of this MS. has been much controverted. By some commentators it is said to be the oldest, and most valuable copy of the New Testament in existence; others deny it a remoter connexion with the text of Cyrilus, prefixed to the Eusebian canon; and that it has been destroyed in Egypt. This is rendered probable by internal evidence. Moreover, it appears to have been dedicated at some time to the use of the Alexandrian patriarch, if it is not true that in manuscript there is an interesting note at the foot of the first page of Genesis. It is to be observed, however, that the passage is confessedly very hard to be understood, and that a different version was given by Mr. Birch in his notes, from that which he subsequently adopted. The profession, which he is so ready to make,

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young, he was mainly guided by the advice of his councillors: Moskow, his tutor and brother-in-law: Miłosławko; and Plessov, a judge in one of the high courts at Moskow. The excess of taxes, laws and despots of those men caused an insurrection in Moskow in 1614, in which Plessov and several of their creatures were murdered. The Tsar's intercession with difficulty saved Moskow from the people's fury. He restored the tranquillity of Alexei's reign. Both of them chose Poland as their first scene of action. One of them, called Dmitri, pretended to be a son of Olszew, who, by way of distinction, was called the false Dmitri, and of Marina; he was treated like a prince by Wladislas of Poland, brother of the Tsar, but he was arrested in 1614, when the king died. He then went to Sweden, and thence to Holsten, where he was arrested, delivered up to the Poles, and put to death in Moskow. The other impostor's real name was Timoka Ankuskow. On account of some crimes he left his country, and sought refuge in Poland, where he declared himself to be a son of the late Tsar, Wasil; Shworska; but receiving no countenance, he went to Constantinople, where, in order to make himself popular with the Turks, he submitted to the ceremony necessary to become a Mohammedan. Being thus disposed, he wandered about in Italy, and having become a Catholic in Rome, he roved through Austria, Hungary, and Transylvania. He next obtained from the Prince Raguzsky a letter of introduction to the Queen Regent of Sweden, and received him well, and even granted him a considerable pecuniary allowance. Alexei, resenting this, insisted on his being delivered up; but the impostor escaped from Stockholm, and likewise from Revel, although in the latter place he was captured, and confined in prison. In a Lutheran religion: but at last, at the instance of Russia, he was arrested in Holstein, and in the year 1653 brought to Moskow, where he was put to death, after suffering severe torture.

The impostors would hardly deserve notice, were it not for a war which broke out between Russia and Poland in 1654, the real cause of which was the countenance given to these adventurers in Poland. The immediate cause of the war was the protection granted by Russia to certain Cossacks engaged in piratical enterprises.

In this war the Polish commander-in-chief, John Radziwil, was completely defeated at Skłowo; the Russians took Smolensko in 1654, and almost the whole of Lithuania was conquered and devastated by them. The Poles, being at that time a severely pressed by the Swedes, found it necessary, after two years' war, to agree to an armistice, which was concluded at Niemitz, in November, 1656. Austria being on this occasion the mediator. The Poles agreed to cede the province of Stettin, and Sierowo to the Russians, for a sum of money.
the decisions of the Boyar Courts, of such Greek laws as might be applicable in Russia, to compare these with the
Sudzénik, (a more ancient code compiled under Ivan Was-
silievič in 1542); and lastly to add new enactments for
cases till then undecided: this is the origin of Alexis So-
bitovitch Alexievič (Universal Code). This code was read
before the emperor in October, 1649, and in the same year printed
and promulgated. One of the most liberal enactments of
this code prohibits 'free peasants to sell themselves, or
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ALOE

ALEXEI PETROWITZ, the eldest son of Peter the
Great of Russia, and of Eudoxia the first wife of that
monarch. He was born at Moscow, in 1695. From his
boyhood Alexei showed a headstrong disposition, and an in-
clination for low pleasures, which, as he grew up, assumed
the character of a decided aversion and opposition to that
reformation of the ancient manners of the country which it
was the object of Peter's life to effect. It was in 1716,
having reached the age of thirty-seven years, that he made
his way through Europe, that the prince may be said to have first
thrown off his allegiance, by secretly quitting Russia,
and taking flight to Vienna, from whence he some time after
retired to Naples. Peter, having returned from abroad,
foresees the confusion and mischief which this conduct in the
heir apparent might eventually occasion, and went to
work with his usual energy to counteract and defeat a plan
which threatened the destruction of whatever he had done
for the improvement of Russia. It was some time before his
father's death. After Constantine, during his long
absence, the eldest son, Alexei, became the prince in
at length learned where he was, he gave instructions to some
noblemen, who proceeded to Naples, and induced the prince
to return to Russia, and to solicit his father's forgiveness.
The determined character of Peter's extraordinary mind now
decided the issue. The elevation of Old Peter to the
throne became the object of a conspiracy formed to
secure the person of his son, he proceeded to treat him as a
criminal. Being deprived of his sword, he was brought
before an assembly of the clergy and nobility, and there
compelled to execute a formal resignation of his pretensions
to the crown. At the same time, effectually to crush the
sedition of which he was the head, his principal partizans
were all arrested, and some of them put to death. His
mother was shut up in a monastery. But all this was not
done. He was himself on his way to the capital, but
beaten off at a distance. He was brought to trial, and condemned
to suffer death. This was in the
year 1718. The day after he was informed of his sentence,
Alexei was found dead in prison, and it was given out that
he had been carried off by some natural illness; but sus-
picion has been roused. Corny himself entered upon his
private execution accomplished the end, without incurring the
risks or inconveniences, of a public one. The prince,
whose unhappy career was thus terminated, left a
son, a child of three years old, who in 1757, on the death of Catherine the Great, became czar. The son,
then only ten years of age, succeeded to his throne
in 1818. He only reigned for three years.

After the death of Alexis, Peter declared his second son his heir, but he also died soon after,
and to the great grief of his father. These events opened the
succession to the empire, who, on the death of her illus-
rious mother, was declared empress. Corny entered upon his
private execution accomplished the end, without incurring the
risks or inconveniences, of a public one. The prince,
whose unhappy career was thus terminated, left a
son, a child of three years old, who in 1757, on the death of Catherine the Great, became czar. The son,
then only ten years of age, succeeded to his throne
in 1818. He only reigned for three years.

ALEXIS

ALEXIS COMNENUS I, Emperor of Constantinople,
ascended the throne in 1081. The Comneni were a family
of Italian origin transplanted into Asia Minor. Isaac Com-
nenus I, whose father Manuel had served the empire with
distinction, was elected emperor in 1057, by the troops, in
opposition to Michael VI. Isaac having seduced two years
after, and his brother John having declined to succeed him,
the imperial purple was assumed by Constantine Ducas,
a friend of the Comneni. After several reigns interrupted by
revolts, Alexis, the third son of John Comnenus, was raised
to the soldiers to the throne, which he had secured by
Nikonophor Botanistes, himself a usurper, was hurled down,
and forced to retire into a monastery.

Alexis assumed the reins of the empire at a critical mo-
moment. The Turks, who had spread from Asia Minor to
the frontiers of the Danube were threatened by swarms of barbarians; the Normans, who were masters of Apulia and
Sicily, attacked the provinces on the Adriatic; and, to crown
the whole, the first crusade came with its countless mul-
tidenumbers away to the time. With the Sicilians he took
Constantinople itself, in its passage. Yet, in the midst of
these tempers, Alexis steered the imperial vessel with
dexterity and courage. At the head of his armies he was bold
in action, skilful in stratagem, patient of fatigue, ready to
take quick advantage, and in many from his defeat with
an inexhaustible vigour. The discipline of the camp was re-
vived, and a new generation of men and soldiers was created
by the example and the precepts of his leader. In a long
reign of thirty-seven years he subdued and parlied the
conqueror, and restored, the arts of war and science were cultivated, the
limits of the empire were enlarged in Europe and Asia, and
the Comnenian sospire was transmitted to his children of
the third and fourth generation.—Gibbon's Decline and Fall of the Roman Empire, ch. xiv.

The most important event of Alexis' reign is the passage of the crusaders through his dominions. His conduct on
that occasion has given rise to the most conflicting state-
ments. The facts are variously related by various
authors, and the historian assigns to Alexis the contri-
bution from the western princes against the invading
Turks, but he was alarmed at the approach of hundreds of
thousands of undisciplined and riotous fanatics led by
Peter the Hermit, who ravaged the Christian countries on
the way with such rapacity as seemed to the emperor
harmless. This promiscuous multitude, however, was
safely passed by Alexis' care across the Bosporus into
Asia, where they were drawn by the Turks into the plains
of Nicaea, and there destroyed, in 1096. The regular part of
the expedition came, and in several divisions after the
command of Godfrey of Bouillon, of several French princes,
and of Bohemond and Tancred, son and nephew to Robert
Guiscard, the Norman conqueror of Sicily. After a long
and painful march, the crusaders encamped under the walls
of Nicaea, but were successfully repulsed by the imperial
guards, where they paid homage to Alexis, who found
means to tame and to conciliate the rude chiefs by
gifts, and by promises of assistance in their expedition to
the Holy Land, while he induced them all the other
chiefs to pass quietly over to Asia. This having accomplished,
Alexis assisted them in the capture of Nicaea from the Turks,
which conquest, however, he kept for himself. In the same
manner he profited by the progress of the crusaders, follow
his son John, who, like his father, was himself a
wrestler, and in 1099, after a long war, succeeded him.

Andronicus, who, after a
most adventurous career, usurped the throne in 1183, causing his relative, the youthful heir, Alexius Comnenus II., to be strangled, together with his mother Maria, the Emperor Manuel’s widow. Andronicus was himself overthrown and put to a cruel death three years after, and in him ended the imperial line of the Comneni on the throne of Constantinople. Andronicus’ posthummy reignied afterwards over the province of Trebizond, with the pompous title of emperors. (See the various Histories of the Crusaders, and the collection of the Byzantine Historians; and particularly the Hist of Alex Comnenus X.

ALFIERI (VITTORIO), was born at Asti in Piedmont, in January, 1749, of a noble and wealthy family. He lost his father when a child, and his mother having married again, young Vittorio and his sister Julia were placed under the guardianship of their uncle, Pellegriino Alfieri. Another uncle, Count Benedetto Alfieri, was the well-known translator who built the public and other private and public structures. Vittorio at nine years of age was sent as a boarder to the academy, or college of the nobles at Turin. He gives in the memoirs of his own life a very unfavourable description of the method of education which then prevailed in that and other institutions of the same kind. He went through the courses of Latin grammar, humanities, and rhetoric, all in Latin, learning by heart passages of the classics without knowing any thing of ancient history or geography. Italian grammar did not form part of his studies, and he was left to un-derstand Italian books as well as he could. He was, moreover, a sickly boy, of shy manners, self-willed, and impatient of control. At the age of thirteen he was admitted to study philosophy in the University of Turin, and of this course he also gives a very amusing description. The lectures were in Latin, with which Alfieri, notwithstanding his three or four years’ schooling, was not very familiar. The morning lectures were on geometry, and such was his progress, that he never could understand Euclid’s fourth proposition. The afternoon lecture was devoted to logic and metaphysics, ‘when the students, wrapped up in their mantles, used to fall regularly asleep, while the professor, half-dozing himself, went through a Latin explanation of his subject in a style which even at Turin, in which the lecturers are now and then interrupted by some one of his audience snoring louder than the rest.’ Thus passed the first year of philosophy; in the following, he studied physics to very little better purpose; he next passed on to civil and canon law, but his health would not allow him to continue his course, and he contented himself with the degree of Master of Arts, after going through a sort of examination by the help of his good memory, the assistance of a tutor, and the easy indulgence of the examiners. He had, at the same time, private teachers of geography, which he liked very well; of music, in which he made little or no progress: of fencing and of dancing, which latter he absolutely detested, as well as the French master who taught him. He attributes to the appearance of this nature unfavourable impressions of the French in general, which he says were strengthened by seeing the Duchess of Parma and her maids, on their passage through Turin, all besmeared with rouge, which was not then used by Italian ladies. Of one exercise he was passionately fond, and this was riding, which served materially to improve his health. He still continued to do, with the rank of ensign in a provincial regiment, which in time of peace only assembled for a few days twice in the year.

At the age of seventeen he obtained the king’s leave to travel under the escort of an English Catholic tutor. He went first to Genoa, and thence got rid of the tutor, and next proceeded to France, where he was introduced at the leve of Louis XV., at Versailles. He was struck with the ‘Jupiter-like superciliousness of that monarch, who accosted him with a severity which made him feel as if he was in danger of being sent to say a word to them.’ Alfieri’s pride (and he had a considerable share of it) was evidently hurt. From France he came to England, with which country he was pleased from the first. He admired the ‘general appearance of order and quiet, the life and activity of the people, the neatness and convenience of the houses, tiny as they appeared to him coming from Italy, the roads, the inns, the horses, the women—everything.’ Contrary to the common supposition, he found a greater facility of introduction into company to a foreign gentleman, than he had experienced in London than at Paris. After spending in England the winter of 1768, he crossed over to Holland, which country he liked best next to England. He attributed the advantages of both to their institutions, and the long habit of rational freedom. In Holland, Alfieri began his love adventures, which followed with all the madness of a southern temperament. His life was, for several years after, restless and dissipated; he ran from Holland to Italy, thence to Vienna, to Berlin, to Denmark, Sweden, Russia, France, England, Germany and Holland back again to England in 1771, when he had an intrigue, not very creditable to him, with a married lady, and fought a duel with her husband. He afterwards went to Spain and Portugal, and thus completed his tour of Europe.

In 1773 he returned to Turin, where he took a house, and apparently settled. There, in the midst of another love intrigue, and after having recovered from a severe illness, he began to write some scenes of a drama on the subject of Cleopatra. This he had previously versified. He next wrote, in French prose, two tragedies, Filippo and Polinice. At last, dissatisfied with these essays, he resolved on removing to Tuscany to study the pure Italian language. In 1777 he went first to Siena, and then to Florence, where he settled, working at a dramatic composition. He there also made the acquaintance of a lady who fixed his heart for ever. This was the wife of Charles Edward Stuart, called the Young Pretender, (see ALAMY, COUNTS OF,) to whose house most foreign visitors were invited. The lady afterwards separated from her husband, and retired into a convent at Rome. Alfieri continued attached to her, and followed her to several places: at last, after her husband’s death in 1788, it appears that she was so much attached to his person, that privately married, although the marriage was never made public, and by some is doubted.

In 1782 Alfieri had completed fourteen tragedies, ten of which were printed at Siena. Though he paid little attention to the structures of the purists, he answered a long letter of Calsauria, with the following answer, which he sent to Turin in which the latter is now and then interrupted by some one of his audience snoring louder than the rest.’ Thus passed the first year of philosophy; in the following, he studied physics to very little better purpose; he next passed on to civil and canon law, but his health would not allow him to continue his course, and he contented himself with the degree of Master of Arts, after going through a sort of examination by the help of his good memory, the assistance of a tutor, and the easy indulgence of the examiners. He had, at the same time, private teachers of geography, which he liked very well; of music, in which he made little or no progress: of fencing and of dancing, which latter he absolutely detested, as well as the French master who taught him. He attributes to the appearance of this nature unfavourable impressions of the French in general, which he says were strengthened by seeing the Duchess of Parma and her maids, on their passage through Turin, all besmeared with rouge, which was not then used by Italian ladies. Of one exercise he was passionately fond, and this was riding, which served materially to improve his health. He still continued to live in the academy, but under much less restraint; at the age of fourteen, by the laws of Piedmont, he was master of his own income, and only subject to his guardian in so far as he could not alienate his property. He then entered the army, as all young noblemen were
was a foreigner, an Italian, and appealing to the seven passports which he held in his hands, after half an hour's altercation came clearly through the barrier. Two days after their departure the munificence of their grief appeared to the house of the Countess, seized her furniture, Alfieri's horses, books, MSS., &c.; and their property in the funds was sequestered, under the plea that they were emigrants.

And his heart turned through Belgium and Germany back to Florence, from which city he never stirred after. Here he wrote his Misogallo, a collection of satirical sonnets, letters, and epigrams, in which he has embodied all his early prejudices and his more recent fears for the future of the French people. It is a work of undiscriminating passion. At forty-six years of age he began studying Greek, and by his own unassisted application he was enabled in two years to understand and translate the Greek writers. In 1799 the French troops entered Florence, but remaining in it only a few months, which Alfieri spent at a country seat, to avoid the unpleasant scenes of military violence. He afterwards lived quietly at Florence, seeing nobody except the Countess and his old friend the Abbate Caluso, till 1803, when an attack of the gout, to which he was subject, obliged him to adopt the more temperate and an extremely sparing diet, terminated his life on the 8th of October, at the age of fifty-five. He expired without much pain, his constitution being evidently worn out. The Countess of Albany was present by his side in his last moments. He was buried in the church of San Gallo and later thence to Pantheon, where many years before the sight of Michael Angelo's mausoleum had inspired him with a desire for literary fame. The Countess of Albany had a fine monumen, which is still preserved to him by the celebrants of life. Alfieri gave to Italy the first tragedies deserving the name. The unities are strictly preserved, the characters are few, the action one, no by-play or subordinate incidents; and yet, notwithstanding all this meanness, there is so much power in the sentiment, the nervousness in the language, such a condensation of single passion, that the performance of one of Alfieri's tragedies keeps the audience as spell-bound. Such, at least, is the effect they produce upon an Italian audience.

Of all the works of Alfieri's plays; the author has imparted an oriental and biblical colouring to the language and the situations of his personages, which, together with the fine lyric passages expressive of the changes in Saul's mental alienation, give a peculiar, an epic interest, to this play. "As a Philosopher," as is considered as the next in merit. Most of the others are on Greek and Roman subjects. Two are taken from the history of Florence,—La Congiura dei Pazzi, and Don Garzia, the son of Cosimo I., Grand Duke of Tuscany.—A. W. Schlegel, of Bonn, in his 'Course of Dunciad,' 1798, says of Alfieri's plays, which have been replied to by Gherardini, in his notes to the Italian translation of the professor's work, in which the reader may find all the arguments for and against this opinion, a very different from that of the French stage; it is chiefly distinguished by its extreme simplicity, the absence of all superfluous declamation and tedious narrative, and the exciting abruptness of his blank verse. This arrangement of words, which has been called harsh, was by him purposely studied, to supply the deficiencies of the measure.

Of Alfieri's minor works several have been already mentioned in the course of this article. He wrote six comedies, four of them on political subjects, being satires on the various internal politics of the day, etc. The first is called 'Many,' and the fourth is 'The Antidote, a mixture of the Three Poisons.' Among his prose works the Tiramise is a vehement invective against tyranny, taken in the old and extreme sense of Machiavelli's Prince. But such a government as has been extremely numerous in the states when he wrote, existed no longer in any part of Christian Europe in the days of Alfieri; hence the sketch of the former has all the thrilling vividity of a portrait from life, while the latter is only a book and his excited imagination. His translation of Sallust is very much esteemed. Alfieri's abhorrence of the excesses of the French during the first revolution, and of their subsequent servility under military despotism, has caused some to imagine that he regretted the administration which preceded his death. But this is a superficial view of things. A man may admire liberty, and yet be indignant against those who prostitute its name by crimes. Alfieri's idea of liberty was inseparably connected with that of order and security for persons and property, and he saw the latter violated every day both in France and in Italy. His violent temper led him sometimes to go too far in his punishment of offenders. But he was, upon the whole, an independent, candid, honest-hearted writer; and his example and his precepts gave a temper to the Italian mind which has not been lost. He formed a moral school, not numerous indeed, but including many of the brightest names in Italian literature of the present age. His name is ever mentioned by the Italians with respect. He kept aloof from those attacks and sneers against religion and decency, in which weaker minds indulged in his time; on these points he gave no scandal to any Christian heart. He was a warm and constant friend, and a man of honourable sentiments and conduct. Alfieri's works have gone through many editions, both separately and together in one collection. Two editions of the Italian were published,—one in Pisa, in 1806, in 22 vols. quarto; and another at Padua, 1809-10, in 22 vols. octavo. His tragedies, his autobiography, and some of his minor compositions, have been published in the Italian collection of the Italian classics, under the title of Opere Scelte, in four volumes, 1829, and this is the most correct edition of that part of his works. (See Vita di Vittorio Alfieri da Asti, scritta da esso.)

ALFONSIA. [See ELIS.]

ALFONSO V. of Aragon, and I. of Sicily, succeeded, in 1492, his father, the infant, who had annexed the crown of Sicily to that of Aragon. To these two Alfonso added that of Naples. Queen Joanna II. having adopted him for her heir and successor, Alfonso repaired to Naples, but was driven away by the party of the Angevins, headed by the famous Storace, viceroy of Calabria, and, according to the chroniclers in 1423, to name as her successor, Lewis III. of Anjou. At the death of Joanna, in 1435, Alfonso renewed his claims, but was opposed by René of Anjou, who after four years' death had been called to the throne last of the queen. The court of Rome declared for René. Alfonso's fleet was attacked near the island of Ponza by the Genoese who had taken René's part, and was totally defeated, Alfonso himself being taken prisoner. The Genoese sent him to Philip Milan, who was then also lord of Genoa. Alfonso found favour with his keeper, who was pleased with his acuteness of mind and his superior address, and who, being also jealous of the French dominion at Naples, not only restored him to liberty, but made an alliance with him. Alfonso repaired to Gaeta, which his fleet had taken by surprise, and thence he went into the Abruzzi and Puglia, where he found partisans among the nobility. The war between him and René was carried on in those remote provinces for several years, till at last the treachery of the condottieri chief, ruined the affairs of René, and Alfonso advanced against Naples in 1442. His soldiers entered the city through an old aqueduct, and René escaped by sea to the island of Ischia. Alfonso has now fixed his residence at Naples, and for the first time since the Sicilian vespers, Sicily and Naples were united under the same monarch. Alfonso applied himself to re-establish order and justice throughout the kingdom, which had long been a prey to misgovernment and confusion under the weak and corrupt reign of Joanna II. In order to strengthen himself with the nobles, whose power was very great, he extended their feudal privileges, and he also increased largely the number of the vassals. In return these were bound to pay to the parliament assembled grants of money, or gifts, as they were called, and fresh taxes to supply his expenditure. One of these taxes, which was a ducat upon each hearth, was resisted by the concubines of the clergy, at the same time as the king; and it is said that they shared in the immunities of the clerical order; until Alfonso, by a circular dated 3rd of February, 1446, charged the bishops with the collection of the tax and the arrears for three years past. He was buried in the cathedral of the city of Naples, where his name has the honor of having the name of tavolvere di Puglia.
Alfonso was engaged in frequent disputes with the popes, which were terminated by the treaty of Terracina in 1434, when he joined the Papal troops against Francesco Sforza, the son of his old antagonist, and dispossessed him of the marches. Sforza having afterwards become, first, general, and then duke of Milan, Alfonso joined the Venetians against him and his allies, the Florentines. It has been a subject of dispute ever since for the naked eye, and in the annals and histories, who was the greatest, the Greeks or the Turks, who brought their learning into Italy. The most famous feature of Alfonso's reign is his patronage of letters. Boccaccio, called Panormita, and Ponzani established the famous academy which supplied the want of the latter. Alfonso is written De Dietis et Fatis Alphonse; and Fazio, who was secretary to the king, wrote also commentaries De Rebus gestis ab Alfonso I. The learned Valla was for a time at the court of Alfonso. The study of jurisprudence was particularly encouraged by the same monarch. Ponzani and Gian Antonio Carafa, two celebrated jurists, were both his counsellors. He collected a splendid library at a great expense, and caused translations to be made from the Greek of the works of Aristotle, Xenophon, &c.

Alfonso was fond of the arts, and to him Naples owed several embellishments: he first caused the streets to be paved with large flags; he restored the aqueducts which supply the fountains with water, and drained the neighbouring marshes which infected the atmosphere. He embodied the mole and the arsenal, and raised the fine triumphal arch which forms the entrance of the Castelnuovo, which was then the king's palace.

Under Alfonso both Naples and Sicily, so long distracted by internal feuds, civil wars, and foreign invasions, enjoyed a period of tranquillity, and his grateful subjects styled him the Magnanimous, whilst the men of letters whom he protected called him the Wise.

Alfonso had no legitimate children, having early separated, owing to his licentiousness, from his queen, though not ill-founded jealousy. By his various mistresses he had but one son, Ferdinand, to whom he was fondly attached. In order to secure him at least one of his several kingdoms, he ascended a parliament in 1442, and by making large concessions to the barons, induced them to declare Ferdinand, Duke of Calabria and heir to the crown. Next day Alfonso invested his son at the altar with the ducal crown, and the barons did him homage. The pope had already granted Ferdinand a bull of legitimacy. Alfonso was also a considerable patron of the arts. He patronised Boccaccio, Ponzani, Valencio, Sandirino, and Sicily. This John was afterwards succeeded by Ferdinand called the Catholic, who reacquired the kingdom of Naples, which continued to be a dependency of Spain for several centuries.

Giovanni Alfonso's first poet of the Sicilian, to favour the party of the Aragonese faction, which had been exiled; the city was hard pressed by the besiegers, when the news of Alfonso's death released it from danger. The king had attended a great hunting party in Puglia, where he overtaxed himself, and was carried back ill to Naples. After giving his peremptory advice to his son Ferdinand, recommending him to moderate the taxes, to keep peace with the pope, and to favour his Neapolitan subjects in preference to the Aragonese and Catalonians, he expired on the 17th June, 1458.

ALFONSO II. of Naples, son of Ferdinand I, and grandson of Alfonso I, was the chief cause of the famous revolt of the barons under his father's reign, and of the civil war in 1444. On the death of Ferdinand in 1454, he succeeded to the throne: but the approach of the French, under Charles VIII., frightened him, and he ran away before he had completed one year of his age. He retired to a convent at Messina, where he practised great austeritys to atone, as he thought, for the cruelties he had committed. He died soon after. Ferdinand II., his son, succeeded him, and, with the assistance of the Spaniards, drove away the French; but dying prematurely in 1462, he succeeded by his uncle Frederic. Alfonso II.'s brother.

ALFONSOs, of Spain and Portugal. [See ALONSO.]
with Latin than his biographer has done. The works of this prince shew that at some time or other he must have acquired a knowledge of Latin which, for a prince, in Alfred's age, was almost miraculous. In his youth and manhood we find him so occupied that we must admit that unless this knowledge was acquired early, it would be unaccountable. Judging from his own or Aelfric's style, his works in his native language shows that his acquaintance with classical models was familiar, and extended to more than mere words and phrases—he had imbibed the spirit of the authors of Greece and Rome.

But before we proceed to a consideration of the sagacious statesman and general, let us examine the results of his political career. In his early life Alfred did not neglect those accomplishments which the age admired, and which its habits and mode of life rendered indispensable; he was expert in hunting and shooting, and early accustomed to the superficial finding of fowl; and even in his youth he distinguished himself in successful conflicts with the numerous bands of foreighers who at this period so frequently invaded the English coast.

The enemies with whom Alfred had to contend were Danes, this term ought to be understood all the Scandinavian nations, viz. Danes, Swedes, and Norwegians indiscriminately, who, because they at that period spoke a common language, the Norse, (then called Danisch, or Donak Tunga, in foreign countries,) went by the appellation which, strictly speaking, denoted the invaders to the Scandinavian tribes. Many reasons, indeed, make it probable that the invaders on the English coasts in Alfred's time were chiefly Norwegians, and not Danes, in the strictest sense of that word. Danish invasions commenced nearly a century later than other English raids in the north, and the chroniclers, Matthew of Westminster and others, who mention Rolf the Walker's invasion, call him and his followers Danes; and yet it is well known that he was a Norwegian nobleman; and although we cannot identify the names of other chieftains with those known in Norwegian annals more than with those known in Danish history, it still is more probable that they chiefly belonged to the former nation.

The Scandinavian nations of this period cultivated war as a favourite science. Their other acquirements and talents, even the literature (and they were very learned men) were subversive to it, and were valued in proportion to the degree in which they contributed to its advancement. The constant themes of the poets were the warlike exploits of eminent chiefs; and history recapitulated in prose the subjects of the songs of many a bard. In the ninth century the Norwegians seem to have surpassed all other European nations in bravery and warlike spirit. So great was the fame they had acquired, that subsequently they were hired in considerable numbers on the western seas, and contested Europe with Asiatic and African enemies. It is essential in Alfred's history rightly to appreciate the character of the enemy with whom he had to contend; for it has been grossly misrepresented by the monastic writers, and consequently Alfred is said to have been inferior to his predecessor, he can only do justice to Alfred by bearing in mind that he had to defend his dominions against the incessant attacks of the most accomplished warriors of the age, in which he displayed such skill, perseverance, bravery, and prudence, as must secure to him a high place among military commanders.

Frequent as foreign invasions had been during the reign of Ethelwulf, as well as during the two subsequent reigns of Ethelbald and Ethelbert, they became particularly formidable at the commencement of the reign of Ethelred, (866,) when the Danes and Swedes encamped on the coast of Essex. Alfred seems to have been his brother's most valuable general. In this year the foreign army invaded East Anglia, but after obtaining horses from the inhabitants, they made peace with them, and committed no further depredations. The year following was marked by the loss of the city after a bloody battle with the Northumbrians, in which the two rival kings, Osbyht and Ella, who had united their forces against the invaders, were slain. In 868 they returned to the same point, and beseigned the Mercians besought Ethelred and Alfred to come to their assistance; the brothers instantly marched with the West Saxon army, but after a skirmish with the foreigners the Mercians chose to treat with them. During the two following years the exploits of the invaders were confined to Northumbria and East Anglia; they killed Edmund, the king of the latter, in a bloody battle; in the former they plundered a wealthy monastery called Medeshamstedt, (now Peterborough,) and slew the abbot and all the monks.

In 871 the foreigners invaded the kingdom of the West Saxons, and in this one year, besides many minor battles which Alfred fought at the head of small bands, there took place altogether nine great battles between the invaders and the West Saxons. At Inglefield the latter were victorious, at Reading the former; at Hesedune (near West Stafford) the West Saxons gained a great victory against the kings Bagase and Heaufelde, of whom they slew the former, along with five earls. This victory must be mainly considered as Alfred's. He bravely attacked the enemy, while Ethelred, on his side, deferred engagement with the Saxons, while the Saxons landed and occupied Mercia and Northumberland. After so many bloody battles Alfred's army was greatly reduced, and he was well aware that he could not now take the field with advantage. Still he was determined to leave nothing untried to repulse his enemies; but the pressing circumstances—the very inability to bring an effective army into the field—first suggested the idea, which ultimately proved so salutary, of fitting out a fleet.

For this true account of the origin of the English fleet it would be unfair to leave it in any History of England; but an attentive reader of the Saxon Chronicle will nevertheless find it confirmed by the facts there stated. Extraordinary distress first suggested the idea of the 'wooden walls; and it is remarkable, that Alfred, being in such desperate circumstances, became the first founder of that naval power which in subsequent ages was to be an object of the world's dread and admiration. Alfred perceived that he had great advantages in fitting out a small flotilla to act in the narrow coastal waters, where the Danes and Swedes landed. If it was necessary to wait for the fitting out of his fleet, which was not possible for a long time, when he was compelled to ascend for a short time, the perpetuation of his reign and the preservation of the West-Saxon monarchy were, in all probability, mainly owing to the existence of this small navy; for by means alone, so far preserved possession of his kingdom, that it could be said that the invaders still had a fighting enemy within Alfred's domains.

Small as Alfred's fleet was in the beginning, in the first naval engagement his men attacked seven of the enemy's ships, which were considerably superior to them. Finding that regular battles were not the most advantageous warfare against a leader such as Alfred, the invaders changed their plan; they entered his fortresses by night, and there determined to resistance. They mustered to two thousand, but Alfred found means to drive them out, and even obtained hostages as a guarantee that they would immediately leave his kingdom: yet a part of their army soon after entered Exeter in a similar manner. Alfred pursued them; they again had to do with him by solemn oaths and hostages to evacuate his dominions.

In the year 876, shortly after Epiphany, the invaders entered Chippenham and took possession of it. About this time they must have received considerable reinforcements, although contemporary writers do not mention such a fact; but that Alfred no longer had an effective army, appears manifest, from the expedients and fruitless negotiations to which he was driven. This greatly encouraged his enemies. They now spread over the whole kingdom of the
West Saxons, and for a very short time accomplished a despotistic military occupation. Many of the inhabitants fled their old homes, and sought more secure abodes beyond the seas.

Alfred, with a small troop, was obliged to conceal himself in woods and mountain fastnesses. Neotus, and, after him, Asser, says that he for a time sought refuge with one of his cowherds; who, it seems, so faithfully kept his mysterious master that he did not even know his wife and the young king was their guest. One day, while sitting near the fire pointing arrows and making a bow, she had set him to turn some cakes which she left on the fire: owing to Alfred’s neglect the cakes were burned, for which she chid him, saying that it was ‘good at eating cakes, but burning turning. Alfred passed the time from Christmas to Easter in a state of concealment and destitution; even in these circumstances he was not entirely inactive, but secretly maintained a kind of correspondence with the most devoted of his former adherents, and even in the winter of 880–881 this winter had with twenty-three ships invaded Devonshire, as slain with 840 men, and his standard, called the ‘Raven,’ was taken. It is extremely difficult to determine how far Alfred was concerned in, or connected with this exploit, but it is believed that he did not participate in it.

About Easter, Alfred, with a few of his friends took possession of a small island situated in the midst of a marsh formed by the stagnating waters of the Tone and Parrett in Somersetshire. This island the Saxons, probably from the name of which it was then known, and which modern name is Athelney. This inaccessible place he made still stronger by fortification; and from thence, assisted by his neighbours in Somersetshire, he made frequent excursions against the foreigners, and at Withamstede again to the head of a small fleet, Leofric and his army routed the invaders.

This last article in the treaty Alfred insisted upon, not so much from zeal for conversion as from fear, which repeated experience had shown to be well grounded, that the difference of religion would make such oaths as he prescribed of no effect. Accordingly the king, Godred, and thirty chiefs of his army, were baptized at Aile, (Auler), a place near Athelney; Alfred stood godfather on this occasion, and gave to Godred the name of Athelstan. Godred remained twelve days with the king, and when, in order to undergo that rite, he was leaving the land he was staying at Wedmore, he left him, he was honoured with magnificent presents. On this, as well as on many other occasions, we may admire in Alfred the rare union of fortitude and moderation, of unshaken firmness and ready forgiveness; with this, as on other occasions, of mercy, he was especially beloved. Godred ever after continued his faithful friend and vassal.

During the four following years (879–882) a new swarm of invaders overran several parts of Mercia and East Anglia; but after the victory of Edington we find Alfred’s power, both by land and sea, gradually increasing. In 881 he fought a naval battle, and took four ships from the enemy. In another battle, in 885, he took sixteen ships. He also obtained several victories by land, one, for example, very decisive, at Rochester. Thus, owing to his strength and perseverance, the foreigners were gradually driven away, and thus, by common consent, sovereign of all England; excepting those parts of the north and east of which the foreigners still retained possession. Their tenure had now, however, become exceedingly precarious. Yet there is no record of any solemn treaty or purchase made by the king, and he thought it proper to keep possession of the land which he had conquered.

The king, however, remained in a strong position; and the foreigners who had settled in Northumbria and East Anglia, who were in a very few cases in a like condition as those who were in Essex, also, now that they had seized Exeter, and another of forty ships, with which they invaded Devonshire. The king, accordingly, with the main body of his army, marched to Exeter, leaving only a detachment of chosen troops to prosecute the war. But it was followed, and upon the detachment which he had left in Essex pursued the enemy to Bemfleet, to which place they retreated, it having been fortified by Hæsten. Hæsten being absent, but the place full of warriors, the king’s troops, contrary to the advice given, persisted in the attempt; not to take the city, which they found, captured Hæsten’s wife and his two sons, disabled some of the enemy’s ships, burnt others, and brought several away either to London or to Rochester. Hæsten’s wife and sons, when conducted to Alfred, suggested motives for mercy—never for revenge; and this time he recollected that he had been a godfather to one of
Heston's sons, and the Duke Ethelred to the other. He dismissed them, not only unhurt, but (respecting their rank in a manner agreeable to the spirit of the times) each was honoured with presents. As soon as Alfred with his troops reached Exeter, the enemy retreated to their ships; but while he was occupied in Devonshire, two main divisions of his army, under South Shobor and Easter Ethelred, erected a fortification. From thence they marched along the Thames and on to the Severn, and then following the course of that river up to buttocking, were joined by many Northumbrians and East Anglians on their march. Here they were besieged by three connecting forces, the Dukes Ethelred, Ethelm, and Ethelnoth: the siege continued many weeks; the enemy were brought to the greatest distress by famine, and at last had nearly eaten up all their horses. At length they made a sally on the besiegers, who overpowered and crushed the remnant of the few, but were vanquished by the English, who however lost in this battle several officers and men of rank. A part of the enemy saved themselves by flight. Once more they gathered a considerable army out of Northumberland and East Anglia, and assembled at the Thames, and invaded over Northumberland and East Anglia, to Mersey. Here they were again besieged, and were compelled to lie in no uncertain danger. In the winter, they entered the Thames with their ships, which they towed up along that river and the Lea. On the latter stream, about twenty miles from London, they erected a fortification. In the mean time, those whom Alfred had defeated at Exeter had been in the same march as Ethelred, and plundered the country about Chichester; the inhabitants of that town attacked them, slaughtered many hundreds, and took some of their ships. The citizens of London marched out against those on the Lea, attempting to dispute them the sea coast; but the force was defeated. The river Lea, a time defeated (896). During the autumn Alfred had his camp pitched in the neighbourhood of London, in order to protect the reapers while engaged in the harvest.

By the exertions of fortiresses, combined with the great vigilance and activity, he compelled his enemies to retreat upon the Severn. In the years 892-893, a severe pestilence raged in England, both among men and cattle; this calamity greatly checked Alfred's military operations.

The english pirates (Spelman says their captain's name was Siegfert) fitted out vessels for stealing and robbing along the south coast, and on the sea coast of Cornwall. Many of these pirates, and between the king's ships, and the pirates, in which a great number of the latter were killed, and others, who with difficulty had escaped, were afterwards taken and hanged at Winchester. English historians seem not to be aware of any distinction between the pirates and the berserks, who devastated the country during Alfred's reign; yet Alfred's proceeding, as well as the words 'mid staithegum used in the Saxon Chronicle, show that the age considered the difference between these and the berserks as very great. With regard to the English ships and the English forces, he treated them with every mark of respect and dismissed them loaded with presents; but pirates he condemned to ignominious death.

During the last two years of his reign Alfred seems to have enjoyed some tranquillity. He died on the 27th of October, 901, being fifty-two years of age, and having reigned twenty-nine years and six months.

Thus far goes the chronicle of Alfred's reign, or the bare recital of public events in which he was engaged, as a leader, in which he always, in respect to talent, knowledge, policy, and character, maintains a lofty supremacy over his contemporaries. Yet we may say that only the less important part of Alfred's history has been handed down to us; and which has demanded exclusive attention to military exploits; the arts of peace were disregarded and held in small esteem, unless, indeed, they were brought to bear upon religious establishments.

Thus we find more information respecting monasteries founded, or erected, or repaired by Alfred, such as one at Alnwick, another at Tattershall, and a third at Winchester, than the towns and castles, which, at his command, and under his direction, were rebuilt and repaired. Yet it is certain that London came into his possession in a ruinous state, and that, in rebuilding a great part of it, he introduced the use of stone and brick; wood being the only material used before his time. He also rebuilt Winchester and many other cities. The most glorious achievement of Alfred's reign, however, was the establishment of the navy. The commencement of shipbuilding once conceived, it appeared that it was prosecuted with system, and he was also encouraged to further exertion by the success which attended his flag on almost every occasion. He was not content to multiply the number of such ships as formerly had been in use; but he introduced also various improvements into naval architecture: 'His ships were not unlike the Saxon Chronicle, like the Danish or Frisian ships,' that is to say, they were not like those ships which till that time had been thought the best of those used in the German fleet; and from the Scotch and the Frisians Alfred's ships were better. It seems that even in Alfred's time his fleet had so rapidly increased, that it considerably exceeded the number of one hundred sail: it was divided into small squadrons, and stationed in different places of the coast.

Alfred accomplished a task of extraordinary difficulty in the consolidation of his dominions. When he succeeded to the sovereignty of the West Saxons, Mercia, East Anglia, and Northumberland still existed as independent kingdoms of the same age. They all had been so far depressed by the ravages and depredations of a common enemy, that the prudence or policy to see the advantage of a uniform co-operative plan of defence, and accordingly they were crushed and conquered in detail. The West Saxons, it is said, were in the year 891 assembled to defend England: their views were not merely confined to their coasts and boundaries; thus the Hægemonia (Leadership) naturally and spontaneously fell into their hands: they became the English, the Liberales, and Alfred their Thesmioles. It was Alfred's object to regained for them the whole Anglo-Saxon nation, and to create a new national spirit; and this, we find, he effected not ostentatiously, but by unwarried political activity: he was in reality the unassuming, the Liberalus, the active, the sagacious, the wise, the statesman: he was, however, quite content to be called King of the West Saxons; and probably deemed it childish to provoke disputes by the assumption of an empty title, while at the same time he incessantly laboured, by the most judicious means, to render himself, as far as possible, the strongest and best that was earned by any sovereign.

Alfred compiled a code of laws for his subjects; but whether any part of these has been preserved, or how much of them is embodied in subsequent codes, cannot now be determined. From the wisdom of this code, it is said, four thousand new laws were added to the ten already existing, and between the king's ships, and the pirates, in which a great number of the latter were killed, and others, who with difficulty had escaped, were afterwards taken and hanged at Winchester. English historians seem not to be aware of any distinction between the pirates and the berserks, who devastated the country during Alfred's reign; yet Alfred's proceeding, as well as the words 'mid stæthergum used in the Saxon Chronicle, show that the age considered the difference between these and the berserks as very great. With regard to the English ships and the English forces, he treated them with every mark of respect and dismissed them loaded with presents; but pirates he condemned to ignominious death.

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In estimating the merits of Alfred as an author and a scholar, we are less astonished at the vast extent of his knowledge, and even at his literary activity, than at the good taste evinced, both in the choice which he made of books for translating, and in the execution of his translations. Spelman has furnished the following list of his original works:—


Alfred made greater efforts for the advancement of knowledge among his subjects than any prince of the ninth century—even more than Charlemagne. Here, indeed, it would be difficult to make a comparison. Their independent kingdoms were not in the same position. The first thing which he did was to establish his own ecclesiastical courts, and to induce ecclesiastics to try cases by the English law. He then set about writing a Latin version of the English laws, which were previously written in the Anglo-Saxon language. Alfred’s laws are the earliest laws of the English people in a written form. They were a great improvement on the old law, and they laid the foundation of the modern law of England. Alfred also wrote a great many works on law and politics, which were used by the kings of England for many centuries. He was the first Englishman who wrote in Latin, and he was the first to introduce the use of the Latin language in England. Alfred was a great patron of learning, and he established many monasteries and schools. He also founded the University of Oxford, which was the first university in England. Alfred was a great pioneer in the advancement of learning, and he paved the way for the later development of the English language and literature.
It is in this division of the order that all the useful species, and those of large dimensions, are to be found. All the kinds that are consumed in the important manufacture of
help [See Kelp]; the eatable sorts, which, in the state of birds' nests, are collected in the Indian Archipelago and sold at a high price to the Chinese; those which we consume as laver; the species that afford vegetable glue; all those from which the important medicine called
Iodine is obtained; and finally the principal part of what our farmers use for manure, belong to the great tribe of
junctile Algae; of which 55 genera and about 160 species are known as natives of the coasts or ditches of Great
Britain.

Of all the species, that which is the most common is the
Fucus vesiculosus, a plant of which great quantities are cast
upon our coast, and which is known by its strap-shaped, olive-green, forked divisions, having little yellowish oval uneven pods at their points, and by the cracking noise it makes when trodden upon; a circumstance which is owing to its stems having a considerable number of air bladders, by means of which it floats. The structure of the pods is highly curious. Externally they consist of a hard rind covered with tumours, each of which has a little hole in its centre. Internally they contain a soft mucous substance, in which lie, next the rind and immediately below its tumours, a number of round balls (a). These little balls are composed of jointed threads (b), which hold together a great many little oval grains (c) enveloped in a sort of jelly. These grains are the means the species has of propagating itself, and when ripe they are discharged through the holes in the tumours above described.

Another extremely common kind, Ulva bullosa, is found floating in ditches and in stagnant pools, where it rises to the surface in green, blistered, slimy patches, which, to the naked eye, are merely a thin membrane of the most uniform texture. But if microscopically examined, this is an object of no common beauty; it seems as if composed of little green balls (a), about as big as the particles in the human blood, having no sort of adherence with each other, but holding together by a transparent thin jelly. It is by these little green balls, or by the matter they contain, that the ulva is propagated. The common
Laser of the shops is very nearly the same thing, but is a marine species.

2. Jointed Algae.—To this section belong the greater number of freshwater species, and many of marine station. The jointed Algae are commonly called Conferve, and are instantly recognised by their having thread-like tubes, the joints of which differ in length and in manner in which their contents are arranged. An endless variety of these little plants may be found in ditches and running streams; and their structure is not less interesting than simple. As far as we know, they multiply by means of little granules contained in their tubes; and they grow by the addition of one tube to the end of another. They are always jointed into bundles, but are always thus simply constructed. The most remarkable among them are the Zygnema and Oscillatoria, both of which approach the animal kingdom, but in unequal degrees. The species of the latter genus form dark green; or purple slimy patches, in damp places, or in water, and are exceedingly remarkable for a power they possess of moving spontaneously; when in an active state their tubes are seen to unite and twist about just as if they were vegetable worms, but they grow like

plants, and their manner of increase is altogether vegetable; yet they possess several of the chemical characters of animal matter, and when burnt yield a carbon of the most fetid odour, exactly resembling that of decaying animal substances.

3. Disjointed Algae.—At this point we have reached the organic limits of the animal and vegetable kingdom. Disjointed Algae are characterized, by their original or final spontaneous separation, into distinct fragments, which have a common origin but an individual life. They may be compared to animals living in society, and only dispersing when the necessity of multiplying their race obliges them to do so.
ALGAROTTI (FRANCESCO), was born at Venice in 1712. His father was a wealthy merchant. He studied at Rome and Bologna, in which latter place he had for instructors Eustachio Manfili and Francesco Zanotti, who afterwards lost his right hand. In 1742, Algarotti made great progress in the study of languages, the mathematics, astronomy, and anatomy. Being at Paris at the age of twenty-one, he there wrote his Scienza per il Darte, or explanation of the system of Newton, adapted to the French language, or rather, as was his habit, considered as his best work. He next proceeded to London, whence he accompanied Lord Baltimore to Petersburg. He gave an account of this journey in his Lettere Rurali, a country then comparatively little known. From Russia he went to Germany, where he became acquainted with Frederic, then Crown Prince of Prussia, who was living in philosophical retirement at Rheinsberg. The prince was so much pleased with his society, that four days after his accession to the throne, he wrote to Algarotti, who told him, in England, in the most respectful manner, to come to Berlin. Algarotti accepted the invitation, and remained afterwards in the Prussian capital or at Potsdam the greater part of his life, not as a service courier, but as the friend and correspondent of the Crown Prince. Frederic, who was very poor, made him a chamberlain, and employed him occasionally in diplomatic affairs. He was also commissioned by the Elector of Saxony to collect objects of art throughout Italy for the gallery of Dresden. For five and twenty years from that time he lived in Saxony, and owed to the influence of his death, their mutual friendship and confidence were never interrupted. Towards the latter part of his life, Algarotti, finding the climate of Prussia too cold for his declining health, returned to Italy, where he lived first in his own house near Florence, afterwards in the house of literary friends, and lastly at Pisa, where the mildness of the air induced him to remain, as he was evidently sinking under consumption of the lungs. There he corrected the whole in a letter which was published at Leghorn: the study of the fine arts and music filled up the remainder of his time. In this calm retirement he waited for death, which came on the 3d of May, 1764, in his fifty-second year. Frederic, to whom Algarotti in his will had bequeathed a fine house and a monument at Riesberg, the seat of the Campi Nostri, or great cemetery of Pisa, where it is to be seen. It is asserted by Ugochi, in his biography of Algarotti, that Frederic forgot to pay Count Bonomo the expense of this mausoleum. Algarotti was an honorary member of numerous academies in Italy, France, and England. He was the friend and correspondent of most of the literary men and women of his time, among others, of Voltiare, Maupertuis, Metastasio, Bettinelli, Lord Chesterfield, Lady Wortley Montague, Madame du Boisge, etc. Besides the two works above mentioned he wrote Letters on Painting, in which he has described several frescoes which are now lost; he also wrote a number of essays on various subjects. His works have been swelled by the insertion of his extensive correspondence into seventeen volumes, octavo, of the Accademia de Lincei, Venice 1791. Algarotti's style is smooth, and he is possessed of a cool imagination, and not profound in any particular branch of learning.

ALGARVE, the most southern of the six provinces forming the kingdom of Portugal. The Sierra of Monchique and Caldeirao separate it from Alentejo on the north, and the Algarve of Andalusia on the south. Between these two sides it is washed by the ocean. Its extent, from the Guadiana to Cape St. Vincent on the west, is eighty-seven geographical miles in a straight line. The breadth varies from thirty to sixty. The census of 1798 gave the number of 25,523, from which, if we allow, with Antillo, five persons to each faifo, we have for that period a population of 127,615. The surface is calculated by the same writer to be 232 square leagues. These data give a proportion of 551 persons to the square league, or sixty-one to the square mile. But this population is not spread at all uniformly over the country. The mountains occupy more than two-thirds of the surface, and are but thinly inhabited, while the rich, but narrow strip along the coast, has a comparatively crowded population. Protected by its boundary of mountains from the cold winds of the north, Algarve produces the fig, olive, vine, and algarroba (ceratonia edulis), in the highest perfection; and there is little doubt that the climate would be found well suited to some of the tropical productions.

On the other hand, the extent of sea coast, amounting to more than two-thirds of its total number of inhabitants, who benefit largely by the periodical visits of the pilchard from the northern seas, and the tunny from the Mediterranean, the sea marshes near Castromar and Guardiana furnishing the requisite salt. These fisheries supply the requirements of the province. The province is divided into four comarcas, which take the names from the chief towns, Tavira, Faro, Lagos, and Silve, the three first of which lie upon the coast. At the mouth of the Guadiana, a little below Castromar, there is a small town, St. Antono de Arenilha, or Vala Real, which was built in 1774, by the orders of the Marquis de Pousal, at the expense of the richer inhabitants of the province. It was avowedly intended for the accommodation and encouragement of the fishermen who were accustomed to fish upon it, but the position was so ill-suited for the purpose, that the despotical authority of the court could not induce the fishermen to abandon it for their quarters upon the coast near Montegordo. Another object may have been to accommodate the Guadiana fishermen. The town is of little importance, and does not come within the limits of this work.

The whole province is under the ecclesiastical superintendence of a single bishop, who takes his title from it. The name Algarve is derived from the Arabic language, and signifies the west. (Millano, &c.)

ALGER, an island of North Africa, which has been arrived at by contravention of the Arabic phrase Al jor en al melahhabah, the nearest English translation of which is restoration and revolution. So short a definition is of course useless; we shall endeavor to give the first and most simple view of this science, of such a kind as may enable us to go, even in the smallest degree, into its operations.

In establishing the rules of arithmetic, it is always necessary to use general reasoning: that is, reasoning the nature of which would not be altered if other numbers had been used instead of the number used for the question. For example: If 2 acres let for 13l, how much will 17 acres let for? It is shown immediately that the number of pounds required is that obtained by multiplying 17 and 13 together, and dividing the product by 2. For it appears moreover that by the same reasoning a similar rule might be established when the numbers are different from those given above, provided the form of the question remains the same. That is, if any number of acres were given the price of an acre, and any number of acres might be found by multiplying the other number by the number of pounds the first acre cost and dividing by the number of the first-mentioned acres.

Thus we have established a general rule, and the steps by which we translate this into an algebraic expression are as follows. We invent short signs to signify that multiplication and division are to take place: we express the former by putting x between the numbers which are to be multiplied together, the latter by writing the divisor under the dividend, and drawing a line between them. The foregoing rule then stands as follows.

<table>
<thead>
<tr>
<th>Price in pounds of acre</th>
<th>Price in pounds of 2 acres</th>
<th>Price in pounds of 17 acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>13</td>
<td>2.8</td>
</tr>
</tbody>
</table>

If so far we have abbreviated by using two symbols of operation; to which we may add that we write + between two numbers which are to be added together, and — between the two numbers in the expression. For example: If a certain number of pounds is spent at a certain number of pounds, how many pounds will another number of acres cost? The answer is, as above.

<table>
<thead>
<tr>
<th>Second No. of acres</th>
<th>+</th>
<th>First No. of acres</th>
<th>x</th>
<th>Price of pounds of acre</th>
<th>=</th>
<th>Price in pounds of acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td></td>
<td>17</td>
<td></td>
<td>2</td>
<td></td>
<td>34.6</td>
</tr>
</tbody>
</table>

First No. of acres (x)
The last step is, to let the letters themselves stand for the several numbers: which will save the necessity of writing words in the result. Our final algebraical way of writing the question will then be—If $a$ acres cost $b$ pounds, how much will $c$ acres cost? The answer is

$$\frac{c \times a}{b}$$ pounds, usually written $-\frac{c}{b}$ pounds.

To take another instance, which we first write algebraically: If $a$ pounds of sugar, at $m$ pence a pound, be mixed with $b$ pounds of sugar, worth $n$ pence a pound, the worth of a pound of the mixture is

$$\frac{ma + nb}{a + b}$$ pence,

which in the usual language cannot be stated more shortly than as follows:—To find the worth of a pound of mixed sugar, knowing how much of each sort was in the mixture, and how much each was worth per pound, multiply the number of pounds of each sort by the number of pence which a pound of it costs, add the products together, and divide by the whole number of pounds in the mixture.

This will be sufficient to give the reader an idea of the notation of algebra, and of the very great abbreviation which it introduces into the details of processes. For further explanations, see Addition, &c., Positive, Negative, Equality, Exponent, Index, Power, Root, and the articles Notation.

We have said nothing of the reasoning of algebra, because it differs in no respect from that of arithmetic, or any other science, at least in the elementary part. It proceeds upon such fundamental and self-evident principles as the following,—that two equal numbers remain equal when the same number has been added to or subtracted from them, or when they have been both multiplied or both divided by the same number—that no number is altered by the addition of any number followed by the subtraction of the same, or by being multiplied or divided by the number, if the product be afterwards divided by the same number; and so on. To take a very simple case, suppose we ask, What number is that, which multiplied by 3 and the product increased by 6, gives 39? Without knowing the number, we can see that if three times the number, together with 6, gives 39, three times the number must be 24, or the number required must be the third part of 24, or 8. The algebraical method of expressing this is as follows, where = means that the numbers between which it is placed are the same.

Let $x$ stand for the number; then by the question

$$3x + 6 = 39$$

Therefore $5x = 30 - 6 = 24$

or $x = 24 / 5 = 38$

We give the preceding, not as a specimen of the advantages of algebra, but of its language only, for we have purposely expressed it in such a manner as needs no science, in order to make the method of expression more evident. [See Axiom, Equation, Problem.]

The operations of algebra are to be considered in a very different light from those of arithmetic. In the latter science, absolute numbers are given, and an absolute number is sought: in the former, it is rather the nature of the question which is given, and it is required to find, not so much the answer to any particular case, as a general method of solving any case whatever. The symbols used are not numbers, but only signs of them, that is letters, or marks which may stand for any number we please, provided that it keeps the same meaning throughout the question. Hence in what are called addition, multiplication, &c., of algebraical quantities, we do not ask, 'What number does this multiplication give,' but 'What are operations are equivalent to, and, if we please, may supply the place of, this multiplication?' For example, suppose it occurs in a question that one number is to be added to, as well as subtracted from, another, and that the two results are to be multiplied together. Let $a$ and $b$ stand for the two numbers, of which let $a$ be the greater. So long as we use general symbols, that is, so long as we do not assign any particular numbers, which $a$ and $b$ are to signify, we cannot perform the above operations, because the reasons of the symbols are so much mentioned: for example, $a + b$ stands for the sum of $a$ and $b$, $a - b$ for the difference, and $(a + b) \times (a - b)$ for the product of this sum and difference. So far we need nothing more to tell us what to do, as soon as $a$ and $b$ shall have their values assigned to them: for instance, if $a$ be 7, and $b$ be 3, $a + b$ is 10, $a - b$ is 4, and the above product is $10 \times 4$, or 40. But in the present case, we see in the above a sort of double operation: there is inside each pair of brackets something to be done, while the results of the brackets themselves are connected by a further process. It is asked then, what simple processes will supply the place of the proceeding, so that what is done in one of the brackets may be at once known for what is done in the other? The answer to this is obtained by the process of algebraic multiplication, and proves to be $a \times b$, or $b$ multiplied by itself, and the result subtracted from a multiple of $a$ multiplied by itself. In this case, for example, we have $3 \times 3$, or 9 — 9, or 9, as before. For details of various operations, see the general heads already quoted, and Binomial Theorem, Development, Series.

The first treatise on algebra of which we can fix the date within two centuries is that of Diophantus, an Alexandrian Greek, who lived certainly before the middle of the fourth century after Christ, and perhaps so early as the middle of the second. It is very unlike a modern treatise on algebra, being entirely descriptive of the general symbols, and consisting altogether of a species of problems which have since received the name of Diophantine, in which it is required to solve certain questions, the answers to which shall be whole numbers only. It is so like the Hindoo algebra in character, that it is impossible to say that the one is connected with the other. But the Hindoo algebra is of a much higher cast than that of Diophantus, we are obliged to suppose, either that Diophantus obtained from the East a part of their knowledge, or that the Hindoos, setting out from the Greek algebra only, were able to improve on it and make it much more general after the fifth century. As the Hindoo algebra has been very much extended by some, and more than proportionally cried down by others, we quote from Delambre, who is distinguished among the latter. The Hindoos had algebra of the first and second degrees; their knowledge was to solve indeterminate problems; and they made these acquisitions themselves; they are also the authors of the system of algebra now universally received by us.—Histoire de L'Astronomie Ancienne, vol. ii. p. 156. To these we might add many minor points, and also that, in the solution of indeterminate equations of the second degree, they had made as much progress as ever was made in Europe before the middle of the eighteenth century. We must refer those readers who are particularly interested upon this subject to the notes of Mr. Colebrook's translation of the Bija Gani, and to the history of algebra in the second volume of Dr. Hutton's Mathematical Tracts.

The Persians and Arabs confessedly derived their knowledge of the subject from the Hindoos. We do not, however, find that they proceeded as far as their masters: for the Arabic treatises, so far as we know, contain only the solution of equations of the first and second degree, and their application to various arithmetical questions, excluding all mention of indeterminate equations.

It was by means of the treatise of Moammed Ben Musa, who lived in the time of the Caliph Al Mamun, that the science was introduced into Europe. A complete and able translation of this work, by Dr. Rosen, with the original Arabic, was published in 1831, by the Oriental Translation Fund.

Thus much of the science was introduced into Europe, or rather into Italy only, at the beginning of the thirteenth century, by Leonardo Bonaccorso, and works of the same stamp made their appearance in Italy, without receiving any material improvement, till the middle of the sixteenth century, when it was introduced into Germany, France, and England, nearly about the same time by Stifelius, Peletarius, and Robert Recorde, respectivel
general. Hence the simple word 'thing,' or any abbreviation of it, was sufficient for their purpose.

While algebra was being introduced into the various countries of Europe, the Italians began to make the first steps towards its improvement. The solution of an equation of the third degree was discovered by Cardan and Tartaglia; that of the fourth by Ferrari; while various other discoveries were made by Bombelli and Maurolico. We must not forget the numerous works of various mathematicians. Vieta, a Frenchman, who died in 1560, made the grand improvement of using letters to stand for known as well as unknown quantities, and with the additional power derived from this improvement, laid the first substantial foundation of the theory of equations. In England, Harriot, who died in 1621, carried on and extended the discoveries of Vieta; and from the time of the two latter we must date the modern form of the science.

Our limits will not allow us to name the crowd of discoverers who have extended this branch of pure mathematics since the time of Vieta. We must refer to the work of Hutton already cited, to Bonnycastle's translation of Bosse's Histoire des Mathématiques, or to the original work itself; to the preface of the mathematical part of the French Encyclopædia; or to the histories of Montucla and Cossali. The first and second are the most likely to fall in the way of the English reader.

The only necessary preliminary to the study of algebra is a knowledge of the four rules of arithmetic, and of common and decimal fractions. Without so much it is impossible to read any work with profit; and in the want of it we must look for the reason why the science appears repulsively dry to most persons. On this subject, we refer the student to remarks in page 36 of the treatise on the Study of Mathematics published by the Society.

ALGEBRAIC. An expression is said to be algebraic, as distinguished from transcendental, when its number of terms is finite, and when each term contains only addition, subtraction, multiplication, division, and, in extraction of roots, the exponents of which are given. Thus all infinite series, as well as expressions containing

$$\log x, \alpha, \sin x, \cos \alpha, \csc, \ldots,$$

though used in algebra, in the widest sense of the word, are improperly said to be algebraic but transcendental. Similarly, a curve is said to be algebraic when its equation (see Curve) contains no transcendental quantities.

ALGEBRAIC GEOMETRY. A name given to the application of algebra to the solution of geometrical problems. For a principal points of interest connected with it, see Abscissa, Ordinate, Co-ordinates, Curve, Curvature, Equation, Tangent.

ALGECIRAS, a maritime city of Spain, on the western side of the Gulf of Cadiz, and between seventy and eighty miles across, but the distance by land from the fortress is seventeen miles. It contains an aqueduct, a dock-yard, and a citadel nearly in ruins. One of the most important articles of commerce is the coal found in the neighbouring mountains; and it has been found that several Roman inscriptions and other antiquities. Population 9900. 36° 8' N. lat., 5° 26' W. long. Al-Geciras is an Arabic name, and signifies the island.

ALGECIRAS, or ALJIZIREH, ' the Island,' is the Arabic name of the ancient Menopotamia.

ALGERO or ALGERI, a town on the west coast of the island of Sardinia, in 40° 28' north lat. and 5° 21' east long., about fifteen miles south of Sassari.

This town was founded at the beginning of the twelfth century, and, in 1353, surrendered by the Aragonese. The citizens very soon revolted and overcame their conquerors, but were reduced to obedience in 1355, when the Sardinian and Genoese inhabitants were expelled by the Spaniards, and populated with Genoese. Alghero was made a bishop's see in 1503, and five years afterwards received the title of 'most faithful.'

The town stands on the shore, and is built in the form of a parallelogram, on a low rocky point, jutting out from a sandy beach. It is surrounded by stout walls, flanked with bastions and towers. The streets are narrow, but well paved and clean. There are two entrances through gates, one at the mole landing place on the north, and the other at the ravine in the land front.

Alghero contains twelve churches and convents, besides a spacious cathedral. The bishop is suffragan to the bishop of Sassari. The town also contains several public schools, in which are carried through a course of philosophical instruction. There are some fountains of pure water outside the town, but within, the inhabitants obtain their supply of this most necessary article by means of cisterns.

The country round is well cultivated and has a pleasing appearance. It produces abundance of wine of good quality as well as butter, cheese, vegetables, and fruits. Tobacco has of late years become a profitable object of cultivation. The exports from the town consist of wine, tobacco, wool, skins, rugs, anchovies, coral, and bones, which latter article is exported so much as to supply the expenses of the town. In England, the inhabitants use animal charcoal in large quantities. The coral obtained at this part of the coast is the most highly esteemed of any in the Mediterranean sea for its quality.

The town is surrounded by a line of forts, formed on the north by the south point of Cape Caccia, and on the south by Cape Margarin. The anchorage within is good. The town contains 7600 inhabitants. [Smyth's Sketch of the present State of Sardinia; Malham's Naval Gazetteer.]

ALGERS, the Regency of, one of the Barbary States, is bounded on the east by the Regency of Tunis, by the Empire of Morocco on the west, the great desert of Sahara on the south, and by the Mediterranean sea on the north. Its greatest length from the river Zayne on the Tunis frontier, to the island of Cagliari on the western side of the mountains of Tram, 40 miles east of the Mullowish River, is about 500 miles; its breadth cannot be stated with precision, as the confines between its dependencies south of the great Atlas chain, and the roving inhabitants of the coast being a constant source of trouble. The territory of Algiers extends at least as far south as the Western River, about 200 miles' distance in a direct line from the capital. Reckoned from other points the breadth is much less. The territories of the regency are divided into several administrative divisions or cantons, and the title of command, or Pert, of Algiers, the city, is the capital.

The last three provinces are each ruled by a Bey, who was appointed and dependent upon the Bey of Algiers, till the latter French conquest of the capital. Many tribes, however, live scattered about the country, who either have always refused to acknowledge the successive rulers of the coast and capital, or whose subjection is merely nominal, and confined to the payment of an annual tribute. The last Almohad conqueror of the country is in existence, but surrounded by a vast number of the population of the whole country, but judging by approximation, it cannot be less than 2,000,000.

The chain of the Atlas runs through the whole length of the kingdom, about seven or eight hundred miles, and intervening valleys, occupy the greater part of its surface. A central ridge, or succession of ridges, marks the boundary between the Tel or country fit for tillage, and the Sahara, and divides the waters that run into the Mediterranean Sea from those that enter the Atlantic. This is a great fault, which separates the marshy lakes of the interior, the Sbott and the Mergigg.

This ridge begins with the mountains south of the town of Tlemcen on the borders of Morocco, then runs in a north-east direction to Mount Wannashrees, the Mons Zalis of Polены, a huge rugged mountain range covered with snow, and one of the most noted landmarks of the country south-west of Algiers. It is situated in the eastern part of the province of Mascara, about sixty-four miles south of Cape Tennes. To the eastward of the Wannashrees, the plains of Titteri and Témisc are high and level, the last containing the chief to the territory of Tunis east of the Mejerdah River, between 35° and 36° latitude. Another and a lower
ridge, or continuation of ridges, known to geographers by the name of Little or Maritime Atlas, rises nearer the coast from the mouth of the river Shellif, whose bed divides it from the central chain and runs between its northern bank and the sea, forms the heights called Summata, Teneah, and Margrouah, which divide the plain of Metidia, in the immediate district of Algiers, from the province of Titteri, and thence, after connecting itself with the higher chain of the Juggera, detaches itself again and runs directly east through the northern part of the province of Costantina, forming the summits called Sagwe and Artyah, and thence runs into Tunisia towards Bizerta. Numerous projections from this chain run into the sea, and form the abrupt promontories of Cape Grougoun, Cape Cagbone, Cape Jiljil, Cape Bourargon, Cape Iron or Ras Haded, Cape Rosso, &c. The height of the little Atlas to the south of the city of Algiers, near the town of Medehay, is from 1000 to 1500 feet. Besides these two divisions of the chain, there is a small ridge used for the sake of the mountains, and between the parallels of 34° and 35°, and the Mounts of the Lowaate farther to the south-west, in which the Wad-al-jedeel has its source, are in the country called by the Moors Belod-el-jerde, or Land of the Palm, but which the ancient authors called the more general name of Sabaqa, which can hardly be said to be subject to Algiers. This was the country of the Gontuli, which Strabo calls "a Mountainous Land."

The principal mountain of Algiers is the Shellif, which has its source in the borders of the Sahara, south of the Wannasheen Mountains; flows N.E. into Titteri, and after receiving the Midroe, which comes from the southernmost Atlas, forms the Titteri Gawle or Lake, and then runs north until it meets the western ridge of the Atlas, and between its eastern and western flanks to the north, where it then turns abruptly westward through the province of Mescara, and after a course of nearly 300 miles enters the sea below Cape ltry, or Jebel Dis. During the rainy season it overflows a great tract of country, so as to inundate the rapids of the river, and thus it runs from west to east for nearly 200 miles, and after watering and fertilizing the country called Zaab, and receiving a number of minor streams from the central Atlas, loses itself in the Melgigg, a marsh on the borders of the desert. The population of Turks, Ouars, and Kasba, is small, and stands on the borders of Costantina called the "Shott. It is a large plain or valley between two chains of mountains, which, according to the seasons of the year, is either covered with salt or over-flowed with water. Several parts of the Shott consist of a light soil, but there are others and unwatered parts, which are covered with the adjacent rivers, forms quicksands, to the great danger of the unwary traveller." (Shaw's Travels in Barbary.)

Several small streams from the north, and a considerable one from the south, called Mallah or Shayer, which has its source in the Mount Zecker, and is said to be salt, lose themselves in the Shott. The climate of the country south of the Atlas is generally healthy and temperate, but when the Khamsin or south-wind blows, the thermometer is often raised to 100°. This wind is dry, and although depressing, is not otherwise unhealthy. It carries along with it a quantity of extremely fine sand, which penetrates into the houses and through every crevice of the walls, so that the breathing winds are from the east, and the rest of the year they are mostly from the west. The heavy rains are in November and December, the months of January and February are generally very fine. In April the clouds are clothed in their brightest verdure. From July to October the surface of the country is burnt by the rays of the sun; the oleander alone remains green. Near the coast, however, the sea-breeze cools the air during the day, and heavy dews fall at night. The atmosphere is very pure and bright, and it is seen and unvisited by persons of weak sight. Ophthalmia is a common disease, as well as cutaneous disorders, and even elephantiasis, owing principally to the want of cleanliness in the country people. No bad fevers or other endemic diseases are prevalent.

The fertility of which this country was renowned in ancient times still continues; in the valleys that are watered by streams, vegetation is extremely luxuriant. The mould is of a very dark colour; in some places it is reddish, and impregnated with nitre or salt, but generally with a black earth, which is found in Tunis or Morocco. The country is also more bilious, the springs more frequent, and the dews more abundant, than in the adjoining states. The hills are covered with fruit trees of every kind, and the fruit is generally exquisite. A species of the strawberry is found cheaper than in France. The orange, a species of it called Solemyan rises to a great height, and gives more sugar than any other species known. The indigofera glauca thrives also. The grain sown is wheat, barley, Indian corn, millet, doura, and rice. The coves of the Bona, and the Jiljili, the meadows of the Kid, are generally and generally lost it altogether with the loss of the calf. Algiers and Morocco are the original countries of the Merino sheep. Goats are very numerous, and supply the people with milk. Horses are proverbially excellent; the asses are uncommonly fine, and much used among the people, and are much praised by the Arabs. The camel is considered superior to that of Asia, and good cheesse is made of its milk. The interior of the country abounds with wild boars, porcupines, skunks, pumas, and all sorts of game. Along the coast of the Atlas are panthers and leopards, but no tigers; the lion still maintains the character of its Numidian progenitor for superior strength, fierceness, and also, at least according to Arab reports, a kind of benevolence and generosity. In the desert of Angad on the borders of Morocco are large flocks of ostriches. The country is infested by various venomous reptiles and insects, especially scorpions of large size, whose bite is dangerous. There are also crocodiles, which are caugt occasionally in the rivers of the country, and often destroy the harvest of whole districts in a few days; the tribes south of the Atlas eat them. The races that inhabit the territory of Algiers may be reckoned seven in number: Berbers or Kabyles, Arabs, Turks, Caucasians, Jews, Christians, and the Arby. One half of the whole population consists of Kabyles, the aborigines of the land: although somewhat mixed with the various nations that have successively conquered the country, they still retain much of their Numidian character of manners and habits. The Kabyles are generally fair and white, and they themselves are unacquainted with it; they call themselves Mazigh or Amazigh, which name was known to the old geographers and historians. Ammianus Marcellinus calls the island on which the light-house of Algiers is built, remia Marucanum; the people of most Arabic countries call the town of Algiers Jezira Beni Mazighahman, the island of the Sons of Mazigh. The Mazigh race is believed to have extended at one time all over North Africa, from the borders of Egypt to some parts of Spain. It is the common language of which the Showiah and the Shulah of the Berbers are dialects, as well as the language of the Guanche of the Canary Islands, and probably also the language spoken by the Turricks of the Great Desert. The Kabyles are the followers of a Zoroastrian or Pagan clan, but they often give this appellation indifferently to the tribes of the interior, whether Berbers or Arabs, although two very distinct people, because both are living in clans. The Kabyles inhabit the whole of the mountainous country, both along the great and the little Algerine coast, and the Arabs occupy the intermediate plains. The clans of the former assume before their names the Arabic prefix Beni, as Beni-Morab, whilst many of the Arab tribes scattered about the country of Algiers use that of Welde, which is the same, such as Welde-Hleta, Welde-Heta, and Welde-Heta. The Kabyles live in villages called daashkra.
consisting chiefly of huts which they call gharb, made of mud and bore stones, covered with branches of the palm-tree, and thatched with turf or straw. The Arabs generally live under tents, in camps, which are called douars. The Kabyles who live on the little Atlas and near the coast understand, but the tribes separated from the interior know no language but their own. More advanced in agriculture than the Arabs or Moors, they understand the method of irrigation: ‘we have seen,’ says Captain Rozet, ‘in the neighbourhood of Bebala, orchards and fields as neatly arranged and as carefully cultivated as those of France. The Kabyles work the mines of their mountains, and extract iron, copper, and lead; it is said, even gold and silver: their arms are frequently decorated with silver plates very well wrought, and they make a spurious coin of silver. They hunt with hounds, plough with many coarse mules, which they sell to the Arabs and Moors, know how to temper steel, and make also sabres and knives of a tolerable quality. They manufacture gun-powder for their own use, and much better than that which is made at Algiers, but they never sell any of it. The Kabyles are very eager after European guns; they offered me as much as the value of two hundred francs for mine. Their women weave common woolen and linen stuffs for the use of the family. They do not bake bread, but they crush the greatest part of their grains in stones, make a kind of flat bread, and bake it under the ashes, or fry it with oil. The oil is their chief produce, but the oil they make is very sour, probably because they allow the fruit to ferment before they press it. They carry great quantities of it in skins to the Algers.’ They make their bread of sorghum, which is sold: The Kabyles grow pears, apples, apricots, peaches, and grapes, in all the chain of the little Atlas. They gather a great quantity of honey and wax, which they bring to Algiers; with poultry, dates from the other side of the Atlas, and other products of the country. The Kabyles, who live on the borders of the plain, or in the great valleys, have cattle, and flocks of sheep and goats. They have no camels, this animal not being suited to mountainous regions, but they have excellent asses and mules which they never sell. Their plows are middle-sized, but strong and well made, and even elegant in their forms. Their complexion is generally dark, but seldom swarthly. Their heads are more round, and their features shorter, than those of the Arabs; they have not the lime aquiline noses so common among the latter; the expression of their countenances is intelligent, but somewhat sinister and ferocious. The furniture of their huts is very simple: a few sheep-skins or mats spread on the ground or on a wooden platform in a corner, serve them as beds; their lykes, which resemble in shape the primitive couches of the shepherds, and their stools, which constitute their dress by day, serve them as blankets at night: a few basins, earthen dishes, pots, and jars, for their milk and honey: they keep their grain and fruit in large vats made of clay baked in the sun, or bury them in the earth under ground. In the interior of their huts, Ben-Sala found a Koran, which the inhabitants had left on running away. The women wear the lyke like the men, with a close short-sleeved tumie underneath; they do not veil their faces like those of the Arabs and Moors: they let their hair fall on their shoulders: they were large earrings, rings, paint their arms and legs in various devices, and their nails and the palms of their hands with henné or vegetable red. The short account of the Berbers of Morocco, and their appearance and language, given by Lieutenant Washburn in the first volume of the Journal of the Royal Geographical Society of London, agrees with most of the above particulars of the Kabyles of Algiers, and serves to substantiate the account. They are all of a kindred race. Each tribe of the Kabyles has a sheik or chief, like those of the Arabs: there are also families of rank among them. Each tribe has its Marabout, who is a sort of oracle: these men are considered holy, and are consulted in all cases of necessity. They keep their men in arms and exercise great influence over them. The Kabyles, especially those remote from Algiers, have never submitted to either Arabs or Turks: they pay no regular tribute, but the Dev known to send parties of janizaries to seize their cattle, or demand presents from families, for whom he made them pay a heavy ransom. The Kabyles in their mountains are inhospitable, and different in this respect from the Arabs: they are capricious and faultless, like their Numidian ancestors, very cruel to their enemies, and seem to delight in tormenting their unfortunate prisoners, whom even the women have been known to join in torturing. They are Mohammedans, and practise circumcision, but never frequent the mosques of the Moors. Those who live at or come to Algiers have adopted the manners of the Moors, and sell their religion scenes, however, very superficial, and mixed with superstitions practices.

The Arabs who encamp in the plains are known also by the name of Bedouines, and indeed the latter appellation is often given indiscriminately to the Kabyles also, by the people of the towns on the coast. These Arabs, are the remnant of the various great immigrations of their countrymen from the east, and have kept themselves distinct from the other races around them. They resemble in many respects the Moors; they speak the same language, and dress in the same manner, and resort to the same mosques; they boast. They often move their camps in quest of water, or fresh pasture for their flocks. They speak the Koranic eastern Arabic with more or less purity; are strictly devout of the Koran, are governed by their elders of sheik, and are all tributary to the bey of their respective province. When dissatisfied with the Turks, they often move their camp in the night, and withdraw with their rattles another state, or plunge into the Desert. Not many years since, the wide plains of Bona and Constantine were covered with the tents, and the sand spread across the frontier into the state of Tunis. Some of the Arabs are cultivators of the soil, and have villages in the neighbourhood of the towns, but they are very careless in their agriculture, and will, when dissatisfied, abandon their hut and return to another district. The Arabs are strongly of the conjugal duties, and differ in this from the Kabyles, whom the marriage bond is held very loose. In their predatory habits, their frugal diet, their fondness for wine, and their story-tellers, the Arabs resemble the rest of the Moorish nation. They are generally spare, swarth, and ill-favoured.

The name of Moors has been used in Europe in a general sense, meaning the African Arabs; but the present Moors of Barbary become a people distinct from the real Moors, or the Arabians, who live in the interior of the country. The Moors constitute the bulk of the population of the towns and districts immediately around them: they are a very mixed race, sprung from the various nations who have successively occupied the country during their history, and who were, at one time or another, under the sway of others. Arab, Berber, and Moorish, were the three terms by which they were known, in general, that their girls may attain this delicious. The Moors are further advanced in civilization than the Arabs or the Kabyles; they are used to the comforts of towns, many of them are wealthy, and fond of luxury and pleasures. In their moral character the Moors are very low, however, they have all the vices of the Arabs without their virtues, and the fierce, brutal passions of the Turks without their bravery. They are lazy, sullen, vindictive, and cruel. Lavishers and unnatural lust are common vices among them. The Moors are the Turks' haters, and continue in the same state as before the military despotism of the Ottomans. The Moors are pusillanimous, servile, and treacherous. They are not deficient in intelligence; all the boys frequent the schools where they learn reading, writing, and arithmetic at a trifling cost; elementary instruction having been established at Algiers for ages past on a method somewhat resembling the Lancasterian. The Moors speak the Moghrein or western dialect of the Arabian language.

The Turks, who for more than three centuries have been the ruling race in the Moghreb, have been so much abased by their wars that they seldom numbered thousands of troops. They were consented to the Turks, and are still a numerous people, but without influence, and without exception; they have not the vices of the Turks without their virtues, and the fierce, brutal passions of the Turks without their bravery. They are lazy, sullen, vindictive, and cruel. Lavishers and unnatural lust are common vices among them. The Moors are the Turks' haters, and continue in the same state as before the military despotism of the Ottomans. The Moors are pusillanimous, servile, and treacherous. They are not deficient in intelligence; all the boys frequent the schools where they learn reading, writing, and arithmetic at a trifling cost; elementary instruction having been established at Algiers for ages past on a method somewhat resembling the Lancasterian. The Moors speak the Moghrein or western dialect of the Arabian language.
fierce Anzauts from Albania, came to fill up the vacancies. Christian renegades were occasionally admitted among them, but they were well watched. The main body of the Turks was stationed at Algiers, but detachments were sent as garrisons to the various towns of the provinces. In case of attack from other powers, the Moors, Arabs, and Kabyles served as auxiliaries under the orders of the Turks. The janissaries received a safe conduct which exempted them from subject to the common tribunals for any offence, but were tried before their own court, and punished privately by their Agha. As the Turks had no women of their nation, they married either Moorish women or Christian slaves; the offspring of such marriages were afterwards educated and trained as their share of the population of Algiers and the other towns. Their number is reckoned by Mr. Gräberg, the Swedish consul, at 17,000 in the city of Algiers alone. Some of the Kooloolls entered the military, others were employed in other offices, and a considerable proportion of the population of Algiers and the other towns, their property having been acquired, especially by holding shares in the privateers, for this was a profitable speculation of the Turks. They are generally good-looking, and have clear complexion like their Turkish parent and all the above races, being Mohammedans, are polygamists. The Jews came in great numbers to Algiers on being driven away out of Spain and Portugal, at the same time as the emigration of the Moors. There were 4,000 Jews and 50,000, living in the principal towns, chiefly on the coast. They are, as every where else, brokers, agents, jobbers, retailers, hawkers, and some of them are merchants and bankers. Depised and ill-used by the Turks, they were still necessary to them in all money transactions, in all maritime speculations, and in their financial operations. They exercised by this means considerable influence on the members of the government. Many of them grew rich, though in continual dread of losing both their property and their lives. The negroes are slaves brought from Soudan by the caravans or kidnapped by the Bedowens of the Desert. Between 4,000 and 5,000 were brought every year into the territories of Algiers, one half of whom were taken to the capital, where they were ensnared in very large prospects, partly to wealthy Moors or Turks, and partly to speculators who exported them by sea to the Levant. The blacks in the service of private individuals at Algiers are generally treated with considerable mildness; they are, in fact, numerous private families. The territory of Algiers includes the several divisions of ancient Numidia, both of the Massyli and of the Massesely, the kingdom of Massinissa and his rival Syphax, and afterwards of Jugurtha. It also includes part of the Mauritanian province, and the lands of the Moors, Arabs, and Kabyles, who invaded North Africa at the beginning of the eighth century, and established Islamism. Ferdinand the Catholic, after driving the Moors from Spain, sent an expedition to Africa under Cardinal Ximenes and Don Pedro Navarro, which took possession, in 1509, of Oran and Marsa el Kebir, and of Bujesiah in the following year. They also took possession of the island before Algiers, and built a fort there. Selim Eutemi, called their leader, was afterwards called O'Reilly, and had made himself famous by his exploits in the Levant seas. Arrived at Algiers, in 1516, and after capturing the Spanish in possession of the town, he became the acknowledged chief of the country. Having rid himself of Selim Eutemi by violence, he remained master of Algiers, where he ruled tyrannically. He afterwards marched westward and took Tlemcen, but being attacked both by the Spaniards from Oran and by the Moors who revolted against him on account of his cruelties and exactions, he put himself in march with his Turks to regain Algiers, but being overtaken and surrounded near the river Malah, not far from Oran, he died fighting, in 1516. Horush, when cruizing in these parts, was called familiarly by his crew, Bahorush, or 'Father Horush,' which the European sailors corrupted into Barbosa. His brother, Kair-ed-din, to whom he had left his ships, succeeded him in the dominion of Algiers, and to secure his authority, put himself, in 1519, under the allegiance of the Sultan of the Ottomans, Selim I., who appointed him Pacha and Regent of Algiers, and sent him a body of janissaries. Kair-ed-din took from the Spaniards the island before Algiers, which he joined by a pier to the main land in 1530, thus making a town and fortified it. He made a treaty with the Genoese, by which he swept the Mediterranean, striking terror among the Christian sailors. Solymans I. called him to Constantinople, and raised him to the rank of Capudan Pacha or Great Admiral. Hassan, a Shirdinian renegade, who succeeded him, continued the same organization, made incursions on the coast of Spain and made piracy in the Atlantic. They seized the vessels of all nations who did not agree to pay them a tribute. Admiral Blake first taught the Algerines to receive the flag as a combatant war, and, after the Treaty of Aix-la-Chapelle, 1589, to be bombarded by Admiral Duquesne, which led to a peace in the following year between France and Algiers. The Spaniards, under General O'Reilly, landed near Algiers in 1775, but were obliged to re-embark in haste and with loss. The Algerines, after plundering the Spaniards, and selling them, by paying a sum of money, obtained respect for their flag. So did likewise the Danes and Swedes. The Austrian and Russian flags were protected by the special wishes of the latter. The consequence of treaties with the Algerines was the greater security from the piracies of the Algerines and the other Barbary powers, who not only seized their vessels and cargoes, but made slaves of all on board, who were either sold in the slave market, or sent, chained, to the public works. The precise epoch of the beginning of this organization, and we may almost call it legalized, system of piracy, for it was recognized by the various treaties which the Christian powers consecrated to sign, appears to date from the end of the sixteenth century, when then the Spanish, who had conquered Granada and Andalusia, settled on different points of the opposite coast of Barbary, and thence retailed upon their Christian enemies by seizing their vessels. The establishment of the Knights of St. John in the Island of Malta, and the great power of Zeytouna, or the principal city of Tunis, was attended by the possession of the Algerine corsairs. It was a common saying, that Algiers without privates must starve. In 1815 the Algerine power was checked in its lawless exactions by the ships of the United States, which took an Algerine frigate and brig: the day was also commented, and the bey of the great province of Constantine has refused to submit. The latter has assumed the title of pacha, and seems to consider himself independent. One great advan-
tago, however, has resulted from this expedition; the Mediterranean sea has become free from Algerian privateers which have been its scourge for more than three centuries.

The title of day, which in Turkish means 'Uncle', was not lately used at Algiers for the foreign was styled pass and offended; the Moors called him Baba, 'Father.' He was elected by the basish or officers of the militia, assembled in dewan, or rather by a faction of them, which also frequently shortened his reign by a violent death. Few sovereigns of Algiers for the last two centuries have been of natural birth. Any common janissary might aspire to the supreme rank.

The sultan formerly used to appoint the pasha of Algiers, who was at the same time commander of the forces, and to send men and money for the service of the garrison, but the pashas obtained the right of choosing their own commander, and paying themselves out of the revenue of the regency: still the sultan continued to send a pasha as civil governor until the beginning of the last century, when Bab Ali Day or chief of the Janissaries seized the petty states of Constantine, and sent him back to Constantinople. He sent by the same vessel envoy with rich presents to the viceroy and other officers of the Porto, representing to them that the expelled pasha had treacherous views, and that in future the chief of the Janissaries would not fulfill his part in the service, nor of course with the approbation of his height. The affair was winked at by the Porto, and from that time the janissaries and the day of their choice were absolute masters at Algiers.

The principal towns of the regency of Algiers are, next to the capital, Costantina, the ancient Cirta, with a population of about 30,000 inhabitants, [see Costantina.], Bona, near the site of Hippo, the sea of St. Augustine, with a population of 4000 inhabitants, and a capacious harbour nearly elbow.)

To the eastward of Bona were La Cala, and Bastion de France, two old French settlements which were destroyed in 1827. This coast is frequented by the coral-fishing boats from France and Italy. Westward of Bona is Jifel or Julial, a harbour and a fort. The Kabyles, of this mountainous coast are the most ferocious of the whole country, and merciless plunderers of wrecks. Bujeiah, on the gulf of the same name, once a place of considerable importance, now reduced to 5000 inhabitants, with a good harbour; canals have carried trade in oil out of its territory. In the interior of the vast province of Costantina are many remains of cities once famous, such as Setecif, once the capital of the Mauritius Sitifensis; Tifoss once Thbevis, in a very fertile plain, which extends towards the Medenina, as well as towards the coast; Tassil, an old frontier town towards Tunis, with an Algerian garrison. In the same neighbourhood is Etilah, also a frontier town, built on a mountain almost inaccessible, a place of asylum for the outlaws of the two states, who countenance one another, and makes a favourite asylum for outlaws, in the same part of the province. Dr. Shaw supposes to be the ancient Zama, he having found no other vestiges answering to this place. The most remarkable antiquities next to those of Cirta are found at Tessaouite, in a valley of the Djed Alia, which was reduced to a fort by the French, the province of Costantina consisting of many chief towns, which appear to belong to the ancient Lambessa: the ruins are nearly three leagues in circumference; among the rest are magnificent remains of the city gates, several Roman inscriptions, parts of an amphitheatre and of a triumphal arch, and a very large temple. A beautiful and elegant mausoleum built in the shape of a dome supported by Corinthian pillars, which the Arabs call 'the Cupola of the Bride.' The Jibbel Auera, Mon Aurasus, is a large group of mountains with fertile valleys interwoven, embracing an area of nearly 100 miles in circumference, and inhabited by a number of clans of Kabyles, whom neither Arabs nor Turks have ever subjugated. Some of these tribes are much fairer than the generality of the inhabitants of the country in their hair of which has led Dr. Shaw and others to suppose them to be a branch of the Vandal. The whole province of Costantina is of a high interest, and full of ancient remains, but little explored by travellers: it is decidedly the finest, as it is the largest and most important division of the regency. In the province of Titter is the town of Medeeyah, the residence of the bey, in a fertile district in the midst of the little Atlas; it reckoned above 10,000 inhabitants, but suffered severely in the several conflicts in 1830-31 between the French and the Arabs and Kabyles. Belida, situated between Medeyah and Algiers, on the borders of the fine plain called Metidja, with a population of 9000 inhabitants, has been equally unfortunate. Coelas is twelve miles from Algiers near the sea, a thriving village. About fifteen miles from Algiers is the nearest spring of Meras, the Agua calidae Colonia. In the western province of Mascara is Shersche at Jol, the residence of Juba, afterwards called Julia Cesarea, a sea-port town most strongly and pleasantly situated; it has repeatedly suffered from earthquakes, but has yet some trade and manufactures of steel and pottery. A large tract in its neighbourhood is strewed with remains of its former magnificence, pillars, mosaic pavements, ruins of a large aqueduct, the Musitgannim, a town of between 5000 and 6000 inhabitants, twelve miles south of the ancient town on the well-cultivated district: Arcew is the ancient Arsures, near which are valuable salt-pits which might be made more productive. Oran, or more properly Warran, is a coast town of from 10,000 to 12,000 inhabitants, and the common residence of some of the Spaniards, who carry on trade in oil. The Spaniards were masters of it for near three centuries until 1792, as well as of the neighbouring Marsa el kebir, the Portus Magnus of the ancients, a natural harbour, one of the best on the coast of Barbary. Further to the south near the mouth of the river Tafna, are some remains of the ancient Sige or Siegem, the metropolis of Syphax and other Mauritanian kings. About fifteen miles from it, in the interior, is the city of Tiensure, the capital of the province, built on a rising ground below the ridge of rock which forms the Atlas, in a fine and fertile country irrigated by a number of streams. The old Tiensure, once the capital of a kingdom, was much larger than the present town, but was almost wholly destroyed in 1736 by Hassan Day of Algiers. Tiensure reaches 20,000 inhabitants, or one third of the city of Constantine, the next to Algiers and Costantina.

There are manufactories of carpets and blankets, and some trade carried on with the interior. It is not far from the borders of the Sahara, which is a region in a very fine state. Mascara, the ancient Victoria, once also the capital of the western province, now much decayed, is situated about thirty miles inland from the Bay of Arciez. Fifteen miles to the N.E. of Mascara is El Callah, a small town with a fair market, and villages round it, and the population of which are busily employed in the manufacture of carpets, bournoosees, and other woolens, for which El Callah is the chief mart in the whole regency.

The territory south of the Atlas, which is included within the limits of the ancient Titteri, consists of several districts: the Zaah or ancient Gtizia, which lies south of the provinces of Costantina and Titteri, between the Atlas and the Wad Adjdeee river, and the Wad Reeg, which is south of the latter and stretches to the very edge of the desert; the last of which is the Wad Adjdeee, the town of Titteri, and a Turkish garrison from Costantina, is the principal place in the Zaah. Dates are the chief produce of the country. The Biscareens are a tribe distinct both from the Arabs and the Kabyles, although believed to be of Arab descent; the bay of the prophet Muhammad, who were sometimes called von, and often invited by the Arabs and Kabyles to their meals. Many of them come to Algiers, where they are often invited as servants and porters, and where they have an amir or consul to settle their concerns. They have been confounded by Europeans with the other Kabyles. They are Mohammedans, and are the only dialect of the Arabic. The Biscareens trade with Soudan by the way of Ghadamis. The country of the Biscareens is watered by several streams from the southern slope of the Atlas which fall into the Wad Adjdeee, the principal of which is the Wad Adjdeee, that rises in the mountains of Auress in Costantina, and flows southward until it meets the Adjdeee not far above the Meligge.

Wad Reeg is another collection of villages like those of the Zaah, but southwards. The ancient towns of Adrma and S.W. direction. The principal of which are Tuggutt, south of the Meligge, En-goush, and farther south-west, Wurglah, a populous place frequented by the caravans from Soudan, and Nadrans, on the edge of the desert. These are the extreme points south, in the mountains of Auress in Costantina, and flows southward until it meets the Adjdeee not far above the Meligge.
and more peaceful in their disposition; many of them live in Algiers, where they keep the public baths. They govern themselves as a republic, are independent of the regency, and they keep an amir at Algiers who was acknowledged by the day. They reckon it twenty days' journey from their country to Algiers. Dr. Shaw sees in them a branch of the Molanogetulli of the ancient geographers. They grow a little barley, but their chief nourishment is dates. ‘Their country,’ says Dr. Shaw, ‘is very dry, they have no fountains or rivulets, and in order to obtain water, they dig to the depth of 100 fathoms, through different layers of sand and gravel till they come to a flaky stone like slate, which is known to be immediately above the Bahr taht el erd, or the Sea below ground.’ The stone is easily broken through, and the flux of water which follows the stroke rises so suddenly and in such abundance, that the person let down for this purpose has sometimes, though raised up with the greatest quickness, been overtaken and suffocated by it.

Among the numerous works on Algiers the following deserve mention: Shaw’s Travels in Barbary, a very good topographical description of the country; Laufier de Tassy, Histoire Générale du Royaume d’Algier; Rehbinder, Nachrichten und Bemerkungen über den Algierschen Staat.

widest being only twelve feet in breadth. The population of Algiers was reckoned in 1830 at about 70,000, since which it has decreased at least one-fourth by emigration; of these, about 8000 were Jews, 1000 Christians, and the rest Mohammedans. There were thirteen great mosques with minarets and about seventy small ones besides, to private individuals. There was also a synagogue, and a chapel and hospital for the Christians; the latter was supported by the Spanish government. The Palace of the Pacha, called also the Serai, is in the lower part of the town, but the late day had his residence in the Casabah or citadel, at the highest point of the city. The other remarkable buildings of Algiers are the barracks, the light-house, the dock-yard, the principal bazaars, the mole, and the quays. The hills, which rise in the form of an amphitheatre around the city, are studded with country-houses, gardens, vineyards, and olive groves. Algiers is well supplied with water from a large reservoir, the water of which is conveyed from the country by an aqueduct, and then distributed by conduits all over the city. There are a great number of public baths, of small coffee-houses, and some wretched inns called fondoucs. The batteries which defend Algiers on the seaside are very strong, but the fortifications on the land side are weak and exposed. The castle called the Emperor’s, which is outside the walls, commands the city, but is itself commanded by the upper part of Mount Boujereah. Below the Emperor’s fort, a road leads from the Casabah along the inland skirt of Mount Boujereah to the point of Sidi Ferruch, about fourteen miles west. It was by this road that the French advanced, in June, 1830, to invest the Emperor’s fort, which, after a brisk cannonade, was abandoned by the Turks on the 4th of July. The following day Algiers surrendered to General Bourmont, on condition that persons, private property, and the religion of the country should be respected, and that the day and his Turkish militia should quit Algiers, carrying with them their personal property. The French took possession of the town, the castles, and all public property of every kind; among these were twelve ships of war, 1500 bronze cannon, and 48,000,000 of francs in gold and silver. No mention was made of the provinces, nor of the future government of the country. Algiers lies in 36° 49' N. lat., 3° 25' W. long.

ALGONQUINS, the name of a tribe of North American Indians, or, rather, a kind of generic name, under which are included numerous native tribes, which are related to one another. The principal tribe of the Algonquin nation, at present, is the Chippewa. The Algonquins, even in their present depressed state, are spread over a large tract of country, from the shores of lakes Erie and Ontario to the neighbourhood of the Esquimaux. The term Algonquin is one of the three divisions, which the early French writers made of the native tribes, the Hurons and Sioux being the others. The Algonquin language is now spoken by the Chippewas, Ottowas, Potawatomies, Sacs and Foxes, Shawnees, Kickapoos, Menomonees, Miamies, and Delawares. These languages are said to approach the Chippewa, which may be called the standard, in the order in which we have placed them.

When America was first discovered, the dialects of the Algonquin language extended from the Penobscot in Maine to the Chesapeake Bay, and from the Atlantic Ocean to Lake Superior. The tribe which is properly designated by the name of Algonquin was found on the banks of the Utawas river, which enters the St. Lawrence near Montreal, and also on the north shore of lakes Erie and Ontario.
From the specimens given in Adelung's Mithridates of the Chippewa and Algonquin tongues, it cannot be doubted that they are the same languages. In the regions that extend from the Ottawas river, in a north and west direction, to Lake Winnipeg, the Saskatchewan river, and still farther, Adelung places the Knistenaux, a widely-spread tribe, whose language, if we may judge from the specimens given, is closely allied to the two just mentioned.

But the specimens of the Knistenaux and Algonquin, and Chippewa languages, with a very copious Cree vocabulary, we have no doubt that the latter language is closely akin to all three. So vague, indeed, are the notices of Indian tribes, that it is quite possible that all the four names above used, may in a certain extent represent the same nations or parts of the same nations. The Creees are now described as occupying the country between the 50th and 57th parallels of north latitude, and the 80th and 105th of west longitude, and are in fact geographically, as well as linguistically, the most extensive of the people called by M. Adelsuu the Knistenaux, and by Charlebon the Cristinaux or Kilistinous. The meaning and origin of the word Algonquins is, we believe, unknown. (See North American Review, No. L, Adelung's Mithridates.)

ALGOA BAY, known also as Port Elizabeth, and formerly called Zwartkop's Bay, is situated in Cape Colony, South Africa, in 33° 56' south latitude, and 26° 53' east longitude. This inlet, which is about twenty miles broad from east to west, is nearly five hundred miles eastward of Cape Town, between it and the newly-settled district of Albany.

The anchorage of Algoa Bay was surveyed in 1820, by Captain Moresby, of his Majesty's ship Mares. It is a good holding ground, and for six months of the year, when the north-west winds prevail, is perfectly secure, not during the remaining months a heavy sea rolls in from the south-east. The tide rises in the bay from six to seven feet. The shore is a level sandy beach: it receives the waters of the Zondag, Zwartkop, and Kowie rivers, and has nearly twenty blue springs of water on the western side. The surrounding country forms part of the district of Uitenhagen.

Port Elizabeth was the place of embarkation for the emigrants who went from this kingdom to Cape Colony, in 1820: as many as 1620 individuals landed here in the summer of that year.

An establishment has been formed on the eastern coast of the bay for curing beef. This process can only be conducted from the beginning of May to the end of August, at which time the season is favorable, and the cattle are in good condition. It is expected that a considerable trade in this kind of provision may be carried on between the settlers and the Mauritius, as well as with vessels touching on their way from India, and executing also with the Indian Islands. It is likewise probable that a fishery may be successfully prosecuted in the bay, which is much frequented by black whales. (Report of the Commissioners of Inquiry upon the Trade of the Cape of Good Hope, by the House of Commons.)

ALGUACIL, an officer in Spanish answering to the English bailiff. The name is from the Arabic el-razil, or from the Hebrew verb gazal, which means to catch. His duty is to take into custody, and execute criminals in the court of the king at the command of the judges. In case of any quarrel or disturbance he has the power to take any person into custody, and deliver him up to the authorities. The common alguacils are appointed by the judges. The alguacil mayor is a superior officer, whose functions are the same as those of the common alguacil. He is appointed by the common council, of which he is a member. The duty of the alguacil is at present confined to the apprehension of criminals; the office of executioner being discharged by the regidores.

[See Portada, II, joy, xx, tit. ix., and Cocarabia, Teatro de la Langua Castellana.]

ALHAMA. A town in Spain, in the province of Granada. Its present name is from the Arabic article al and hamsayat, 'warm baths.' It is situated upon an eminence detached from the chain of Zafarraya, and about a mile from it are the baths, which consist of two pools. The smallest of them is called De la Reina. The water is hard, clear, and sulphureous, and has an evil taste. When the sun-light falls upon it, an accustant substance is perceived on its surface, which has the appearance of oil.

In cold weather a sort of mist rises from the water, which deposits in the pipes through which it flows a white substance resembling soap. These baths are included in a building of freestone which has nothing remarkable in its appearance. The Moors derived a great profit from these baths; some authors make it amount to 500,000 ducats.

Owing to its situation, this town is in the winter months covered with snow, and in summer scorched by a burning sun. It contains one parish, two convents of monks, and one of nuns. The population amounts to 6000 inhabitants. It is fifteen miles south-west of Granada. (See Mlanos.)

ALHAMBRA. An ancient castle and palace of the Moorish kings of Granada. It was built by Mohammed II., about the year 675 of the Hegira, or 1273 of our era. He gave it the name of Medinat Alhambra, or the Red City: according to some writers on account of being made of a kind of red clay, but according to others, from the name of the tribe of Mohammed Alhama. The Alhambra walls are built of a kind of cement of red sand and large pebbles, which being exposed to the air acquire the hardness of stone.

The exterior of the castle presents nothing very striking. The Arabs heaped up their buildings without order, reck- less of their exterior appearance, and sought only mental convenience and comfort. The Alhambra is situated on a hill, which runs out to the east of the town of Granada. It is surrounded by a strong wall, flanked by square towers, and inclosing an area of 2500 feet in length and 660 in breadth. It is said that 40,000 men could be conveniently lodged in it. The walls follow all the windings of the mountain, and are constructed according to the best rules of fortification in the middle ages: before the invention of gunpowder it must have been impenetrable. The Darro flows by the base of the hill, on the east, and west. In this limited space the kings of Granada united everything calculated to afford security in time of war, and comfort and pleasure in time of peace.

The easiest ascent is by the street of the Gombras, called from a distinguished Moorish family of that name. In coming out of the Puerta de las Granadas or "pension gate," the road is divided into three, the middle one for carriages, and the other two, which are very steep, for foot travellers. The middle road ascends between the hills of the Alhambra and Torres Bermejas, through a thick wood of lofty elms, the branches of which are interlaced so that the rays of the sun never penetrate their thick foliage. Immemorial clear rivulets glide through the forest irrigating the ground, which is covered with verdure. On our way from the alhambra we met a number of beautiful cascades. Near the summit of the hill is the fountain of Charles V., on a sort of natural terrace, from which there is a bird's-eye view of all the ascent, which amply repa-
for the fatigue. After passing this fountain the traveller comes in sight of the Alhambra gate, called Judicaria or of Judgment, because justice was administered there after the custom of the East. It is a square tower, the horseshoe arch of which rises to half the height of the tower, and is a perfect model of this kind of arch, so characteristic of Arabian architecture. Upon a stone in this tower is the following inscription in Arabic, which is thus rendered by James Murphy. 'This gate, named Babu-sh-shariit, may God prosper through it the law of Islam, even as He has established it a monument of glory, was built at the command of our Lord, the commander of the Muslims, the just sultan Abul-Hajajj, son of our Lord, the warlike sanctified (deceased) sultan Abul-Walid ebn Nasr, whose pious deeds for religion may the Almighty recompense, and whose valorous performance in the cause of the faith may He graciously accept. And it was completed in the month of the glorious birth of Muhammad, in the year 743 (1348). May Heaven constitute it a protecting bulwark, and reckon it among the lasting actions of the righteous.' We then enter the porch which winds along the barbacan, and leads to the Plaza de los Algebras, or square of the cisterns. These are two in number, the largest of which is 102 feet long and 56 wide; it is arched over, and inclosed by a wall 6 feet thick. The principal arch is 47 feet wide in the centre, and is 17 feet below the ground: in these cisterns the water deposited its sediment, and was kept cool for the use of the castle.

On the east side of this Plaza is the palace of Charles V., a beautiful specimen of the cinquecento style, by the famous architect Alonso Berregue. On the north is a very simple and unostentatious entrance to the Mesuar, or common bathing court, the first of the Moorish palaces. On entering it the visitor feels as if magically transported into one of the fairy palaces described in the Arabian Nights. The Mesuar is an oblong court 150 feet in length and 56 in width. It is paved with white marble, and the walls covered with arabesques of admirable workmanship. The inscription, Wa la ghalib illa-lia, that is, 'God alone is conqueror,' which is often repeated throughout the building, is read on the peristyles at each end of the court. In the midst of this court is a basin sufficiently large to swim in, bordered with parterres of flowers, beds of roses, and rows of orange trees. This court was designed as a common bath for servants and other dependents of the palace, and supplied with water the fountains of the other apartments.

At the lower end of the Mesuar is an archway leading to the Patio de los Leones, or lions' court, which may be considered as the type of Arabian architecture. It measures 100 feet by 60, and is paved with white marble. In the centre of it is a large basin of alabaster supported by twelve lions, not in the best taste. Over this basin a smaller one rises, from which a large body of water spouts into the air, and falling from one basin into the other is sent forth through the mouth of the lions. This court is surrounded by a gallery supported by a great number of slender and elegant columns, 9 feet high, and 81 inches in diameter. These columns are very irregularly placed, sometimes they are single, and sometimes in groups of two or three. The walls, up to the height of 15 feet from the ground, are covered with blue and yellow mosaic tilings. The peristyles and ceiling are beautifully ornamented with arabesques and fret-work in the most exquisite taste. Around the upper face of the fountain of the lions are some Arabic verses, which describe in a style of oriental hyperbole the wonders and the beauty of the fountain.

On each end of the court projects a sort of portico or gallery, supported likewise with light marble columns.

On the left side of the court of the lions is the Sala de los Abencerrages, where the cicerone never fails to show the blood of these brave warriors, which, however, is nothing else but the deposit of the water impregnated with iron on the white stone.

Opposite to the Sala de los Abencerrages, on the other

side of the court of the lions, is the Sala de las dos Hermanas, or Hall of the Two Sisters; so called from two huge flags of white marble, without a flaw or stain, which are in the pavement. On the upper end of the Mesuair rises the magnificent tower of Comares, so called from a delicate work named comarrias. This massive tower rises above the rest of the building, and overhangs a deep ravine, which descends almost perpendicularly to the river Darro. The prospect from this tower is truly magnificent. The delightful valley through which the Darro flows, part of the city of Granada and of its beautiful Vega (plain), present an enchanting natural panorama. The Sala de Comares was undoubtedly the richest in the Alhambra, and still preserves traces of its past splendour. The walls are richly stuccoed and ornamented with arabesques of such exquisite workmanship, that the most skilful artists would be greatly embarrassed to imitate it. The ceiling is of cedar-wood, inlaid with ivory, silver, and mother of pearl. The three sides of the hall are full of windows, formed in the immense thickness of the wall, which thus allow a free circulation to the air, and admit a faint light which produces a surprising effect. In the same manner all the halls of the Alhambra are lighted and ventilated.
On the east of the Salo de Comares is the Tocador de la Reina, or Queen's Toilet; in a corner of this apartment there is a stone drilled full of holes, through which ascended the smoke of lived at Cairo, and performed it beneath. Close by is the charming little garden of Linderaja with an alabaster fountain, and groves of roses, myrtles, and orange trees. At a short distance from the Alhambra rises the Cerro del Sol, or 'Sun Mountain,' on which the Generalife is situated, a villa where the Mohammedan kings spent the summer months. The palace of Generalife is built in the same style as the Alhambra. Its situation is highly picturesque. The views are all varied, and all charming. We see here fountains spouting above the loftiest trees, numerous cascades, fountains placed in pavilions, and fountains wide-spreading and the ancient myrtles which once overshadowed the kings and queens of Granada. Among them is distinguished the eypress of the Reina Sultana, under which the queen was surprised with her beloved Abencerrage, as the romance says.

When we examine the halls of the Alhambra, we are no less surprised at the elegance of their construction and the beauty of their ornaments than at the durability of a work of such a delicate nature. It appears, indeed, incredible that, after a lapse of nearly five hundred years, its fountains should continue to play; the blue, the carmine, and the gold, should preserve all their brilliancy and freshness; its slender columns and apparently fragile filigree work should have stood the vicissitudes of time, and the terrible shocks of various earthquakes. So, indeed, of the small fountains of this place.

The Alhambra has a governor, who generally lives at Granada. It is guarded by a body of invalids, or retired veterans, who serve as guides to the visitors.

See Swinburn’s Travels in Spain, letter xiii., Colmenar, Diario, vol. iii., James Murphy’s Arabians Antiquities of Spain.

ALHAMBRA, more properly Alambra, a small town of Spain, in the province of La Mancha, eleven miles north of Granada. It contains many interesting and other antiquities belonging to the Roman period, and there can be little doubt that it marks the site of the town called by the Romans Luminium. The letters min, in the middle of a Roman word generally appear in the Spanish in the form of a. Thus, for example, a town, a man, a woman, were changed by the Spaniards to hombre, hembra, respectively. The present town, Luminium, would thus naturally be altered to Lambra, which with the Arabs would almost certainly become Alambra, or Alhambra; the more so as all Arabic words would have been long since obliterated from the language, like the Al-hambra of Granada. Alhambra is in 38° 59' N. lat. 2° 59' W. long. Population 734. Pinyo, Putolnya, and the Antinio’s itinerary mention Luminium.

ALHAZEN, or ALLACEN, properly Al Hazan, or, with minor changes, ben Hassan or Hassan ben Haima, a distinguished mathematician, who lived during the earlier part of the eleventh century. He was a native of Basra. Relying upon his skill in mechanics, he had declared, that he would engage himself to construct a machine by means of which the inundations of the Nile could be made productive of the same advantage, whether they exceeded or fell short of the average height. The Fatimid caliph, Hakim biamr-Allah heard of this, and sent for Al-Hassan, on whom he bestowed rich presents, hoping that he would fulfill his engagement. But when Al-Hassan had made himself better acquainted with the nature of the river, he perceived that he had undertaken an impossibility, and in order to avoid the consequences of Hakim’s anger at his disappointment, he feigned insanity till Hakim died (a.d. 996). He then went to Cairo, where he copied books, and devoted his leisure hours to study and original composition. He died a.d. 1039. A long list of his works may be found in Casiri’s Bibliotheca Arabico-Hispana Selecta, vol. i. p. 415. A treatise on optics, by him translated into Latin by Roger Bacon, and printed at Basle, under the title of Optica Thesaurus, in 1572.

ALI BEN ABI TALEB, surmounted by the Arabs Arabelong to the Persians, Saba, i.e. the Lion of God, was the fourth caliph or successor of the Arabian prophet Mohammed in the government of the new empire founded by him, and occupied the throne during the years 35-40 after the Hegira (a.d. 655-660). He was the cousin-german of Mohammed, and had from his childhood lived under his care and protection. When the latter announced himself as a prophet, Ali, then ten or eleven years old, was, according to tradition, the first man who acknowledged his divine mission. From these circumstances, and also on account of his personal appearance with Fatima, the daughter of Mohammed, Ali appeared to have strong claims to the commandiership over the Faithful, when the prophet died (a.d. 632) without leaving male issue. Three other associates of the prophet, Abu Bekr, Omar, and Othman, were, however, successively appointed caliphs, before Ali could ascend the throne, (a.d. 665) and his son Hassan, who succeeded Ali in 660, was in the ensuing year obliged to resign the government to Moawia, the first caliph of the Ommiade dynasty. The controversy concerning the respective rights of Abu Bekr, Omar, and Othman, hence arose. Ali’s Sullivan, under which the queen was surprised with her beloved Abencerrage, as the romance says.

New disturbances soon arose at Damascus, where Moawia, a near relative of Othman, had by a strong party been appointed Amir or chief. Ali encountered him near Saffah, (a.d. 657), and the neighborhood of which place near the whole year was consumed in skirmishes and the fighting of two armies, but no decisive battle ensued. At last the two opponents agreed to withdraw, Ali to his residence at Kufa, and Moawia to Damascus; the former appointing Abu Musa to his apartment in the city, the latter Ali’s, and at last to arrange the controversy in a peaceable convention at a place called Dumat-al-Jandal, between Syria and Irak. This measure excited much dissatisfaction among the adherents of Ali, many of whom blamed the caliph for having subverted the settled government, and being the settlement of a dispute which, in their opinion, ought to have been left entirely to the decision of Providence and to the chance of war. The discontented, who on this account seceded from Ali, assembled at Naharvan under the command of Abdallah ben Abi Farid, in order to engage in a decisive battle (a.d. 658), in which Ali was victorious. The caution with which the governor of Egypt, Saad ben Kais, had conducted himself during the disputes between Ali and Moawia, rendered him suspected by the caliph. Ali, with the aid of his associates, Abu Bekr and Othman, determined to dissolve the council of Al-Harabra, and also to appoint Mohammed, the son of Abu Bekr, who behaved with such rigour towards the adherents of Moawia, that much discontent was excited in Egypt. Moawia availed himself of this opportunity to send an army under the command of Abdir-Rahman ben Adi, a man called the Harabite, and after a decisive battle (a.d. 658), in which Ali was victorious. The next year (a.d. 660) Moawia sent an army by without any military operations. But in a.d. 660 Moawia sent an army under the command of Bosr ben Artah into Hejaz, who took possession of the two sacred cities, Mecca and Medina, and on his return defeated and killed Abdallah ben Abbas, the governor of Egypt, who was slain by the son of Abu Bekr, when he was fleeing for his life.

About this time three of the zealots of Naharvan, Abdorrahman ben Moljam, Borak ben Abdallah, and Amur ben Bekr, with the design of restoring unity and peace in the Mohammedan empire, attempted to dethrone the caliph Ali, and assassinate the governor of Egypt, Amru ben Alas, the caliph Ali, and Moawia. Amur ben Alas and Moawia escaped, but Ali was struck by Abdorrahman ben Moljam with a poisoned sword in his residence at Kufa, and died after three days (a.d. 662), at the age of fifty-nine, or, according to others, sixty-five years.
Ali had by Fatma three sons, Hassan, Hossain, and Mohsen: the latter died very young. Hassan succeeded his father for a short time in the government, and with him terminated, according to Arabic historians, the legitimate caliphate, i.e. the succession of those caliphs who had been appointed by the free choice of the Faithful. [See Anu Bahns.

**Ali Hyder.** [See Hyder Ali.]

**Ali Pacha,** a celebrated Albanian chief, was born about 1756, in the little town of Teplen, in the pachalik of Berat, on the left bank of the river Voioussa, the ancient Aous. At the foot of this river, and a little farther on, a family was distinguished by the name of Hisas, and had been for ages settled in the country; it belonged to the Albanian tribe or clan of the Toske or Toxide, who boast of being old Mussulmans. One of Ali's ancestors, after being for some time a robber, or bandit, and at danger of being captured by the Turks, in the time of Teplen, and assumed the title of Bey, holding it as a fief of the pacha of Berat; this acquisition became hereditary in his family. Ali's grandfather distinguished himself in the Ottoman army by his bravery, and was killed at the siege of Corfu against the Venetians in the eighteenth century, while in the set of mounting the rampart and calling to his men to follow him. His sword was preserved as a trophy in the arsenal of Corfu until the French occupation of that island in 1793. His son Vehli Bey, the father of Ali Pacha, was extremely wealthy, at least judging from the fact that he lived very partially towards the Greeks. The neighbouring boys or feud Albanian chiefs combined against him, and deprived him of the greater part of his estates. Vehli, unable to put down his distress and grief, leaving two sons, one by each of his two wives and one or two by his sister Shynita, a woman of masculine courage, but cruel disposition, having got rid of her rival and of her rival's son by means, as it was said, of poison, secured the succession to her of the whole of Ali's inheritance in 1802, when Ali, then fourteen years of age. Young Ali accompanied his mother to the seat of war, and he put a little band that remained attached to the Hisas family, keeping at bay her enemies, making incursions into their territories, and practising all the stratagems of Albanian chieftains in his country, although nearly in the same position the Porte, is still in some condition somewhat similar to that of the Highlands of Scotland a century or two since.

Ali at times sought adventures on his own account as a klephtes. With sixty paras in his pocket, and his trusty gun, as he used it in later years, on his back, he roamed about mountains and valleys, and thus acquired that minute knowledge of the topography of his own country which proved so useful to him in his subsequent career. But a cruel event soon plunged Ali's family in misery and shame. The murder of his brother, a tenant of the monastery of Argyro Castro, made an attack by night on Teplen while Ali was absent, and surprised both his mother and sister. The two women were taken to Gardiki, where they were kept strict prisoners for a month, and given up to the brutal lust of the inhabitants in consequence. Ali, however, being unable, as he had to leave the government to the French, to dismount his enemies, to his mother and sisters, his father, and his wife, Fatma, and his children, he was forced to abandon them, and set in the direction of the high roads of Roumly, to exterminate this troop of robbers. The Derwend Pacha of the time happened to be no other than the old Pacha of Berat, Ali's friend. The sequel is easily guessed. An interview took place between the two chiefs, and Ali, withdraw the Arnaouts from the high roads, took service under the Pacha, who wrote a favourable account of him to Constantineople, and obtained his forgiveness. But an intrigue of Ali with the former object of his attachment, the Pacha's daughter, now married to another man, in order to save his life. He then entered the service of the Pacha of Negropont, where he accumulated great wealth. Ali's career as klephte, or chief of high-road robbers, which he had followed for ten years, was thus terminated. In 1807 he married the fair Emineh, daughter of Kasselann, the rebel Pacha of Delvino, who had established himself as an independent tyrant in the strongholds of Argyro Castro. Kasselann, however, was soon after decapitated by order of the Porte. Ali, his successor married Shymet resting, when he was afterwards murdered by his brother Solyman, who married the young widow. By these events the wealth of Kasselann came into Ali's family.

Ali, however, was not yet undisputed master in his own country of Teppelin. Ali's brothers, or chieftains existed in or about the place, whom he knew to be his enemies. He charged some of his trusty friends to get up a sham conspiracy against him, which the others were easily persuaded to join. It was
agreed that Ali was to be murdered in a wood where he was used to rest after hunting. Ali had a goat tied on the spot, and his cloak thrown over it. At the appointed time, the conspirators came and made a discharge of their muskets at the spot. Ali had posted some of his men at the place, who, starting up, frightened the conspirators away before they had time to perceive their error. Thinking that they had killed Ali, they entered Tepelen in triumph, shouting out that he was dead, and then went to their house to carouse upon the event. Ali, concealed in his mother's harem, waited until the night was far advanced and his enemies were intoxicated, when, sallying forth at the head of his faithful band, he exterminated all his antagonists, divided their houses and property among his friends, and from that day he was sole master of Tepelen: such is the account Ali afterwards gave of this exploit. He next conquered various districts which he united to his dominions. Several tribes, overawed by his successes and terrified by his ferocity, voluntarily submitted. His riches now gave him a means of force. Aggrandised by the profits of his first conquests, he obtained the secret commission of executing the 'firman of death' against Selim, Pacha of Delvino. He insinuated himself into the good graces of the latter, and having thus introduced some of his own men into the palace, he took him one evening, threw him into the street, and silenced the Pasha's guards by unrolling before them the sultan's firman. In reward for this service he was appointed lieutenant to the new Derwend Pacha of Roumily, in which office he enriched himself by sharing with the kiphitis the profits of the protection of the Ottoman bazaar. In consequence, the roads soon swarmed with robbers; repeated complaints reached the Porte, and the Derwend Pacha was recalled and beheaded. The lieutenant also, being snubbed, instead of appearing, sent presents to several members of the divan, and contented himself with the harem.

Ali's reputation for bravery and decision was, however, established at Constantiopole, and when the war broke out in 1877, between the Porte and the two courts of Austria and Russia, he was appointed to a command in the army under the command of Sir Harry Morison. Thus was Ali at the head of the expedition to the Jornada, and he was next appointed to the pashalic of Tricala in Thessaly, and was moreover named Derwend Pacha of Roumily. He now raised a body of four thousand men, all Albanians and all old kiphitis, with whom he soon captured the roads of robbers, and thus won merit with the Porte. He now turned his views towards Jannina, the capital of southern Albania or Epirus, where utter anarchy prevailed. The pasha of Jannina had but a nominal authority, which the beys of the country openly disregarded, while the kiphitis quarrelled among themselves. Ali, in his pashalic of Tricala, was master of the road leading from Constantiopole to Epirus, by which Jannina is supplied with corn from Thessaly. Ali made war on the beys, and when these obtained a treaty with the Porte enjoining peace in all matters concerning Jannina, Ali stopped and bribed the messengers, and substituted a forged firman appointing himself to the command of Jannina, with orders to all to submit to his injunctions. Ali followed close upon this, disarming the towns, and keeping the main body in the Jornada. As soon as he reached the town, he entered it and took possession of the citadel; he then assembled the Greek prelates and the agas of the Musulmans, and made them sign a petition he had drawn up, in which the whole population of Jannina was made to entreat the Porte not to grant to the Albanians the vacant place at the head of the government, as the protector of public order, and the most zealous and faithful subject of his highness. This petition, being forwarded to Constantinople and supported by Ali's agents with ready money, produced its effect. Ali was confirmed in his command, which he had usurped by force, and was appointed by the Porte to the vacant place at the head of the government, to the great terror of the robbers, the protector of public order, and the most zealous and faithful subject of his highness. This petition, being forwarded to Constantinople and supported by Ali's agents with ready money, produced its effect. Ali was confirmed in his command, which he had usurped by force, and was appointed by the Porte to the vacant place at the head of the government, to the great terror of the robbers, the protector of public order, and the most zealous and faithful subject of his highness.

The 1878 Firman gave the Pacha of Epirus constructing any battery within a mile of the coast, even of his own gulf of Ambracia. These stipulations were maintained as long as Venice remained free; but when the Austrians finally occupied Venice in 1877, and the latter, in their sharing the spoils with Austria, kept for themselves the eastern possessions of the republic, Ali, while he was receiving the French by professions of friendship, represented to the Porte that neither justice nor prudence required the fulfilment of former treaties with Venice in favour of the usurpers of Venice: accordingly he attacked one after the other the places on the coast, Parga, however, was protected by its impregnable position and the watchfulness of its inhabitants. The French army, with the object of preventing the fall of Parga, was attended with circumstances of aggravated horror. Ali with a large force invested the French, who, to the number of 700 were encamped on the site of Nicopolis. Some auxiliaries from Prevesa being broken in upon by the Albanian vassals of Pacha, his French forces were vastly outnumbered, fought desperately until reduced to about 100 men, who, from exhaustion, were obliged to surrender. Meanwhile the Albanians had surprised Prevesa and entered the town, where a dreadful carnage took place. The Ottoman army, under Pacha, had been reduced to five streets; the houses were set on fire, the surviving inhabitants, men, women, and children, to the number of about 400, were taken to the island of Salagona and there butchered without mercy. The French prisoners, after innumerable tortures, were taken to Prevesa, where, according to the barbarous custom of the time, the Porte, and all the way to Constantiopole; most of them perished on the road. The catastrophe of Prevesa happened in October 1878. After Parga, it was successively garrisoned by the French, the Russians, and the English, until 1818 it was taken up to Ali by a French fleet, which treaty was to take Santa Maria by surprise, but he was baffled in his attempt in the same year. This occupation of the island alarmed the inhabitants of Souli, and they rose against the French. The French were then cut off by the Albanians, who, on the 18th of May, 1818, were taken up by Ali to the coast, and with the aid of the Sultan's fleet, joined by the Albanians, they were soon driven off. The Albanians, who, from this time, held the island, and destroyed it, and the island was given to the Albanians, and the Albanians were thus given to the Albanians.

Another war of extermination was that which Ali waged against the mountainers of Souli. It has been called the ten years' war; it began in 1792, and ended in 1803, by the destruction of the Souliotes. This Christian party, who had lived independent for more than a century, in four villages, among almost inaccessible mountains, about six hours distance from Gardiki. They numbered only between 500 and 600 families, and could must a body of 2000 fighting men: the Souliotes were the last of the Albanian tribes, and they were condescending to the successive pachas of Epirus. They had been attacked repeatedly by large forces, but they had always repulsed their enemies. The neighbouring districts, and even some of the Musulman beys, secretly favoured them. Ali could not think of pushing this war, not to his advantage, on his dominions, almost within sight of his capital. He attacked them, but was beaten like all his predecessors. His hostility now assumed more the character of malignant rage, and he vowed the total extermination of the Souliotes. For years they had been cutting off their branches, and listening to all their communications and supplies, and starved them in their mountains; which he effected by surrounding them with a chain of forts guarded by a numerous army. He found means of cutting one of their chief, Georges Botian, who was taken and murdered, and thus killed the last of the Souliotes. It was then the turn of Ali to experience despair and the tribes of Ali did the rest. Some of the defiles leading to Souli were given over to the pacha, and he was enabled to take possession of the springs from which they drew their water. At last the poor Souliotes submitted, and Ali was enabled to make himself master of the island, and to exercise over it the rule that his predecessors had exercised over it, and to destroy it, and to starve it, without mercy. The Souliotes were all exterminated, as far as could be hoped. By the time the war was over, the Albanians had annihilated the Albanians; they all perished. In one instance, a small party, being completely surrounded, retreated towards a precipice, the women leading the way: being arrived on the brink, they threw their children into the abyss below, after which they all...
husbands and wives, fathers and sons, brothers and sisters, linked hand in hand, ran down the declivity, and mutually impelled each other on their precipices in flight of their disappointed enemies. Another band, in like manner, pressed by a body of Albanian cavalry, plunged into the river Acheron and were drowned. The main body, who had marched off to Parga, left behind some men to act as commissioners in the settlement. The Ali's house was occupied by the Turks, to whom it was ceded, but at least formally, for the sake of the capitulation. These men's lives were, of course, guaranteed by the treaty. One of them, a priest, Samuel by name, was left in charge of a powder magazine. The Albanians came in, and began to taunt him with the presence of such a very great number of enemies, and the sight of the hands of the pacha as a reward for his obstinacy. Samuel listened coolly, and when he saw the store-room nearly filled with Albanians, he threw the burning snuff of a candle on some powder which was scattered about, and blew up the store-house with himself and his enemies utterly.

The Souliotes who had gone off to Parga reached that place in safety, though pursued by Ali's cavalry, and there embarked for Corfu, at that time occupied by the Russians.

Ali extended his dominions to the north into Albania Persia, by the conquest of the pashalik of Berat, which he effected more by intrigues than by force. Stirring up revolts, and then stepping in as mediator, he dispossessed his old rival Ibrahim, whom he consigned to a dungeon, although their children had intermarried. He likewise occupied the islands of Corfu and Parga, and, joining in the attack ordered by the Porte against the rebellious pacha of Skodra, or Seutari, and then kept it for himself. By this means he ensured an excellent military position for the future. The magnificent city of Macedonia, was at last yielded to Ali, and was offered for sale to these usual suitors of his. Ali was even appointed for a twelvemonth Roumily-Valicy, or supreme inspector of the principal division of the empire, and he went to reside at Monastir, at the head of 24,000 men. His extortions in Parga were very great, and somewhat in the latter part of his life extended over all Epirus, one-half of Albania Proper, part of Thessaly, and the whole of western Greece, from the lake of Orchis on the north, to the Gulf of Lepanto on the south, and from Mount Pindus to the Adriatic. He went on for more parts of his dominions. The second son, Veli, was made Pacha of Morea; and his elder son, Mouktar, a thorough soldier, distinguished himself in the service of the sultan during the campaign of 1809, against the Russians. The youngest of all, Salih Bey, who was his chief lieutenant, was a very plausible man, brought up with particular care under good tutors and teachers. Veli Pacha was also a man of some information, and his son Mahmood, who was brought up at his grandfather's court, surprised Lord Byron by his inquiries about English, when the English parliament. He was then a boy of fourteen.

Ali Pacha, although hated by the Porte, might have ended his days in peace; his power made him feared, and his advanced age was an inducement to the sultan to wait patiently for an opportunity to employ him. Veli Pacha, in the latter part of his life extended over all Epirus, one-half of Albania Proper, part of Thessaly, and the whole of western Greece, from the lake of Orchis on the north, to the Gulf of Lepanto on the south, and from Mount Pindus to the Adriatic. He went on for more parts of his dominions. The second son, Veli, was made Pacha of Morea; and his elder son, Moukatar, a thorough soldier, distinguished himself in the service of the sultan during the campaign of 1809, against the Russians. The youngest of all, Salih Bey, who was his chief lieutenant, was a very plausible man, brought up with particular care under good tutors and teachers. Veli Pacha was also a man of some information, and his son Mahmood, who was brought up at his grandfather's court, surprised Lord Byron by his inquiries about English, when the English parliament. He was then a boy of fourteen.

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eling state of its commerce may, however, be principally referred to the prohibitions placed on the importation of various articles of foreign manufacture and merchandise, and to the heavy duties imposed upon such other goods as are admitted. The greater part of the foreign trade consists in imports of linen from France and Genoa, tobacco from the United States of America, and cod-fish from Newfoundland; its exports are, barilla and almonds to England and Ireland, and wine to Brazil and the coast of Barbary. A considerable quantity of wine is also shipped to the port of Cetce in Languedoc, whence it is sent by the great southern canal to Bordeaux, to be mixed with the inferior Medoc wines. Alicante likewise exports oil, olives, brandy, and soap: the quality of the last-mentioned article is much esteemed. The communications between the town and the continuous country are for the most part kept up by hilly small coasting vessels of from twenty to seventy tons burthen, the roads being so exceedingly bad, that such goods as are sent by land must be conveyed on the backs of mules and ass-es. The wheat required for the consumption of the inhabitants is mostly brought from places about twenty miles inland, and for the reason just given, its cost is nearly doubled by the time of its arrival at Alicante. The average price of wheat during the ten years ending with 1831, was equal to 6s. 4d. per imperial quarter, while its average price in this kingdom during the same period was only 5s. 5d. Alicante is dependant upon foreign supply for the articles of cheese and butter, the prices of which are usually double what are paid in London; the consumption of these articles is therefore small, but the bulk of all other imports made up of oil instead. Meat is very indifferent in quality, and the price nearly as high as in England, so that taking quality into the account it is dearer than in England. The town is besides very ill supplied with water.

The road leading to the port from foreign parts was, in 1829, 126 ships, 19,706 tons
1830 108 14,840
1831 157 16,873

The Spanish vessels, including those employed in the coasting trade, that arrived in the years preceding as follows:
1829 783 vessels 19,775 tons
1830 746 21,681
1831 813 22,645

Goods may be landed at Alicante, and lie in entrepôt for one year without payment of duty, and at any period during that time may be exported on paying 2 per cent. on their value. At the expiration of the year the duties must be paid, together with 2 per cent. ad valorem as an equivalent for warehouse rent.

The principal ocean road of the island is a open bay, between the Cape de la Huerta and Plane Island, distant from each other about ten miles in a north-east direction. Ships on entering the port may steer between these points in any course direct for the castle, and come to anchor in four to eight fathoms water, though they must be kept on the pilot, notwithstanding, for there is no perceptible tide in the port of Alicante; the depth of water varies from fifteen to four fathoms, according to the distance from the shore: neither bar nor shallows are to be passed in entering. Ships mostly lie in the bay at the distance of a quarter of a mile to a mile from the shore. They are not exposed to any danger from winds, currents, or other casualties when at anchor, and during the last twenty years no case has occurred of a vessel being driven from her moorings.

A merchant line is in progress of construction, and has already been carried upwards of 300 yards and into fifteen feet water. It is intended to continue it into twenty-four feet water. This mole is constructed with large stones which are dropped, and the bolts of these are driven with large blocks of cut stone. Small vessels lie along the mole in order to take in or discharge their lading.

Alicante stands on the site of the ancient town of Lucen- tum. During the war of 1812, when the French garrison wasComposition of the individual owner of the crown of England, as Normanby, Greville, etc., were not considered as aliens so long as they continued to in large fragments on the beach. Alicata is built on the right bank of the river Salo, which divides the provinces of Noto and Mazzara; it is very favourably situated for trade, and exports considerable quantities of grain and sulphur. The port is a "curiosity," or place endowed with such a community of carrying merchandize of the country. Notwithstanding these advantages, the general appearance of the place is that of neglect and poverty. The anchorage is about a mile south-west of the town, in from seven to twelve fathoms water, with a good clay bottom, but ships are much exposed in winter; "all the harbours from south-south-easterly." This evil might be remedied at a moderate expense. Two reefs of rocks off the west end of the town could easily be converted into excellent mole, for which purpose the neighbourhood affords abundance of masonry, and the clay which might be excavated, so as to form a wet dock capable of containing in perfect security nearly a hundred sa. of small craft.

The suffrage of "civitas" has allotted to each of the principal cities of Sicily an agrimen, illustrative of this rank, the inhabitants as L'Amata, or the beloved. Its population amounts to nearly 11,000. (Smyth's Memoir of Sicily.)

ALICUDI. The most westerly of the Aolian or Lipari islands, a group belonging to Sicily, and situated between the north-west coast of Sicily and the continent of Italy. Alicudi was called Ericusa and Ericodes, by the Greeks, from the heath which grows on it. (See Strabo, 276. Ca- saub.) Alicudi is a corrupted form of Ericodes, as Felicudi, or Felicudiis, is of Felicidata, from Felicia, the ancient name of this fragment. It consists of a abrupt conical-shaped crater, about six miles in circumference, which rises at once from the sea. The surface is composed of irregular ravines and precipitous hills: and although its fires have been extinct for so many ages that no history notices its conflagrations, it is observable that the grotesque forms like a stream extending from the summit to the sea, and retaining the apparent sterility and forbidding aspect of a recent eruption. The island is, nevertheless, cultivated with laborious industry in every spot capable of cultivation, and the wheat, barley, and pulse are produced, and wheat of a peculiarly fine quality.

The coasts are rude, craggy precipices, affording only two landing places, which are very difficult of access in fresh winds. The best is on the south-east side under Pont Palomba; the other is on the north-east coast. The population of Alicudi amounts to about 260 persons, among whom diseases are said to be almost wholly unknown. They live so secluded from the rest of the world, that a visit from a stranger is an extraordinary event, and they are prepared to defend their land against pirates, who so frequently infest the Mediterranean sea. (Smyth's Memoir of Sicily.)

ALIEN. An alien (alérne, alité-nauta, aliena) is a person born out of the allegiance of the king, which appellation is a usage among the ancient Latins. It is sometimes used to mean one capable of acquiring rights, and possessing perpetual allegiance to the crown of these realms. It is not true that every person, born out of the dominion of the crown, is therefore an alien; nor is a person born within them necessarily a natural-born subject. It is essential to alienage that the birth of the individual occurred in a situation and under circumstances which gave to the king of this country no claim or right to his allegiance. It is not intended here to present any view of the subject as founded on the law of nations, but to detail the municipal regulations with which foreign states have deemed it expedient to adopt in reference to their intercourse with strangers; but we shall confine ourselves to the existing state of the law of England, as it regards this class of persons.

The following instances will serve to illustrate the above description of an alien. The native subject of a foreign country continues to be an alien, though the country afterwards becomes a part of the British dominions.

A natural-born subject born in the island of Jersey, by the accession of James I., were aliens even after that event: but those who were born afterwards were adjudged to be natural-born subjects. This question was the subject of solemn discussion in the reign of that prince: and several judgments of the courts of star-chamber were reversed by succeeding lawyers in all similar controversies. Persons born in those parts of France which formerly belonged to the crown of England, as Normandy, Guiney, Gascoey, etc., were not considered as aliens so long as they continued so
annexed; and, upon the same principle, persons born at this day in any of our colonial possessions are accounted native subjects. A man, born and settled at Calais whilst it was in the possession of the English, fled to Flanders with his wife, then pregnant; and there, after the capture of Calais by the French, had a son: the issue was held to be no alien. When an hostile army enters a foreign territory, the children of the invaders, born during such hostile occupation, are to be regarded as subjects of the invading country and not of the country invaded.

The children of ambassadors, and other official residents in foreign states, have always been held natives of the country which they represent and in whose subjects they are. Their right to be so considered at a time when the law of alienage was stricter than it now is. It has been since so far extended by various enactments, that all children born abroad, whose fathers or grandfathers on the father's side, were natural subjects, are now deemed to possess that character, unless their fathers were liable to the penalties of treason or felony; or were in the service of a prince at war with this country. (25 Ed. III. st. 2; 7 Anne, c. 5; 4 Geo. III., c. 21; 13 Geo. III., c. 21.)

Several principles of our law, and it is believed, of the law of most other European states, that a man may subject himself to a double and conflicting allegiance; for, though he may pledge his allegiance to the sovereign of his adopted country, he cannot divest himself of his allegiance to his own country. In the event of a war between the two states, he can take no active part on behalf of one without incurring the penalty of treason in the other. It appears, too, that this interesting predilection may occur without any default of the party; for the children of aliens, born in the same country, under similar circumstances, are subjects of the state in which they were born: yet we have seen above that they may still be regarded as natural-born subjects of the state to which their parents owed allegiance.

Having described the persons whom the law designates as aliens, we shall shortly point out the legal consequences of alienage, and the means by which its attendant incapacities may be either wholly or partially removed. An alien cannot hold property in land without the king's permission; and if it should become vested in him by purchase, it is restored to the former owner on a petition to the courts of law to put on them a construction the most favourable to foreign commerce, agreeable to the sentiments of Lord Justice Hale, that 'the law of England hath always been very gentle in the construction of the disability, compared to many countries, whereby he wished his own people would take example.' (Veintra's Reports, vol. i. p. 427.)

In the reign of James I., the king was strongly petitioned to adopt exclusive measures against the aliens, who had flocked into the kingdom from the Low Countries; but such measures were rejected by a great majority of the House of Commons. The party of the alien, though it no longer engaged in the measures of the House, frequently obtained their adoption by the discretion of the majority. (See House of Commons, 1697.)

In the reign of Charles II., aliens were invited to settle in this country, and to engage in certain trades, by an offer of privileges to native subjects. (16 Car. II., c. 15.)

In the early part of the last century, the Naturalization Bill, which is either from want of recent authentic precedents, or from a desire of the Privy Council, or of holding grants and offices of trust under the crown; an exclusion dictated by the jealous policy of the legislature on the accession of the House of Orange.

It is to be observed, that the rights and incapacities attaching to aliens, enumerated above, must be understood to apply only to alien friends. Alien enemies, or subjects of a foreign state at war with this country, are in a very different condition, and may be said to possess certain rights of any kind which the law will recognise or protect.

As examples of the policy which has at different times been pursued in this country, with reference to the reception of aliens, the following historical notices may perhaps be interesting:

Magna Charta stipulates, in the article already cited, for the free access of foreign merchants for the purposes of trade, and its provisions were enforced and extended under the reigns of succeeding princes. In the eighteenth century, Edward I., the parliament rolls contain a petition from the citizens of London, 'that foreign merchants should be expelled from the city, because they get rich to the impoverishment of the citizens;' to which the king replies, 'that they are beneficial and useful, and he has no intention to deprive them.'

In the reign of Edward III., several beneficial privileges were conferred on aliens, in furtherance of foreign commerce. Under Richard II., and his successor, statutes were made against the various complaints made on aliens trading within the realm, and especially prohibiting illegal alienage in another. Similar restrictions were introduced in the reign of Richard III., chiefly with a view to exclude them from retail trade; and in that of Henry VIII., violent insurrections were excited against alien subjects, by enacting the misconstrued consequences attributed to the influx of foreigners, and laying severer impediments in the way of their settlement within the realm. Several acts of this description are still in force, though they have fallen into practical disuse; but it has been the uniform policy of the courts of law to put on them a construction the most favourable to foreign commerce, agreeable to the sentiments of Lord Justice Hale, that 'the law of England hath always been very gentle in the construction of the disability, compared to many countries, whereby he wished his own people would take example.'

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ALIMENT. [See Foot.]

ALIMONY.
red cabbage and infusion of turmeric, or paper stained with them, are used as tests of the presence of an alkali. The alkali restore the colour of vegetable blues which have been reddened by acids, and, on the other hand, the acids restore vegetable colours which have been altered by the alkali.

The alkalis have great affinity for, and readily combine with acids, forming salts, and the power of both in altering vegetable colours is generally destroyed. The alkalis are separated at the negative pole of the voltaic trough. Ammonia and many of the alkalis of its class combine with metallic oxides: thus the oxides of cobalt, copper, nickel, &c. are taken up by ammonia, while potash and soda unite not only with the oxides of lead, zinc, &c., but also with silice, alumina, &c. The nature of the compounds which they form with these substances, and others with which they unite, will be treated of under each particular alkali.

Ammonia is largely employed in medicine and in scientific chemistry; the alkalis of the second class are used for the same purposes, and also extensively in various chemical arts, as in soap and glass making, &c. Some of them act strongly upon vegetable and animal matter, producing changes which we shall notice under each alkali. The alkalis of the third class are principally employed in medicine.

The alkali and alkaline earths which we shall more particularly notice are the following:—


ALKANET. [See Anchnuaris.]

ALKMAAR, is a strongly fortified and well-built town in North Holland, on the Helder canal, 20 English miles N.N.W. of Amsterdam: 52° 38' N., lat. 4° 43' E. long. It is intersected by many canals, and has a large extent of environs of excellent gardens and rich meadows. This town is the greatest cheese depot in Holland, and also a great butter market. It has some fabrics of sail-cloth; and a population of 9439 inhabitants on January 1, 1830. Alkmaar is a very old town, and from its position gives great importance to the defence of the province. In the expedition of 1779 the British and Russians, under the Duke of York, advanced as far as Alkmaar.

ALKMAAR (HENRY OF). This is the name assumed by the author of a celebrated old poem, in the Low-German, or Sussich dialect, entitled Reineke de Foos, (Reynard the Fox,) in the preface to the first edition of it printed at Leubeck in 1498. It can scarcely be said that any thing more is known of Alkmaar, except that the poem seems to have existed about the year 1470, and to have been tutor to one of the Dukes of Loraine. But it is extremely doubtful if this be more than an assumed name. Attempts have been made to show that the true author of Reynard the Fox was a person of the name of Nicholas Baumann, a native of East Friesland, who, having been a member of the council of Duke Magnus, of Julliers, and having been driven from the court of that prince by a cabal, wrote this poem to expose the arts of which he had been the victim, and in the same time caused the name of Alkmaar to escape the revenge of those whom he satirised. But whoever was really the writer of the poem published at Leubeck in 1498, it has been clearly established that he was merely the versifier, and not the original author of Reynard the Fox. He still preserved the preference that he translated the work from the Welsh (though it may be difficult to say what language it is which he thus designates) and from the French. Two editions of a work in prose, and in the Dutch language, of less value than the poem, called Reynard the Fox, but containing the complete groundwork of its story, have been discovered; the one printed by Gerard Leew at Gouda, in 1479, the other (which is exactly similar, and of which there is a copy in the public library of Leubeck) printed at Delft, in 1485. A work of the same nature, and with the same title, appears to have been written in French about the beginning of the thirteenth century, by Pierre de St. Cloud, of which a metrical imitation was published at Lille towards the end of the same century, by Jacques le Noir, and the Edits of Le Nouveau

[Alisma Plantago.—Great Water Plantain.]
Mr. Le Grand d’Aussy, in his *Notes et Extraits des Manuscripts de la Bibliothèque de Paris*, contends that certain productions are the true originals of the German poem. The general title of the fable, however, is probably more than 250 years old. The author has lost his name, and it is said that traces of it are to be found in the monasteries of Germany long before the time of St. Chold. *Reméde de Fos*, as already hinted, is a satirical poem, in which the different animals, being assembled at the court of their king, the elephant, plow through the vices and follies of mankind, and have always been extremely popular in Germany, the edition which bears the name of Henry of Althmar having been repeatedly reprinted at Rostock, Frankfort, and Hamburgh. The *Friesische Fabeln* have also been modernized in its language, and translated into hexameters by the celebrated Gothic. Versions of it have been likewise made into the Latin, Italian, Danish, Swedish, and English languages. Of these, the most elegant is the translation into Latin verse, by Hartman Schopperius, under the title of *Aesoporum Fito Adsum_: *De adversis filiis* et *Adbulio* Filii *Peppcirio*. Anne *Promptus ex antiquo Germania* Lantransator, &c., published in 1620, at Frankfort, in 1614, and again in 1814, with cuts, epigrams, and a dedication to the Roman Catholic Maximilian, printed 1568. The English translation is one of the productions of Caxton’s press, and is without any title page, but concludes as follows: 1. I have not added any manuscript, but have followed as much as I can my copier, whose name was Janec. 2. I have followed into this rude and simple English, in Thibeg, by Westminster, finished the 24. day of Junyn, the yere of our Lord merceviiii, and the xxi. yere of the reigne of Kyng Edward the vn. It may be added to this poem, besides the work and amusement, has beem looked upon as very curious and valuable, for the illustrations which it supplies of ancient manners and customs. M. Dreyer, in his *Littérature et de la Cité de Caxton*, has published a volume, under the title of *Le Musée de l’Academie des Sciences*, 1768. The latest edition of the poem, we believe, is that published at Brunsibwic in 1825, with explanatory remarks, by Dr. K. Scheller, of which a notice may be found in *The Scottish Review*, No. 7. (See the *Forsingh Universelle*.)

ALL HALLOWS, ALL HALLOLLOWAS, or simply HALLOWMAS, is an old English name for All Saints’ Day, or the 1st of November. Thus, in Shakespeare’s *Two Gentlemen of Verona*, Valentine, when speaking of the tides, says, “Mark ye these two tides, the new moon, and All Hallowmas; these are the two great tides of the year, and are the low water levels of the sea.”

HALLOWMAS, the old English name for All Hallows, is one of the most popular observances in the northern countries. Mr. Strutt, in the third volume of his *Hinds’s Anglo-Surname*, has printed an extract from an old manuscript in which it is asserted that this feast was kept by the pope ordained to fulfill our emmision for many a Sunday in the last century, for there were so many men who we must serve them all: for, as St. Jerome saith, in each day of the year: more than five thousand and four hundred, outtake the first day of January. But Mr. Fotherby, in his *Surnames of England*, says that these are the names of two tides which are not meet to be observed as a haliday till two hundred years later.

All Hallows derives its greatest importance from the popular usages, which in our own and various other countries have distinguished solemnities the day itself, but more generally the day preceding, called its eve or vigil. There is great reason to believe that this was a Pagan before it was transformed into a Christian festival; and there can, at any rate, be no question that the ceremonies to which we refer are exclusively of Druidical origin. All-Hallow’s (the 31st of October) was marked, in the natural calendar, by our Christian set the great evening of the year, by which day the harvest was generally gathered in, and the work of the husbandman brought to a close. It was natural therefore that it should be celebrated in a manner expressive on the one hand of joy and thankfulness, and on the other of the solemnities of the Church and the. season of winter, of which it was the commencement. Feasts accordingly appear to have been lighted; whichever is, or both was, preserved in many parts of Wales, Ireland, and Scotland. This is very well shown by John Sinclair’s *Statistical Account of Scotland*, in the accounts of the parishes of Callander, Logart, Kirkmarchal, Aberdeine, &c.; and in his *Homes Every Day Book*, vol. ii, p. 142, a letter from a correspondent describing the fires which are kindled by the children on Hallowmas in the midst of the White Cart River, on which the town of Paisley stands. In the latter work, vol. i, p. 1421, &c., and also in Brains *Observations on Popular Antiquities*, there referred to, the reader will find many curious details respecting the most popular observance of All-Hallows in Wales, the North of England, Ireland, and elsewhere. After the introduction of Christianity the ringing of bells seems to have been added to the lighting of bonfires. This last custom commenced on the 31st of October by the All-Hallows, and was observed until the next day. But it was prohibited as superstitions both by Henry VIII. and by Elizabeth; but is said not to be yet altogether extinguished. An old sermon, quoted by Boucher, describes the ringing as performed for the purpose of all Christian souls.

Besides these out-of-door rejoicings, the eve of the festival was celebrated by much merrymaking round the bonfire. It has been observed, that in the latter half of the 18th century and much earlier, at all the All-Hallows, there was this custom observed of what was called bread-and-wood, that is, a wine mixed with the pulp of roasted apples. General Valkayce has ingeniously explained this singular rite as the法兰克酒 of Hallowmas eve by deriving it from the German custom of the bread and wood, or from the apple-fruit. The English term *Bread-and-wood* is merely a corruption of this forgotten Celtic designation.

But the eve of All-Hallows is especially famous for those observances which have been sent to take place on the common, as the bonfire, the game of Speed, and other lights of night, in honor of the unknown deity.

The same ceremonies of this description seem to have been anciently practised in England, Ireland, and Scotland; but they are now almost universally dismissed. In England, they are carried on, as in Scotland, in the country, at least, friends and neighbors still, as Burns has expressed, it.
cular account of the various modes in which this application is made, we must refer the reader to Burne's poem, and the notes by which it is illustrated.

ALL SAINTS. A cluster of three small islands so called from their having been discovered by the Spaniards on All Saints' Day. They are near the south side of the Island of Guadaloupe, and within its jurisdiction, in 15° 31' N. lat., and 61° 44' W. long.

The two largest islands of this cluster are called Terre-ën-Haut, or High Island, and Terre-ën-Bas, or Low Island. They are thirty-three miles long, and thirty-two miles wide, between which and the third island, which is little more than a barren rock to the north-west, there is exceedingly good and safe anchorage in from six to sixteen fathoms water. On the south-west side of Terre-ën-Haut is a mountain 813 feet above the level of the sea, and on the north coast is a remarkable promontory which serves as a landmark for vessels approaching from the northward. This island produces Indian corn for the subsistence of the inhabitants, and a little cotton for exportation. Terre-ën-Bas also produces Indian corn and cotton, together with a small quantity of coffee, said to be of the finest quality.

The inhabitants of these islands, who are not more than 300 in number, are very poor, and subsist principally on vegetables and fish, which last are good and abundant. (See also 'Tobacco' and 'Pointe-à-Pitre,' that of this town.)

ALL SAINTS' BAY. A large and commodious bay in the province of the same name in Brazil. The entrance to the bay is in 12° 42' S. lat., and 38° 2' W. long.; it is eight miles wide between the points of Todos os Santos at the south and north of the bay. The province is bounded on the north by the River Rial; on the south by the province of Los Ilheos; on the east by the south Atlantic ocean, and on the west by territory still in the possession of aboriginal Indians.

The bay is thirty-seven miles long from north to south, and twenty-seven miles wide in the widest part from east to west, within which space it is computed that secure anchorage could be found for all the navies of the world. The dimensions just given are, however, perhaps a little in excess. The bay is the resort of all the fish while it is called Taparaca, stretches inwards from the mouth of the bay, to which it forms two entrances. This island is eighteen miles long, and about three broad in the widest parts; the coasts of the bay have many small inlets. Two shoals lie near the entrance on the west side, but are not dangerous, as there is a channel of sufficient breadth and depth for ships of any size.

All Saints' Bay, called by the Portuguese Bahia de Todos Santos, was discovered by the Portuguese navigators early in the seventeenth century, and the surrounding country was made under the auspices of King John III. of Portugal, by several persons of distinction, commanded by Francisco Pereira Cotinho. While their settlement was in its infancy, these adventurers were attacked by a party of native Indians and compelled to retire; after this they had the misfortune to be shipwrecked upon an island within the bay, when such as escaped the waves were massacred by the inhabitants.

A second settlement was made upwards by the Crown of Portugal, and declared to be the capital of Brazil. This settlement appears to have prospered, and to have been the source of much profit to the government of the parent state, which drew from it annual supplies of gold, diamonds, tobacco, and sugar. It is interesting to note the plantation is performed by negro slaves.

The town of San Salvador, commonly known as Bahia, stands just within the bay on the east side. It has a considerable export trade to Europe; in the articles just mentioned it returns immense imports of European goods. It trades likewise with Maldonado and Montevideo, whence it brings back salt beef for the consumption of the negroes, and hides; and with the Coast of Africa, where its tobacco is exchanged for slaves.

Several rivers which flow from the mountains discharge themselves into All Saints' Bay. The principal of these rivers are the Paraguaçu, the Sergippe, the Jaguarippe, the Matuí, the Paranámer, and the Pirajá. These streams add greatly to the trade of the port; nearly 1000 boats being constantly employed upon them in bringing down the various products of the interior.

Nitre of excellent quality and in great abundance has been found in the south-west part of the province. The Town of Cairongo, situated fourteen leagues from Bahia Province, is the spot where the several offices to the gold mines of the north is collected. Iron and copper are likewise found in the province. A piece of native copper weighing 2666 pounds, the largest perhaps known to exist in the world, was sent hence to Portugal, and is deposited in the Royal Museum of Lisbon.

The Coast of Brazil in the vicinity of this bay abounds with whales, but the fishing is prosecuted only by a few large boats, and the quantity of oil procured is seldom found equal to the consumption of the inhabitants. (Souther's History of Brazil, and Thompson's Glenda.)

ALL SAINTS' BAY, a deep inlet on the Coast of California, in 31° 43' N. lat., and 63° 34' W. long., at the point where the Peninsula joins the province of New California. A cluster of detached rocks lies at the distance of three leagues from the shore on the coast of Mission of St. Thomas, established in 1790, is in the immediate neighbourhood of this bay. (Vancouver's Voyage.)

ALL SOULS' COLLEGE, Oxford, was founded in 1437, by Henry Chichele, Archbishop of Canterbury, although in the charter of endowment which was obtained by the university in the next year, King Henry VI. assumed the title of founder, a term which in the language of the day meant simply patron. The lineal descendants of those who had founded religious houses, and who retained the tithes of the lands which returned at the dissolution, were all called founders. According to the charter, the society was to consist of a warden and twenty fellows, with power in the warden to increase their number to forty; and was to be called ' The College of the Blessed Virgin Mary of Oswestry; Collegium omnium defunctorum de Ovon.' The obligation imposed on the society was to pray for the good estate of Henry VI. and the archbishop during their lives, and for their souls after their decease; also for the souls of Henry V. and the Duke of Clarence, so long as all those of the dukedoms, earls, barons, knights, and esquires, and other subjects of the crown of England who had fallen in the war with France, and for the souls of all the faithful deceased.

Sixteen of the fellows were to study the civil and canon laws, and the rest to follow the usual studies. The most remarkable clause in the charter gave the society leave to purchase lands to the yearly value of 300l., a sum of great magnitude for the time, and which has since been increased to 1500l. After this, however, no further extensive privileges was granted soon after the foundation by King Henry VI., and this and the first charter were confirmed by Act of Parliament in the 14th Henry VII., 1499.

The statutes for the regulation of the college were not given till a few days before Archbishop Chichele's death. They were modelled after the statutes which had been given to New College, by William de Wykeham; and ordained that the fellows shall be born in lawful wedlock in the province of Canterbury, with a preference to the next of kin of William de Wykeham and his friends. The charter of the college was restored. A very ancient copy of the statutes is preserved among the Arundel manuscripts, now in the British Museum, No. 147. In the Stemmata Chicheleana, published in 1765, the founder's collateral descendants are traced through the last of the family. The society were also joined by chaplains, clerks, and choristers.

The founder gave this institution the manors of Wedon and Weston, or Wedon Pinkney in Northamptonshire, of Edington and Slechton, or Edington and Slechton, of Upchurch in Kent, and the suppressed Alien Priories of New Rumney in Kent, Alberbury, or Alberbury in Shropshire, St. Clare in Carmarthenshire, and Langenheim in Glamorganshire. The Alien Priory estates are said to have been rescued by King Edward IV., but were afterwards restored. Besides these possessions, the trustees of the founder purchased the manors of Edgeware, Kingsbury, and Malorees in Middlesex; and the founder himself bequeathed the sums of 134l. 8s. 9d., and 1000 marks, to be banked for the use of the college.
In 1442, the college was capable of receiving the warden and fellows; but it was not done until the latter end of 1444. The expense of the buildings was estimated at 431s. 6d. 3ld. the purchase of grounds, books, chapel furniture, &c. at 340l. 3s. 6d. The accounts of the minor items are still remaining.

The Rape is peculiar to this society of an early date we find the names of James Goldswoth, Bishop of Norwich, Cardinal Pole, and David Pole, Bishop of Peterborough; but the acquisition of these and other persons consisted chiefly in advowsons. The endowment of the college was secured, in 1513, at the time of the marriage of Christopher Wren, Archdeacon, and Archdeacon Chichele. The great quadrangle was erected by Hawksmoor soon after the beginning of the last century. The chapel, hall, and library, which have passed through stages of alteration since the foundation of the college, are in the general style of character of the newer buildings. The greater part of the new buildings were constructed at the expense of various benefactors. The hall at the east end of the chapel was renewed in its interior, in 1729; it contains, beside numerous busts and pictures, the portrait of Sir William Beckford. The new library, which superseded the old one in the original quadrangle, now reduced to chambers, was built from funds supplied by the liberality of Colonel Christopher Codrington, who had been first a fellow of the college, and afterwards governor of the island of Martinique. The quadrangle begun in 1716, but not finished till 1756, at an expense of 12,015l. 5s., leaving a surplus on donation, with which an estate, the rents of which are appropriated to the purchase of books, was bought at Lakenham, near Norwich. This noble object was 190 feet in length by 332 in breadth, except in the central recess where the breadth extends to 341 feet; the height is 40 feet, with a gallery surrounding three sides. The collection of books which it contains is the greatest in Oxford, and is continually increasing. The chapel preserves the exterior only of its ancient state; it underwent much disfigurement in the interior and after the Reformation, from the circumstance of the founder having directed that on certain occasions it should be decorated to public taste. The last alterations of the interior of this chapel took place about the beginning of the last century, and was accomplished by the combined taste and skill of Dr. Clarke, Sir James Thornhill, and Sir Christopher Wren. Mong's fine picture of the Noli me tangere was afterwards purchased as an altar-piece for it, at the price of 200 guineas.

Among the more eminent members of this college may be enumerated the celebrated Lincam, Leland, the antiquary, Sir Anthony Shirlely, Simon Dupa, bishop of Winchester, John Bale, general of the schismatics, Tindal, Dr. Thomas Cooper, Sir Christopher Wren, Young, the author of the Night Thoughts, Sir William Blackstone, and Reginald Heber the late bishop of Calcutta. (Wood's Colleges and Halls; 1st ed. by Guthe; Chalmers's Hist. of the Colleges; Univ. Calendar.)

ALLA, as used in Music, an Italian preposition, or the dative of the feminine article la, which, prefixed to certain words, signifies, or has the power of the phrase, in modern cases; all' alba, in the morning; all' alta capella, in the upper room; all' estro, in the manner of music; all' istante, in the ancient manner; all' instant, in the French style; all' inglesi, in the English style; &c. ALLA-BREVE, in Music, an Italian term, signifying a timepiece or time, to which the work is to be performed, or to which the whole work was lengthened. This is synonymous with Tempo di Capella, or time of church music, in which each bar, according to the practice of the old composers, contains one breve, or two semi-brevi, or their equivalents. Alla-Breve time is very rarely used in modern music. The fine figure in the phrase, in this respect, And with his stripes we are healed, is an example of the measure.

Allah is the Arabic name of the Supreme Being, which through the Koran has found its way into the languages of all nations who have embraced the Mohammedan religion. This wordSSC properly conveys the meaning of the Hebrew words Elohim and El, signifies a deity generally; the prefixed article Al- restricts the meaning, and Al-Allah signifies the True God, as opposed to the deities of the inhabitants of all countries. It is used both with and without a compunct as a proper name; Al-Malik, i.e. the Servant of God, Allah al-Malik (God is great) is the common battle-cry of the Mohammedans. The phrase from Allah or Isra'il (the Name of God) invaribly uttered by devout Mussulmans before the commencement of any undertaking, and before their mealt is also put at the beginning of their books.

Allahabad, a considerable province of Hindostan, lying between the 24th and 26th parallels of north latitude, is bounded on the north by Oude and Agra; on the east by Bahar; on the south by Gudawana; and on the west by Malwa.

This province is divided into eight districts: viz. Allahabad, Cawnpore, Benares, Mirzapour, Jumna, Rewah, Bundelkund, Canaad, and Manepoor. The length of the province from east to west is 270 miles, and its average breadth from north to south, about 120 miles.

Around Allahabad, in the year 1726, by the Sultan Mahmood of Ghuzn, who met with only partial success, and returned again to attack three years thereafter, but without obtaining a permanent conquest. The province fell afterwards under the dominion of the Emperor of Delhi, and in the present century it became an independent kingdom, of which Junper was the capital. Parthaking the lot of other Pathan districts, it subsequently came into possession of the Mogul emperors, and was formed into a distinct soubaib by the Mogul Akbar; it was at the same time, gave to the district the title which it now bears.

At the breaking up of the Mogul empire, the northern part of the province was seized by the Nabob of Oude. In 1772, the East India Company, and the British district under a treaty with the Soumbhur of Oude, and in 1816, the Company obtained from the same government the further cession of the city of Allahabad and the adjacent districts. In 1804, the south-eastern districts of the province were ceded to the British in exchange for territories in Guzerat and the Carnatic.

Allahabad is one of the most populous and productive provinces in the Indian empire. It furnishes damarc, muslin, cotton, sugar, opium, and saltpetre, besides an immense amount of cotton cloth. The greatest proportion of the population is Hindustani, only about one-eighth part professing the religion of Mohammed.

The principal rivers of the province are the Ganges, the Jumna, the Gomti, so called from its mining course, and the Caramamass, with their branches. Major Rennell supposes that the last named of these rivers is the Gomatis of Arrian (Indica, ch. 3). The streams are all in a northern part of the province: the country in their vicinity is extremely marshy and exposed to the visitation of hot winds. To the south-west the country is hilly. In this quarter, in the district of Bunder, the diamond mines of Pannah are situated, and are less valuable now than at any former time, a superior quality having been found during many years. (Rennell's Memoir of a Map of Hindostan; Hamilton's East India Gazetter.)

Allahabad, a judicial subdivision of the province of the same name, so far as the government is concerned, and the names of the inhabitants of the province, physicians and other writers, have no other distinction. This district is composed for the most part immediately surrounding the city of Allahabad; some other portions are, however, nearly one hundred miles distant from the capital. The soil, which in general consists of a sandy loam, is very fertile, and the grain principally sown, is said to amount on the average to fifteen

* According to the institutes of Allah, a stock should consist of twenty trees, a grove of twenty trees, a wood of twenty trees; but this street of Allahabad has probably never been cut into streets.
bushels to the English acre. To obtain this return, artificial irrigation is resorted to, and this forms the most laborious part of the cultivator's task. Barley, peas, and potatoes are raised, and received a great amount of the present cultivation of the district consists of indigo, cotton, and opium, which are largely exported. The last-mentioned of these articles was introduced into the district about eight years ago, after considerable opposition on the part of the ryot, who are averse to any kind of it. In 1871, this district contains 16,551,106 begahs (about 550,000 acres) of land in cultivation, the annual revenue from which amounts to 27,933,244 rupees; 11,997,77 Rupees of land are waste, and of these about one-third are said to be fit for cultivation.

The soil consists for the greater part of tracts made up of cotton cloths, which were manufactured in considerable quantities in all the villages, but the course of this traffic has been altered of late years, in consequence of the cheapness of English goods of that description, and this branch of native industry has much declined in consequence. The district enjoys a considerable transit trade, for which it is well fitted by its geographical position between the coast of Bengal and the province of Oude, and the Gorkha territory. The exportable produce of these districts is conveyed down the Ganges for shipment—salt, metals, woolen cloths, and drugs being the principal articles conveyed from the coast in return. (Hamilton's East India Gazetteer; Tennant's Indian Recreations; Parliamentary Papers.)

Allahabad, the capital of the district and province of Oude, is an academy established in 1780, situated on lat., 81° 50' E., at the junction of the rivers Ganges and Jumna. An extensive fortification is erected on the tongue of land where these streams unite, so as completely to command the navigation. This fort is built of polished freestone, has a ditch 24 yards deep, and six enfilading cannon are mounted on the sides next to the river; the land side is a perfectly regular fortification, of strength sufficient to resist all attacks of a native army, and to require a regular siege by European troops. The East India Company expended considerable sums for improving these fortifications.

The city of Allahabad is supposed to occupy the site of the ancient Palimbothra (Arrian, Indica; 19) but this is not certain. A great part of its present buildings are of modern date, and the Mosque, that of the Great Mogul, is the most ancient and most magnificent. In it are many splendid tombs belonging to the noble and illustrious families of the city. In the fort is a tomb containing the remains of a Persian poet. The plague of 1817 destroyed a large portion of the city. The most ancient part is the city of the Brahmins, which is called by them Bhat Prayag. This owes its pre-eminence to the belief that it is the point of junction of three rivers, the Ganges, the Jumna, and the Sereswati. It is true that the Kurmavati, which flows in the immediate neighbourhood, consisting of materials used in building and of the fragments of earthenware vessels, attests the former magnitude of the city. The fort is built by Brahmins to be the most holy of all the sacred confluences of rivers in Hindostan: it is called by them Bhat Prayag. This owes its pre-eminence to the belief that it is the point of junction of three rivers, the Ganges, the Jumna, and the Sereswati. It is true that the Kurmavati, which flows in the immediate neighbourhood, consisting of materials used in building and of the fragments of earthenware vessels, attests the former magnitude of the city.
Even an alen owes a local and temporary allegiance so long as he continues within the dominions of the king; and he may, therefore, be prosecuted and punished for treason.

An usurper, in the undisturbed possession of the crown, is entitled to allegiance; and, accordingly, our history furnishes an instance in which, although the son of Henry VI. was punished in the reign of his successor, even after an act of parliament had declared the former an usurper.

An oath of allegiance has, from the earliest period, been exacted from natural subjects of these realms; but its form has undergone some variations. In its initial form, the party promised 'to be true and faithful to the king and his heirs, and truth and faith to bear of life and limb and terrestrial honour, and not to know or bear of any ill or demerit against him, or believe any against him without their own knowledge.' The modern oath, enforced by statute since the revolution, is of a more simple form, and is expressed in more indefinite terms. 'I do sincerely promise and swear that I will be faithful and bare true allegiance to his majesty King William.'

It is not to be supposed that the alteration of the form has, in any degree, varied the nature of the subject's duty, which is, indeed, owing from him ancestrally to any oath, and although he may never, in fact, have been called upon to take the oath, it is important that the law of allegiance should maintain its integrity for the due performance of services inherently due from the subject to his birth, who, in like manner, entitled to the protection of the king before the latter has formally accepted the duties of sovereignty by taking the coronation oath.

By the ancient law of the land, every male subject of the age of twelve years (with certain exceptions) was bound to take the oath of allegiance when summoned to the inferior criminal courts, called Leet and Trouz; and a variety of statesmen, down to the present century, have expressly required it from public functionaries and other persons before they enter upon their respective duties, or practise in their several professions. By 1 George I. c. 13., two justices of the peace, or other commissioners appointed by the king, may order the oath to any person suspected of disaffection.

From a violation of allegiance results the highest offence known to the law of this country, viz., TREASON.

Those who wish to become more fully acquainted with this subject, and to obtain an insight into the distinctions between false, or allegiance, and simple false, or falsely by reason of tenure, may advantageously consult Hale's Pleas of the Crown, vol. i. p. 56., et seq., and Mr. Justice Johnson, ut supra.

ALLEGED, literally, a discourse which has another meaning than that which is directly expressed. Thus, the address of Menenius Agrippa to his fellow-citizens of Rome, as recorded by Livy, in which he described a rebellion of the inhabitants against the wealthy class of a state, is the figure of a conspiracy of all the other members of the human body against the stomach, was an allegory. An allegory, however, is not intended to deceive or perplex, in which respect it differs from an enigma or riddle.

Allegory has been a favourite mode of composition in all countries and ages. Sometimes it has been recommended by seeming to afford the only or the fittest available means of giving a lively or intelligible representation of certain subjects or notions. The poets of different nations, for example, have undertaken to lay down, in order to convey sufficiently vivid conceptions of the different virtues and vices, and other abstractions which they have wished to set before their readers. They have personified these notions, as it is termed; that is to say, they have figured them as if they were living beings invested with the forms and qualities naturally adapted to the character of each. Such pictures are allegories, and are to be found abundantly scattered over nearly all poetry. Some have even conceived that the whole mythology of pagan antiquity was an allegory; but the hypothesis is not favoured either by what we know generally of the birth and growth of superstition in the human mind, or by the earliest and simplest form in which these mystic fables have come down to us. Some of the critics of the Alexandrine school attempted to explain Homer allegorically. A slight examination of what remains of their miserable and feeble efforts will easily convince us for the loss of their labours. The reader who is curious may see a specimen of this allegorical interpretation in Vilielat's Scholia, (Ibid. v. 336.)

Of all poets who have dealt in allegories of this description, our own Spenser is the most famous and the greatest; no other has either produced so vast a number of these devised realities as Spenser committed upon the spirit of life and air of actual existence. A long allegory, it is commonly said, has been usually unsuccessful as such; and, in illustration of this assertion, the instance of the Fairy Queen has been often quoted, as that of a work which, with all its attractions in parts, is wanting as a whole. The plan of the general allegory upon which Spenser's poem is framed, is certainly in a remarkable degree complicated, cumbersome, and uninteresting; and if he had aimed at composing a more tale of romance, without setting himself with any design of being either moral or didactic, the achievements of Queen Elizabeth, both of which subjects he had des效 to illustrate, he would have doubtless done better, as well as saved himself much needless labour. But, as the other hand, nobody complains of fatigue in reading Swift's Gulliver's Travels, which is likewise a tolerably bad allegory. This, and other examples which might be quoted, seem to prove that, if the allegory be sufficiently simple and natural, it may be protracted, without becoming tiresome, to a considerable extent.

ALLEGRETTO, in Music, an Italian diminutive of Allegro (see ALLEGRO), neither so fast nor so brilliant in manner as the term allegro denotes, though rather quick, and moderately gay.

ALLEGRI (C. ANTONIO). [See Corri.]

ALLEGRO, in Music, an Italian adjective, signifying gay, spirited, and, by inference, quick in time.

Allegro is the fourth in order of the five classes into which musical movement is divided: e. g.

Adagio,
Largo,
Andante,
Allegro,
Presto.

See Adagio.

An Allegro is not understood to be as fast in vocal as in instrumental music. Its quickness is likewise modified by the number and value of the notes in a bar. Thus it is always more rapid, cattoris portius, in two-crotchet time than in four-crotchet time—i.e., in three-quarter time than in squat; and as the speed of this movement has many degrees of difference, other words are commonly added, more exactly to explain the composer's intention. This term is often found in the imperfect, the frequently barbarous, and the very unmeaning language, united almost inductively with it: for instance, the contradictory, and indeed ungrammatical, compound, allegro agitato, is not unusual. But one of the greatest musical geniuses of our day, or that ever lived, Beethoven, has, in his contempt for the real meaning of language, a very odd document, in his ninety-five opera, he directs the performance of a movement in the following words; —' Allegro assai vivace, ma serio.'—Very gay and lively, but seriously.

The word allegro is also used substantively; thus we say an Allegro of a Tuba, of Beethoven, &c. Some of its compounds are—

Allegro Agitato, in a hurried manner.
Allegro Assai, very quick.
Allegro Brillante, quick and brilliantly.
Allegro Moderato, moderately quick.
Allegro di Moto, (in motion), very quick.
Allegro Vivace (vivace, lively, brisk)—one of the various kinds of musical language, which is called allegro brillante.
Più Allegro, quicker, more quick.
Poco Allegro, rather (a little) quick.
ALLELUIA. [See Hallelujah.]

ALLEMANDE, in Music, a dance supposed to have derived its name from Germany; but the hypothesis is not favoured either by what we know generally of the birth and growth of superstition in the human mind, or by the earliest and simplest form in which these mystic fables have come down to us. Some of the critics of the Alexandrine school attempted to explain Homers allegorically. A slight examination of what remains of their miserable and feeble efforts will easily convince us for the loss of their labours. The reader who is curious may see a specimen of this allegorical interpretation in Vilielat's Scholia, (Ibid. v. 336.)
ALLEN, or ALIN, or ALYN, a river which rises in Denbighshire, and flows through Flintshire in North Wales, where it is joined by a noble and considerable passage for about a mile, it overflows a little above the town of Mold, and ultimately falls into the Dee.

ALLENTON, NORTH [See NORTHALLERTON.] A town, in the parish of All-Hallows, West Allerton, near Wakefield. It was inhabited in the reign of Elizabeth and James I. By his own account, he appears to have been born on the 1st of September, 1566. The event, according to Fuller in his Worthies, took place in Lombard-street, in the parish of All-Hallows, London, at the sign of the Pye, near Devonshire House. It is stated in Lysons's Environs of London, vol. i., that his father was Edward Allen of Wyllyn in Bucks, and that his mother was a daughter of James Townley, Esq. of Lancashire. He seems to have been a very early taken to the stage, being almost an adda; ' of singular genius, as he was twenty-six. His natural talents for the profession he had thus chosen were aided by personal advantages of a high order. Fuller says that he 'made any part, especially a majesty one, become him.' He seems, indeed, to have been looked upon as the first performer of that part of the stage, and his name is added to his epigrams, written in a highly encomiastic style, and concluding, 'others speak, but only thou dost act.

One of his most celebrated parts was the Jew of Malta, in Marlowe's play of that name. In his prologue to that play, Thomas Heywood speaks of Allen as having acquired, by his acting in it, the character of Peerless, ' a being man,' he adds,

According to Lyons, whose account differs from that of Oldys, held, in partnership with a person named Henslow, a bear-garden, upon the Bank-side, in Southwark; and this seems to have been his most profitable speculation. To this he added the office, which he purchased from Sir William Steward, of Chief Master, Ruler, and Overseer of all and singular his Majesty's games of bears, and bulls, and running on hedges, &c. The late Sir Francis Bourgeois, in 1810. For this noble collection of works of the old masters, a new gallery has been built, to which the public are admitted by tickets, which may be easily obtained. Dulwich College also received from Cartwright a large and curious collection of paintings, the.graders gave to Mr. Garrick in exchange for some modern publications. In the present library, the most curious relic is the original Diary of the founder, begun on the 23rd Sep-

...
tember, 1617, and continued to the same day in the year 1622; from this diary Mr. Lysons has printed copious ex-
tracts.

ALLGEMEINE ZEITUNG (i.e. Universal Gazette) is the name of one of the principal German periodicals; and a plan for the publication of it was conceived in 1794, by the well-
known bookseller, J. C. Cotta, of Tübingen, which invited Schiller to superintend the undertaking. Schiller declined the proposal, (in a letter, a lithographed fac-simile of which was appended to a recent edition of Schillers Werke,) and henceforth, the chief editor of the paper, till Huber, the son-in-law of Heyne, undertook the editorship.
The paper appeared under the name of Neueste Weltkunde, (i.e. Latest Intelligence about the World,) till the 8th of September, 1796, when, in consequence of a prohibition issued by the government, under which it was difficult to pursue the object, it assumed its present title. The Allgemeine Zeitung was published first at Tü-
bingen, afterwards at Stuttgart, and subsequently at Ulm. Owing to certain difficulties arising from the censorship in the Würtemberg dominions, Augsburg was chosen for its publication, while it still experiences, at the same time, the exacting but liberal policy of the Bavarian government. In allusion to its place of publication, the Allgemeine Zeitung is, in English and French newspapers, often called the Augsburg Gazette (Gazette d'Augsbourg). After Huber's death, in 1804, the subsequent management of the Allgemeine Zeitung was undertaken by Stegmann, who had till then been attached to the Prussian diplomatic service, and had occupied the post of councillor of legation at Turin. The Allgemeine Zeitung has corre-
spondents of considerable ability in every part of Europe, and publishes a great deal of important information; and the several German as well as foreign governments frequently avail themselves of it for the publication of semi-official articles. The supplements often contain literary news, especially brief reviews of works on politics, and historical sketches of foreign character. Notwithstanding its acknowledged excellence, the Allgemeine Zeitung is said to have but a limited sale: the number of copies sold was, in 1823, stated by some to be 5000, by others only 1500—2000. (See the German Real-
Enzyklopädie.)

ALLIANCE, THE HOLY, the name commonly given to the celebrated convention concluded at Paris on the 26th September, 1815, between the Emperors of Russia and Aus-
tria, and the King of Prussia. It is understood to have been proposed by the Emperor Alexander, and was signed by the three sovereigns with their own hands, without being countersigned by any minister. The document, which was first published by Alexander on Christmas day following, commenced by an announcement of the intention of the subject to conclude a treaty for the peace of the gospel; which they define to be that of justice, Christian charity, and peace. Then follow three articles, the first of which, after narrating the scriptural com-
mand to all men to consider one another as brethren, declares that he who shall refuse to make war on the柄 of these three contracting monarchs will remain united to each other by the bonds of a true and indissoluble fraternity, and that they will conduct themselves to their subjects and armies as the fathers of families; the second article can hardly be said to mean anything; and the third is mere form, an invitation to other powers to join the confederacy. When this treaty was communicated to the English court, a reply was returned to the effect, that the forms of our constitu-
tion did not permit the king formally to accede to it, but that as a power, it might be more inclined to act upon the principles which it seemed to involve. At this time many liberal politicians throughout Europe, especially in Germany, looked to the Holy Alliance with most sanguine expectations of its happy results. Its true object, however, was not long in beginning to show itself; and it at last became apparent, that the Christian and paternal intentions of its authors meant nothing else than simply a determina-
tion to assist one another in governing both their own dominions and as much of the rest of the world as they could, to the prejudice of all others. This alliance may be considered as having been first distinctly announ-
ced in a circular issued by the three powers on the 8th December, 1820, from Troppe, where they were then assembled in Congress. Its object, the means of putting down the revolu-
tion which had just taken place in France, which was addressed to the ministers and chargés d'affaires at the German and northern courts, drew from Lord Castle-
reagh, the then English minister for foreign affairs, a dispatch addressed to his majesty's missions at foreign courts, and dated the 19th January, 1821, in which it was

intimated, that this government could not acquiesce in the principles announced in the circular of the three sovereigns, and that the consequences of the inaction or compliance of their other allies could not be considered as having separated itself completely from the Holy Alliance; and since the death of the Emperor Alexander it may be difficult to say whether or not the convention so called is to be regarded as subsisting at all.

ALLIER, a river in France, called by the Romans Elvar, which, rising in the mountains of Margeride, near the place where these branch off from the more important chain of the Cevennes, flows, with some trifling bends, in a direction nearly N. by W. to its mouth, which is on the east of the heights of Forez and La Made, which separate it from the basin of the Loire; and on the west by the volcanic moun-
tains of Auvergne, the loftiest in central France. [See AUVERGNE.] Its broad but shallow stream winds through the rich district of Limagne, until, after a course of 121 miles, the junction of the Dore renders it navigable for a part of the year at least. From this junction it pursues its course until it falls into the Loire, a little below the town of Nevers, which is on the latter. Its whole course may be about 200 miles.

The river gives name to a department, which is bounded on the north by those of Cher, Nièvre, and Saône et Loire, and on the south by those of Creuse, Puy de Dôme, and Loire. The Allier, soon after its junction with the Dore, divides into two branches, the one to the north and the other to the south; while the Loire itself forms its north-eastern boundary; and the Cher, with the Canal of the Duke of Berry, which runs parallel to the Cher, and close by it, crosses its western extremity.

The department is without a great part of the ancient province of Bourbonnais, and its productions are much diversified. Its granite rocks are covered with a light but fertile soil; while the valleys contain rich alluvial dis-

tricts, which, however, owing to the backward state of agri-
culture, do not produce of art. Zeitungen. (Zeitungen.)

The vine is not cultivated to any great extent; but in the pastures many oxen are fatt-
tened, and the breed of horses is remarkable for strength. The woods are extensive, and furnish oak timber for ship-
building. The mers or ponds also are considerable, and the fish taken in them, or in the numerous streams, form an article of trade with Paris. Coal-pits, iron-mines, quarries, from which stone suited for mill-stones is obtained, and pits of clay, adapted for making porcelain, are the chief mineral productions. It is not without some trade, however, to the towns of Vichy, which is situated in a romantic country on the banks of the Allier, and to Bourbon L'Archambault, and Neris: the last, under the name of Aqueduc Neris, or Neri, was a watering-place in the time of the Romans; and the town is crossed by two bridges and other buildings, show it to have been a considerable place.

The department of Allier contains four arrondissements, those of Moulin, Montluçon, Gannat, and La Palisse. Its population in 1826 was 265,302. It is under the jurisdiction of the criminal court of Riom. This department is crossed by one of the great roads from Paris to Lyons.

The chief town is Moulin, on the banks of the Allier, [see MOULINS,] the population of which is 14,500. Gannat, on the Andelot, a branch of the Allier, 35 miles south of Montluçon, contains 3000 inhabitants; and Cusset, on the Allier, has nearly as many. As it is surrounded by rivers and other buildings, it has a population of 5000. Between these is St. Pourçain, the seat of a large cattle fair in the month of August. Mont-
luçon, near the baths of Neris, mentioned above, has 4500 inhabitants; Cusset, on the Allier, has nearly as many; and the town is crossed by two other buildings, show it to have been a considerable place.

Bourbon L'Archambault, also mentioned above, has about 3000, and La Palisse rather more than 2000. The depart-
ment is not particularly distinguished by any manufacture; the inhabitants of the village of Lurey Lozy in the commune of Sarailles, make a very considerable porcelain. The Allier, near Moulin, is made of glass, and at Souvigny, near Moulin, trade in soap and glass. At Moulin itself some cutlery is made, which is good in repoussé, especially the scissors, and there are some other articles made, for which see the article on that town.

ALLIGATOR, derived from the Latin ad and ligare, signifying to bind together, or unite. It is a rule in arith-
metic, by which the price of a mixture is found when the price of the ingredients is known. This is an application to
commercial arithmetic only, but the following questions, which fall under the rule, will show its scope better than any general definition.

How much wine at 50¢ a gallon, is to be mixed with 40 of 30¢ a gallon, in order that the mixture may be worth 35¢ a gallon?

If a cubic foot of copper weighs 8788 ounces, and of zinc 7200 ounces, in what proportions must copper and zinc be mixed, so that a cubic foot of the mixture may weigh 8000 ounces?

For the algebraist we may say, that all questions fall under the rule of alligation which involve the solution of such an equation as,

\[ ax + by + cz = \alpha (x + y + z) \]

in which \( \alpha \) must be intermediate between \( a, b, \) and \( c; \) which is indeterminate unless further relations between \( x, y, \) and \( z \) are given. Any person moderately skilled in algebra may reduce a question of alligation to an equation of this form; and several of those given in the books of arithmetic are practically useless, we shall here confine ourselves to an example of one process for the algebraical student, and two rules of the most simple cases for all other readers.

There are three ingredients, worth \( a, b, \) and \( c \) shillings per ounce: in what proportions must a mixture of \( m \) ounces be made, so as to be worth \( k \) shillings an ounce; it being understood that the quantities of the two first ingredients must be in the proportion of \( p : q \) to \( r \) and \( s \) to \( t \) : to find \( x, y \) and \( z \) of the second ; let \( px \) be the quantity of the first ingredient; then \( qx \) is that of the second; let \( yz \) be that of the third. Then by the question,

\[ px + qx + y = m \]

But \( px, qx, \) and \( y \) are quantities per ounce, cost \( apx, bqx, \) and \( cyz \) shillings; therefore the price of the whole is

\[ apx + bqx + cyz \]

which by the question is \( km \) shillings: hence,

\[ apx + bqx + cyz = km \]

and which of two equations, with two unknown quantities, can be solved by the rule of three method.

Rule I. Where the quantity of each ingredient, and its price, are given, to find the price per pound, gallon, or whatever it may be, of the mixture; multiply the quantity of each ingredient by its price, and add; then divide the sum of all these products by the sum of all the quantities in the ingredients.

Example. What is the worth per ounce of a mixture of 10 gallons of sugar at 10d. with 15 ounces at 11d. ?

25 ounces at 10d. is worth 25¥10d. 
15 " 11d. " 165d.  
40 (40 ) 415 (104¥4d).
40

15

Answer, 104¥4d. or 10d. very nearly.

Rule II. To find in what proportions \( \text{per cent.} \) the ingredients must be mixed, in order that the price per ounce, &c. of the mixture may be one which has been previously determined upon. To find the proportion of the \( \text{first} \) ingredient, take the difference of price between the mixture and the \( \text{second} \) ingredient, multiply by 100, and divide by the difference between the prices of the ingredients.

Example. I wish to know in what proportion wines at 45¢ and 70¢ a gallon are to be mixed, in order that the mixture may be worth 54¢ a gallon.

Price of the mixture 54¢.  
second ingredient 70¢.  
difference 15  
multiply 100

difference of price of ingredients 25) 1500 (60

150

0

There must, therefore, 60 per cent. of the first, and consequently, 40 per cent. of the second.

Instead of finding the proportions \( \text{per cent.} \), the proportion in which any other number must be divided, may be found by using that number of dozen, &c. instead of 100, and the three prices may be all multiplied by any number which will clear them of fractions.

Example. How must 60 gallons, worth 6¢ a gallon, be made of ingredients worth 1d. and 11d. per gallon?


\[
\begin{array}{ccc}
60 & 11 & 4 \\
26 & 7 & 44 \\
\end{array}
\]

difference of 26 and 44 18

80

difference of 7 and 44 37

\[ 1440 \ (38\frac{1}{2}) \]

111

330

296

34

Answer, 38¥1/2 gallons of the first, and 41¥3/4 of the second.

ALLIGATOR, a name, originally applied to all the Crocodiles of the Southern States of the North American Union, to a large species of reptile closely resembling the crocodile of Egypt, but which modern researches have shown to possess genetical characters differing from those of that animal. The word is supposed to be derived from the Bheruguese lagarto, signifying a lizard, generally; but it seems more probable, as, indeed, some of our older writers on the history and productions of America, affirm, that it is merely a modification of the Indian word legater, or allegater. According to its modern acceptance among zoologists, however, the name is no longer confined to the species most commonly found in Carolina, Louisiana, and the other Southern States of the Union; but it is applied generally to all the other American species which agree with it in its most prominent and individual characteristics, and which have been called camyans, jacarcs, &c., by the Spaniards, Portuguese, and Indians of South America. The characters which are proper to the alligators, and by which they are distinguished from the crocodiles of the Old World, are by no means of such importance with respect to the influence they may be reasonably supposed to have upon the habits and economy of these animals, as to warrant the formation of these reptiles into a distinct and separate genus: their manners and habits are precisely those of the crocodiles, and if they differ in certain minor details of structure, this difference should be considered not as a generic, but as a purely specific character. Baron Cuvier regarded the alligators not as a distinct genus, but merely as forming a subgenus of crocodiles differing from these animals in their habitat, but agreeing with them in all the essential parts of their structure and economy. Some later authors, however, have elevated his subdivisions into distinct and separate genera. Without subscribing to their views upon this subject, we shall so far adopt their plan as to describe the alligators and crocodiles in different articles.

M. Cuvier thus distinguishes the alligators from the true crocodiles: ' the former have the head less oblong than the latter; its length is to its breadth, measured at the articulations of the jaws, as 3 to 2; they are evidently not of the same length and size; there are at least nineteen, sometime even as many as twenty-two, on each side in the lower jaw, and nineteen or twenty in the upper. The front teeth of the under jaw pierce through the upper at a certain age, and the fourth from the front, which are the longest of all, enter into corresponding holes of the upper jaw, in which they are concealed when the mouth is closed. The hind legs and feet are round and neither fringed nor pencilled on the sides; the toes are not completely webbed, the connecting membrane only extending to their middle; and finally, the post-orbital holes of the cranium, so conspicuous in the true crocodiles, are very minute in the alligators, or even entirely wanting. The crocodiles, properly so called, on the contrary, have the head at least twice as long as it is broad; fifteen teeth on each side of the lower jaw, and nineteen on each side of the upper. The incisor or front teeth, as in the alligators, pierce through the upper jaw, at a certain age, but the fourth or largest of the lower jaw, instead of being received into a corresponding hole of the upper, passes into a notch on each side of it; and finally, the hind feet are bordered by a denticulated fringe, and the toes are completely united by a swimming membrane.

The characters here reported as peculiar to the alligators and crocodiles respectively, are evidently not of such structural importance to exert any very sensible influence upon their
general economy. Of the characters and organic modifications which they possess in common, the principal is the long taper tail, strongly compressed on the sides, and surmounted towards its origin with a double series of keel-shaped plates, forming two upright denticulated crests, which, gradually converging towards the middle of the tail, there unite and form a thick, straight line, to the extreme tip. This great size, its lateral compressed form, render the tail an organ of the utmost importance to the crocodiles: it is true that its weight materially impedes their motions on dry land, but it is a most powerful instrument of progression in the water, and may be considered as an aquatic habit, more than even their webbed feet. The latter character, indeed, is comparatively of little weight: the hind feet are only used to assist the progression in slow and gentle motion, but in all sudden and extensive moves, they lift the tail almost out of the water, and even when the animal is surprized on land, as we are assured by Adanson, it becomes a powerful weapon of offence. The compression of the tail is not peculiar among reptiles to crocodiles, though so powerfully influencing their habits; but the second character, which is common to the entire genus, viz., the palmed or semi-palmed hind feet, is exhibited by no other genus of reptiles, though all are more or less addicted to an aquatic life. This fact sufficiently demonstrates the same or a long-continued action of the palmar extremity exerted upon the economy of these animals in general. Still this character is by no means devoid of importance, though in proportion to its utility in aquatic progression, it renders the terrestrial motions of the animals extremely slow and awkward; but the effect is still shown in the length and weight of the tail at one end, and by the anatomical structure of the neck at the other. Each of the cervical vertebrae has on either side a species of false rib, and their meeting at the extremities along the whole neck, completely hinder the animal from turning its head to either side, and render all its movements stiff and constrained. Neither is the pace of the crocodiles on land so swift as to make them objects of fear to ordinary quadrupeds; a man can easily overstep them, and so sensitive an animal of the land is, as to be almost unequal to the motion of the fish. The teeth are broad and flat, and the flesh of each jaw with a single row of conical teeth, all of different sizes, and standing apart from one another; these are hollow within, and never vary in number, but are successively pushed out and replaced by others of larger dimensions, as their own diminish in size and shape. The tongue is short and fleshy, and attached to the under jaw throughout its whole extent. It is consequently incapable of protrusion, and from its small size and backward position seldom seen even when the animal opens its mouth, which circumstance occasions the belief of so universally prevalent among the ancients, that the crocodile was altogether deprived of this organ. The eyes are placed on the upper surface of the skull, are much approximated towards one another, and provided each with three distinct lids, and formed a long nasal tube, placed at the extremity of the muzzle; the ears are closed externally by two fleshy valves, and beneath the throat are two small pouches or glands, which open externally and contain a musky substance. Finally, the feet are provided with five toes, the second of which separates the foot, the toes being perfectly united by membranes: of these, the three interior alone on each foot are provided with claws, so that the two outer toes on the fore-feet, and one on the hind, are consequently clawless.

Such are the principal characters which influence the habits and economy of the crocodiles in general; those which more particularly distinguish the alligators or crocodiles of America from the kindred species of the Old World have been already adverted to, and it only now remains to relate the manners of the former sub-genus, and describe the distinctive forms of the different species which compose it. It is reported by Pliny, that the Egyptian crocodile retires to a secret cave or hiding-place, on the approach of winter, and spends three or four of the coldest months in a state of hibernation, and without taking any food: this phenomenon, usually called hybernation, is almost universal among reptiles and serpents, at least in temperate and high latitudes, and has been repeatedly observed with regard to the alligators. On the approach of the cold season these animals retire to the bottom of some stagnant pond, where they remain concealed and inactive till the return of spring. Travellers assure us that they are never to be found in running streams, but that they frequent in preference some stagnant pond or the creeks of rivers. Hence they are said in almost countless multitudes, for they are extremely numerous in the remote, unfrequented parts of South America, protruding their large flat heads through the leaves of the nymphaeum,posing as if they were more numerous than the vultures by their ceaseless search in almost countless multitudes, but that they are extremely active in search of their food. Their food consists principally of fish, and it is conjectured by some physiologists, that the musky fluid, secreted by the glands under the throat which have already mentioned, acts as a kind of bait to attract their prey. The alligators and crocodiles, indeed, as is known from the defence of their eggs or young; the females of these reptiles are reported to exhibit a much stronger degree of maternal affection for their offspring than usually belongs to their kind. They usually lay from fifty to sixty eggs in one place, and when they hatch, they immediately come to the surface of the pond, and correctness themselves. The crocodile lives to rear several broods of young; the alligator only a single brood. The Indians eat the flesh of the alligators, notwithstanding its strong musky flavour; and even Europeans, who have succeeded in overcoming their prejudices so far as to partake of it, report it to be both delicate and savoury. A single peculiarity of habit seems to distinguish the alligators from the real crocodiles: the former never leave the fresh water, whilst the latter are known to pass from the river to ocean, and even from one to another, or from islands, that are separated by a distance of several miles; but they have not been known to pass different islands, at considerable distances from one another; and so perfectly is this characteristic of the two subgenera, that the crocodile of the West Indian Isles differs from all the other American species, and exhibits only one of the evolutions which belong peculiarly to those of the Old World.

It was only at the commencement of the present century that the different species of alligators were properly distinguished from one another, or even that they were suspected to be specifically different from the crocodile of the Nile. This distinction is entirely due to the late Baron Cuvier, and since the publication of the first edition of his celebrated work, "Sur les Oiseaux des Isles," little further addition has been made to the subject. He enumerates three species of alligator, to which he has given the specific names: Alligator mississippiensis, Alligator schneideri, and Alligator sinensis. The former is stated to be the largest of the three, and is found in the South of the Mississippi, and the other southern parts of the United States, and of whose fierceness and voracity Bartram has related such extraordinary accounts. It grows according to Cuvier, to the length of fourteen or fifteen feet, being only one fourth of the entire length and half as broad at the articulation of the jaws as it is long. It appears to be more fierce and voracious than the South American species, often attacks men and quadrupeds whilst bathing or crossing the rivers, and is even said to devour the deer, or negro to all other food: probably because the slave is more exposed to its attacks than his master. The alligators prey chiefly by night; they assemble in vast numbers, bellowing the mouth of some retired creek into which they have pre-
fresh state: it is then dragged on shore and devoured at leisure. When about to lay, the female digs a deep hole in the sand, and deposits her eggs in layers, separated from one another by intervening strata of leaves and dry grass. It would appear that she lays only one batch of eggs during the sand season, though the better parts of the hollow upon which the report of La Borda is to be depended on, the cayman, or alligator of Surinam and Cayenne, lays at two or even three different periods of the year; but as each batch is said to consist of only twenty or twenty-five eggs, it is probable that the whole does not exceed the number usually assigned to the common alligator. The female of this latter species, it is said, never loses sight of her nest till the young are hatched, and for months afterwards affords them the most unwinking care and protection.

This species is frequently found up the Mississippi higher than the Red River. Messrs. Dunbar and Hunter encountered one in 32°30' N. lat., in the month of December, and during a more than usually severe season. In general, however, as we are assured by Catesby and La Condenniere, the alligator of North America buries himself under the mud, at the bottom of the swamps and marshes which he inhabits, as soon as the cold weather fairly sets in, and continues in a lethargic sleep till the return of spring. During the very severe frosts, sensation is so completely suspended, that the body of the animal may be cut into slices without dispelling his lethargy; yet it is never actually frozen, and he partial return of a few hours' bright sunshine is at all times sufficient to restore suspended animation. It is particularly in the rivers, lakes, and swamps of Florida, Georgia, South Carolina, and Louisiana, that the alligator reaches his greatest dimensions. Bartram found immense numbers of alligators and fish in a mineral spring near the Musquito River, in Florida, though the water, at its exit from the earth, was nearly at the boiling point, and strongly impregnated with copper and vitriol. The same traveller informs us, that the voice of the alligator resembles the bellowing of a bull.

Besides the characters common to all the American crocodiles, this species exhibits the following modifications, which distinguish it from others. The snout is flattened on its upper surface, and slightly turned upwards at the extremity; the sides of it are nearly parallel, and the nose forms a regular parabolic curve. It was this similarity to the head of a pike, which led Bourbon Castor to bestow upon the present species the name of Crocoddilus Lucius, or the pike-headed crocodile. The internal rim of the orbits is large and protuberant, but without being united by a transverse crest as in the Crocoddilus Sclerops or Speculated

**Alligator.** The external openings of the nostrils are separated by a long knob: the skull has two shallow, oblique, oval pits, in the bottom of which are two small holes. On the back of the neck are four principal plates, elevated in the centre into keel-shaped ridges; and in front and rear of these respectively, two smaller ones of similar form. The back exhibits eighteen transverse rows of similar plates, the first with only two crests or ridges, then two with four, afterwards three with six, then six with eight, then again two with six, and finally, the last four rows with four crests each. The ridges or crests on the body, are of nearly equal size; those of the tail are much larger, and amount to thirty-eight in all, nineteen before the union of the two lateral series, and as many afterwards. The colour is a deep, greenish-brown above, and light-yellow on the under surface of the body; the sides regularly marked with alternate bands of both these colours.

2. The Cayman, (Crocodile Palpebrosus, Cuv.) is at once distinguished from all other species by the bony structure of the eyebrows, which form large knobs of the size of a man's flat; and by the small extent of the membrane connecting the toes of the hind foot, which in prepared specimens can scarcely be recognized. The back of the neck is armed first with a range of four small scales, and afterwards with four transverse rows of plates, each consisting of two ridges, and immediately in contact with those of the back.

These consist of one row with two ridges, one with four, five with six, three with eight, two with six, and seven with four. The lateral, denticulated ridges of the tail contain ten plates each before their union, and fourteen after, but as these are much more liable to vary than the transverse plates of the neck and back, little dependence should be placed upon the numbers of them in any species of crocodile. The skull of this species shows not the slightest trace of those post-orbital perforations, which are so conspicuous in the crocodile of the Nile, and more or less developed in all the other species.

This is the common species of Surinam and Guiana: it is there called cayman, a word most probably of native origin, whilst the following species, which is likewise found in the same countries, though its more appropriate locality would appear to be Brazil and Buenos Ayres, is distinguished by the name of crocodile. Such at least is the report of Stedman and Von Sack, the only travellers who distinctly mention the present species. According to the account given by these travellers, the cayman does not attain so large a size as the other species, nor will he venture to attack a man on dry land, or even in the water, so long as he keeps his legs and arms in motion. The female deposits her eggs in a single layer, and after covering them slightly with sand, abandons them to the vivifying influence of the tropical sun, without taking any further charge either of them or of the young progeny.

3. The Crocoddilus Trachomatus of Schneider, is a species of crocodile, exhibiting all the peculiar characters which properly distinguish the alligators of America, and yet suspect to be of African origin. It is even so closely allied in form and general characters to the cayman, or eyebrowed alligator, that Baron Cuvier has described it as a mere variety of that species, though the fact of its widely different habitats, if, indeed, it can be depended on, as well
as the different arrangement of its cervical and dorsal plates, are arguments in favour of the contrary opinion. The principal distinction between this and the foregoing species consists in a ridge which rises in front of the orbits, and runs from ten to thirteen above this junction, and from nineteen to twenty-one after it. The colour of the animal is greenish brown above, marbled irregularly with different shades of green, and pale greenish yellow below. This species grows to the size of from fourteen to eighteen feet in length; the whole length is from eight to eight and a half times that of the head.

The Jacarés, according to Azara, are never known to attack men, or even dogs, in passing the rivers, unless it happen to be near the place where they have deposited their eggs; and even then, they are never known to prey upon the body, contenting themselves with the fish and water-fowl, which they find so plentiful in their own element. During the night they are exceedingly active, and always keep in the water, showing only their heads above the surface, but towards the middle of the day they come ashore to enjoy the heat of the sun; they then sleep profoundly, but always retreat to the water on being disturbed. The eggs are about the size of those of a goose; they are white, and much sought after by the free Indians, who also eat the flesh of the jacařé itself, which is strong, musky, and scarcely any juice. The female deposits her eggs in the sand in a single layer, and covers them with straw or leaves; few of them, however, escape the quick eye of the vulture, and even many of the young are preyed upon by birds. The full-grown males of their first appearance, in the hottest part of summer, are particularly fierce and ravenous, the marshes which they inhabit being then dried up, and their food difficult to obtain. This species appears to have nearly the same range as the southern species of the Continent, that is, the pike-headed crocodile, has to the north. According to Azara, it is never found beyond 32° of south latitude. Many interesting facts regarding the habits of this species are recorded in the narratives of Prince Maximilian, Spix and Martius, and other Brahmin travellers.

ALLIGHUR. A district of central India, in the province of Agra, situated between the rivers Ganges and Jamuna. This district is bounded on the north by Merut; on the south by the districts of Agra and Farrukhabad; on the east by the last-named district and Bareilly; and on the west by Agra and Delhi.

Alligur is estimated to contain a million and a half of acres, about one-third part of which is in cultivation, principally in the southern division of the district, which is very fertile. The northern portion, on the contrary, contains some of the most desolate tracts of land in India, in which little is to be seen but low, dark jungle.

In addition to the streams by which it is bounded on two sides, as already stated, the district is provided with numerous water-courses and rivulets, which, however, are dry during the greater part of the year.

The principal towns in the district are Alligur, Coel, Hatras, Moorsaun, and Anopashaer.

The fort of these places is the capital of the district. It is situated in 27° 56' N. lat., and 77° 59' E. long., a little more than fifty miles north from the City of Agra. Alligur was taken in 1803, from Dowlut Row Scindia, by the forces under Lord Lake, and is now the head-quarters of a civil and judicial establishment of the Company's government. Coel, which is properly the town, is distant about two miles south of Alligur, and it is here that the civil authorities principally reside; the two places are connected by a fine avenue of trees. Coel was formerly a station of great importance, and is so spoken of by Abd Fața in the Aqin-i-Abkai: it is still a large and busy town.

Hatras is a fortress of considerable strength, situated 31 miles north from the City of Agra. It was besieged in 1817, and taken by the British after a tremendous bombardment, which did great damage to the town. Hatras has become a place of much commercial activity.

Moorsaun, a town 29 miles north from the City of Agra, was, previous to 1817, the seat of an independent Zamindar, and the resort of tribes of professional robbers; evil thus occasioned had arrived at such a height that, at the time just mentioned, the place was attacked by the English and dismantled. The country round about Moorsaun is highly cultivated. Anopashaer is built on the west side of the Ganges, 68 miles E. S. E. of Delhi, in 28° 33' N. lat. 78° 8' E. long. (Hamilton's E. I. Gaz. Mills' History of British India; and Parliamentary Papers.)

ALLITERATION. This term is usually employed to signify the juxta-position, or frequent recurrence in com-
position, of words commencing with the same letter, when introduced with a view to its rhetorical effect. Byron's line in the concluding stanza of the second canto of Child Harold,

What is the secret of words that wait on age,

may be given as an example; and another instance occurs in the same stanza, in the line

'O hera divided, and o heros destroyed.

Churchill has at once ridiculed and exemplified the figure in his well-known verse

"And apt alliteration's artful aid,"

where every word begins with the same letter. Modern critics have detected numerous instances of alliteration both in the Latin and Greek poets. (See the dialogue entitled Actius, in the Latin Dialogues of Jonannes Jovianus Pontanus; and Harris's Philological Enquiries, part II. chap. iv.) Alliteration, however, has been most systematically used as an ornament of diction in the Celtic and Gothic dialects. Gerald of Wales, commonly called Giraldus Cambrensis, who lived in the twelfth century, tells us, in his Description of Wales, that in his day, both the English and Welsh were so fond of this figure of speech, which he calls Annotation, that they deemed no composition to be elegant, or other than rude and barbarous, which is not identically applicable to the same tendency is also said to have formed a striking peculiarity in the genius of the Irish language. (See Warcon's History of English Poetry, vol. ii. p. 148. Note d. Edition of 1834.) Dr. Percy, in an essay published in his Reliques of Ancient English Poetry. Even at the latest period of the Saxon alliterative verse down from the compositions of the old Icelandic poets. Nearly all the varieties of Runic verse, which were very numerous, appear to have depended for their prosodial character entirely upon alliteration. It was necessary that every word in a line should begin with the same letter; and this was all that was required to make good metre. According to the learned Wormius, there were no fewer than 135 kinds of Icelandic verse formed upon this principle, and without including rhyme, or correspondence of final syllables. If we may trust the following curious statement, given in a note by Mr. Park to the last edition by Price of Warton's History of English Poetry (vol. ii. p. 512.), the harmonies of alliterative verse were sometimes of the most complicated description, and such as were likely, one would suppose, to elude any except the most acute and most practised ears:—An objection has been taken to the antiquity of the Welsh poetry, from its supposed want of alliteration. But this is not the case: for the alliteration has not been perceived by those ignorant of its construction, which is to make it in the middle of words, and not at the beginning, as in this instance:

Yn las tr ci news sirian.

This information was imparted to Mr. Douce, by the ingenious Edward Williams, the Welsh bard. The remains which we possess of Saxon poetry exhibit frequent instances of this principle, as well as alliteration in the English dialects: but it certainly was not so systematically adhered to in that language, as in the compositions of the Icelandic bards. Mr. Tyrwhitt, indeed, in his essay on the Language and Versification of Chaucer, has gone so far as to say that he cannot discover any material distinction of the Saxon poetry from prose, except a greater pomp of diction, and a more stately kind of march. He thinks that we might attribute the introduction of the practice of alliteration to the Danes, if we suppose that the prose alliteration met with a reaction at the time of the Danish settlements in England.

Dr. Percy, in the essay "above referred to, has shown that poems continued to be written in English, the verse of which was mostly alliterative; or in which, at least, alliteration served as the substitute for rhyme, down to the commencement of the sixteenth century, and in the Scottish dialect, even to a later period. One of the compositions of this description which he cites is entitled Scottish Field, and is an account of a Diplomatic Representing a Piece of Tartuffe. Another is a Scottish poem composed by Dunbar, who lived till about the middle of the sixteenth century. It is preserved in the Mainland manuscript, and has since been published by Pinkerton. The practice of alliterative verse, as Percy remarked, seems to have been preserved in the north. In the Canterbury Tales, Chaucer makes his Parson, when asked for his story, reply, with a sneer at this antiquated habit of the northern versifiers of that day,

"—Truly well I am a Southern man;
I cannot rhyme, rem, or now.
And, God wot, rhyme bold I but little better.
And therefore, if you list, I will not grace
With a word of alliteration to this scope."

But the most famous poem in the English language, entirely composed in alliterative metre, is that entitled The Vision of Piers Plowman, written about the middle of the fourteenth century, and attributed to William or Robert Longland, a secular priest, and a fellow of Oriel College, Oxford. This is a long poem, consisting of one part or books, and composed throughout in verses, the cadence of which appears to be generally anapastic, but which are evidently designed to derive their chief metrical beauty from a certain artificial disposition, in each, of the words beginning by some similar sound. The poem has not been frequently printed; but the last and best edition is that published a few years ago by the late Rev. Thomas Dunham Whitaker.

So strongly had alliteration obtained possession of the English ear, that even for some time after the introduction of rhyme, it appears to have been still considered an important embellishment of verse. Some fragments of our old poetry exhibit both the consonance of final syllables, and a rigid observance of all the regularities of alliteration. Even in the latter cases, the alliterative metre was so systematic a necessity, it was still lavishly employed as an occasional ornament. Our popular ballad and lyrical poetry is full of such lines as those with which the Scotch song commences:

Merry may the maid be,
That marries the miller;
For fool day and fair day, &c. &c.

Down even to the present day, the use of alliteration to a considerable extent, has continued in the English version in its most polished form, and in the hands of some of our greatest poets. Nor has the employment of this artifice of style been confined to compositions in verse. In the early part of the seventeenth century it was carried to a greater excess by some of our prose writers, than it ever had been by our poets; grave discourses being elaborated, in which nearly all the words of each separate sentence commenced with the same letter. The longer this torture of the unfortunate sound could be protracted, the greater was the desire of eloquence to meet it at some distance.

Those who recognize rhyme, or what Milton calls the jingling sound of like endings, as one of the legitimate adjuncts of poetry, can hardly repudiate alliteration, which, after the same fashion, may be termed the jingle of like beginnings. The former can be judiciously employed, to make a communication a portion, at least, of the same sort of gratification which is conveyed by the former. The general principle upon which the pleasure we experience in both cases depends, is the similarity in the character of the sounds which are used. The latter is sometimes employed, to help in what may be called the setting of a brilliant thought; and, if it have the air of coming naturally, will frequently add to the effect of an otherwise high-sounding piece. Its aptitude to catch the ear is proved by its almost universal adoption in proverbs, traditional rhymes, and other brief sayings of wit or wisdom, which their mere natural vitality has kept alive without the aid of letters, and even in a vast number of cases, which frequently occur in the vernacular strength of our language. Mr. Price, the learned editor of the last edition of Warton, whose premature death is an irreparable loss to more than one department of our national literature, announced some years ago a volume which was

to contain, among other matters, an essay upon alliaceous
metre, together with the Aunter of Sir Gawaine, a romance
in alliaceous metre, from a MS. of the fourteenth century;
but this is only a translation. ANTIUM, however, has never
been cultivated in this country, it is a native, but it has from time immemorial been cultivated in
Egypt. Its varieties are not very numerous, considering
that it is almost exclusively increased by seed: the most
remarkable are the blood red, which is the most pungent;
the Star of Bethlehem, the hanging bulb, silver-atome,
which is the smallest, and the most fitted for pickling;
and the Portuguese and Tripoli, which are the largest and the most
delicate. In this country the bulbs do not generally arrive
at the large size of those imported from Portugal and Spain;
but skilful gardeners have, nevertheless, succeeded
in procuring them fully as fine. Their method has been to take
the small onions of a late-sown crop of the previous year, and
to plant them in rows in the beginning of April, laying them
on the surface of the soil, each surrounded with about a hand,
the bulbs being nearly dry, and all the time
that is usually lost in seed-sowing is thus avoided, and the
moment the bulbs push forth new roots, they find themselves
in the midst of an abundant store of food, which continues
to supply them with nutrition during the whole of the growing
season. But when the young bulbs are sufficiently
ripened, the bulbs are frequently disturbed by the hoar;
for the sake of exposing as much as possible the carbo-naceous
matter of the manure to the action of the atmosphere. This
process is continued while the bulbs remain brown, or yellow;
the bulbs are then allowed to ripen as usual. By these
means—the copious supply of food, the bulbs being on
the surface of the ground, and so enabled to develop without
impediment from the pressure of the soil, and the time
at which the young bulbs begin to develop
their own females have been often obtained in England fully equal in
every respect to those of Spain. For further information on
this subject, see the Transactions of the Hort. Soc. vol. i.,

Allium schenckii, the chive, is a little tufted plant,
with slender, cylindrical, taper-pointed, dark-green leaves;
its flowers are arranged in a small, compact, round head, and are of a purplish or pale violet colour; the bulbs are small,
long, and white, and grow in dense, matted tufts. It is a native of northern Europe, from England, and to this
country is found here and there in Great Britain. It is more employed
by the French for their cookery, than in this country. Being a perennial, and increasing rapidly by its roots, it
requires no attention that its bulbs may be taken up from time to time for the purpose of separating its bulbs, which
are afterwards replanted at short intervals. The leaves are
the part eaten, and are chopped as occasion requires.

Allium fistulosum, the Welsh onion, is a native of Siberia,
and is reddish in colour. It has gained its English name from
having been imported originally from Germany, with the
name Wäsch, or foreign, attached to it. It is a perennial,
and cultivated chiefly for the purpose of being sold in the
markets when very young, at which time its flavour is
delicate; its hardiness enables it when young to bear our
spring cold better than the common onion. It does not
form bulbs, and is known by its tall stem, thick hollow
leaves, and pale green very compact head of flowers. It does not appear to be an object of cultivation in any other
than northern countries.

Allium cepa, the shallot, a native of Asia Minor, is in
many respects similar to the chive, from which it is
known by its larger leaves, its smaller and more deeply-coloured
flowers, and by its stems having alternately three points on the filament. It more or less resembles A. fistulosum, but
is larger, and its chief use is for pickling the succeeding season, while the fine, fully-formed ones are
selected for the kitchen. Two very distinct varieties of this
useful plant are known, one of which is much larger and
more delicate than the other. To obtain the bulbs in the
early part of the season, the stem is used, as is the common practice, but merely placed on the surface of the soil, and treated as already recommended with regard
to onions. Upon this subject see an excellent paper by Mr.

Allium sativum, garlic, has been found wild in Sicily,
and some parts of Provence. Its stem is simple, erect,
and furnished with flat, narrow, pointed leaves; the flower-heads have usually a number of little bulbs lying among
the flowers, which are white or pinkish; the bulbs are re-
markable for the number of their leaves, which are finer
than those of the same species in any other part of the
world, and are scarcely distinguishable. It is a very delicate
plant itself dies away, but producing instead a cylindrical body
composed of the tender, colourless bases of the leaves, which
are rolled round each other in a compact manner. As
the excellence of the leek depends entirely upon the large size
of its bulb, the plants are cultivated with great care, and
are exclusively directed to that before all other considerations.
It has been found that no method is so successful as to sow
the seed early in a light and well-manured soil, and then, when
the young bulbs begin to develop, the little finger, or even sooner, to drop them into holes about
2½, or 3 inches wide, and 6 inches deep, in the bottom of
which some very fine manure has been deposited. By this
means the young plants are copiously supplied with
water, but instead of the food round their in the middle
are attracted upwards by the light, and are enabled to
develop themselves with rapidity from the absence of all
pressure from the surrounding earth; and when they fill up
the whole cavity of the hole, as they will in time, they then
begin to dry. As the sensible properties of the whole genus are evidently
much the same as those of the common onion, differing
chiefly in degree of concentration or diffusion, the chemical
analysis of the bulbs of this species may be considered illus-
tive of the composition of many of the Alliums, and to this
end. It has been found that the common onion is composed, 1st. of a white,
acid, volatile oil, held in solution sulphur which renders it fetid; 2. of a vegetale mutter analogous to glutcn;
3. of a good deal of uncrystallizable sugar; 4. of a great
quantity of volatile spirit, resembling acetic acid, or some
phorite acid, either free or combined with lime, acetic acid,
and a little citrate of lime, and 6. of vegetable fibre. It is to
the volatile oil that the irritating properties of the onion are
chiefly attributed to be owing, and they are consequently dissipated by heat.

ALLOA, a sea-port town and parish in the county of
Clackmannan, on the north side of the river Forth, twenty-
seven miles above Edinburgh, seven below Stirling by land,
and fourteen by sea. A fine bay, 14 miles long, between
the more modern part are some spacious streets, with
handsome houses and good shops. Within the last few years, elegant streets have been formed towards the river, and several neat villas built in the vicinity of the town. The new church, opened in 1819, is an elegant structure in the Gothic style of architecture, and adorned with a fine spire 200 feet high. The inhabitants were chiefly dependent on the trade of the port, but since the removal of the fort to their town. There are three meeting-houses of presbyterian dissenters, an independent meeting-house, and an episcopal chapel. The town has an assembly-room, in which the public courts of the county are held, some religious associations, and also the library.

The town and parish contain three large distilleries, five breweries, where ale is made which has long been in high repute, and two woolen manufactories, chiefly employed in the blanket and shawl trade. The glass-works are admirably situated at the foot of the hill, and the barrows, stone twenty-two to twenty-four at spring tides. Its vessels sail to every quarter of the globe; and their tonnage is from 7000 to 8000 tons, giving employment to 400 to 500 seamen.

The coasting trade is also very extensive, the quantities of coal also varied. In 1819, annually amounting to 60,000 tons: the trade in malt also is very great, as Ailsa supplies not only the distillers and brewers in the neighbourhood, but also distant markets.

There is a dry-dock next to the harbour, capable of receiving vessels of the largest tonnage. Forth, within two steam-boats, where the passage is rendered convenient at all times of the tide, by very complete piers, one on each bank, reaching down to low-water mark. In the river, which is here 300 yards broad, and separates into two branches, there are two low islands called tarches, one of which, nearest the town, is a valuable farm of 80 acres.

There is a daily communication by steam-boats with Edinburgh and all the towns on the Forth. Above Ailsa, to the N.E. is a dam called Gartmorn, made originally about the circumference of the city, and which encloses about 180 French acres, being probably the largest artificial lake in Scotland. From it issues a stream which turns several mills, and serves other important purposes, besides cleansing the harbour. In the immediate neighbourhood of Ailsa, in a field, near the town, a very fine, high, with walls eleven feet thick, once the residence of the Earls of Mar and the place where some of the princes of Scotland were educated. Some royal relics were consumed in a fire, which, about thirty years ago, destroyed the family mansion adjoining this field. The present Earl of Mar has taken up his residence in a temporary house near the tower, till a proper mansion be built.

Shawpark, a seat of the Earl of Mansfield, purchased from the late Earl of Caledon; and Tullibody-house, a seat of Lord Abercorn, are also in the parish. The population of the town in 1831 was 4417, of the town and parish, 6377. 56° 7' N. lat. 3° 46' W. long. from Greenwich.

ALLODIUM, or ALODIUM, property held in absolute dominion, without rendering any service, rent, fealty, or other imposition of liberty, and so far as it is subject to Feudum or Fief, (see FIEF, FEUDAL SYSTEM,) which means property, the use of which is bestowed by the proprietor upon another, on condition that the person to whom the gift is made shall perform certain services to the giver, upon failure of which the said part feudal property becomes irrecoverable, i.e. either they were surrendered by their owners, and received back as simple fiefs, where the owner was compelled to acknowledge himself the man or vassal of some lord, on the supposition of an original grant which had never been made, or as feoff of some feudal burden, where the submission was expressly grounded upon a compact of mutual defence. Similar changes took place in Italy and Germany, though not to the same extent. But in most of the
southern provinces of France, where the Roman army prevailed, the ancient tenure always subsisted, and lands were generally held and cultivated unless the contrary was shown. And in Germany, according to Du Cange ( gloss. bar. ) Baron six classes of men called super Barons held their lands allodially. With respect to England, it has always been a question whether the feudal system was established the same as that of German barons. This question will be more properly discussed under another head. (See Feudal System.) It is sufficient at present to observe, that at this day allodial possessions are unknown in England, all real property being held mediately or immediately of the king. The name of the nobleman who held property over property of this nature is a Fee, (Feodum,) or an estate in fief: a word which obviously implies a feudal relation. Hence it is, that when a man possessed of an estate in fief dies without heirs, and without having devise his property by will, the estate escheats to the lord, to whom it was holden, or, where there is no intermediate lord, to the king, a lord paramount. The term allodially is also sometimes applied to an estate inherited from an ancestor, as opposed to one which is acquired by any other means, (Spelman, Gloss. see Ato.)

ALLOWANCE, in commerce, a deduction from the gross weight of goods, agreed on between merchants, according to the customs of particular countries and ports, the chief of which is known by the name of tarre.

ALLOY. This word is employed to denote either a natural compound of two or more metals, except when mercury is one of them, and then the mixture is termed an amalgam. The natural alloys are far less important substances than those which are artificially produced: thus, arsenic is naturally combined with the following metals, antimony, bismuth, copper, iron, nickel, and silver; there is also found a native alloy of antimony and nickel, and of antimony, bismuth, copper, iron, nickel, and silver: others might be mentioned. But there is no instance of a native alloy, strictly speaking, in the regular application of this term, whereas the artificial alloys are one of the highest importance both for the uses of common life and for manufacturing purposes: by uniting different metals, compounds are formed which possess a combination of qualities not occurring in any of the metals. Thus, brass, the alloy of copper and zinc, is a very common alloy used; but gold, silver, tin, antimony and bismuth are generally alloyed; the first three, on account of their softness, and the latter two because they are extremely brittle. Gold is also alloyed by adding copper; copper is harded by adding silver.

The formation of alloys appears to depend upon the chemical affinity of the metals for each other; and in some instances it seems to be wanting, for no combination occurs; thus, tin and lead do not combine, and the mercury is not excluded. Various facts may be assigned for supplying the combination to be the result of chemical affinity. M. Boussingault (An. de. Ch. et de Ph. t. 34. p. 340) has described and analyzed six different native alloys of gold and silver, and he found in all cases that the metals were combined in definite proportions. The change of properties which metals undergo by combining, furnishes strong evidence of its arising from chemical affinity and action: thus, with respect to colour, copper, a reddish-metal, by union with zinc, which is a white metallic substance, changes its colour almost immediately. But the history of a mixed metal is never the mean of the temperature at which its constituents melt; and it is generally lower than that of the most fusible metal of the alloy.

All alloys form a brittle metal; the black plate; those made with white-core are in some cases ductile, in others brittle: when the proportions are nearly equal, there are as many alloys which are brittle as ductile: but when one of the metals is in excess, they are more commonly ductile. Iron combined with steel is ductile; but iron combined with a brittle metal exceeds the brittle one, the alloys are usually brittle. The density of alloys sometimes exceeds, and in other cases is less than, that which would result from calculation: the following alloys afford examples of increased and diminished density.

<table>
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<th>Increased</th>
<th>Diminished</th>
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<tr>
<td>Gold</td>
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<td>Gold</td>
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<td>Gold</td>
<td>cobalt</td>
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<td>Silver</td>
<td>tin</td>
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<td>Silver</td>
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<td>Silver</td>
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<td>Lead</td>
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<td>Lead</td>
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Not only are the properties of metals altered by combination, but different proportions of some metals produce very different alloys. Thus, by combining parts of copper with ten parts of tin, an alloy is obtained of greater density than the mean of the metals, and it is also harder and more fusible than the copper; it is slightly malleable when heated; it is not considered brittle, except when cooled, and plunged into cold water, it is very malleable: this compound is known by the name of bronze. If eighty parts of copper be combined with twenty parts of tin, the compound is the extremely sonorous one called bell metal: an alloy consisting of two-thirds copper and one-third tin, is susceptible of a very fine polish, and is used as speculum metal. It is curious to observe in these alloys, that in bronze, the density and hardness of the denser and harder metal are increased by combining with a lighter and softer one; while, as might be expected, the fusibility, though the fusibility of the two metals, is increased by combining with a more fusible one. In bell metal, the copper becomes more sonorous by combination with a metal which is less so; these changes are clear indications of chemical action.

Gold, though the natural alloys, considered as such, are not important bodies; the only one, indeed, that may be so reckoned, is the alloy of iron and nickel, constituting meteoric iron, and of which the knives of the Equinoxx appear to be made. The artificial metallic alloys are of the highest degree of utility: thus, gold is too soft a metal to be used either for the purposes of ornament or for utensils, it is therefore alloyed with copper; silver, though harder than gold, would also wear too quickly, unless mixed with copper; and copper is improved, both in hardness and fusibility, by combining with tin.

The following, among other useful alloys, will be treated of under their special names, viz., Bell metal, brass, bronze, gen. pot, prince, speculum, and tape metal, tine, and soled. Other alloys will be described in their composition-eoms under consideration.

ALLSPICE. [See Eugenia.]

ALLUVIAL. A name given to those accumulations of sand, earth, and loose stones or gravel brought down by rivers, when spread out to any extent, form what is called alluvial land. The word is derived from the Latin verb alluvias, signifying to wash upon; as the sea does upon the coasts, or a river upon its banks, and is chiefly used as a term in geology. Many geologists restrict the expression to such water-worn materials as have been deposited recently or within the historical age, and which do not include the remains of extinct species of organized bodies: but there are similar accumulations of transported materials, belonging to almost every geological period in the history of the earth, it is an unwarranted restriction to confine its use to the recent period only. There is, no doubt, this distinction between modern alluvia and those of ancient periods, that in the latter, besides the remains of extinct species of animals and plants, there is more frequently a consolidation into stone, by these materials. The formation of water-worn materials some geologists apply the name diluvium, which is objectionable, because it expresses, not a particular state of the materials, but a theory of their formation; that is, that new materials by a deluge—some indeed go so far as to assert that they were accumulated by the Mosaic flood. The word alluvium might be conve-
ently used as a general term, and we might say ancient alluvium and modern alluvium, as the French geologists say terres de transport and terres modernes. We might go farther, and say secondary and tertiary alluvium, and the alluvia of particular groups of strata.

In treating of this subject we have to consider three operations: 1. the disintegration and decay of the superior crust, which is brought about by the action of meteoric agents, of tides, currents, and streams of running water; 2. the transportation of the loosened materials by streams and currents; and 3. the deposition of the matter at the bottom of rivers, lakes, estuaries, and the ocean. The surface of the earth is constantly undergoing disintegration and decay, especially in areas containing large classes of agents, viz., the meteoric, the aqueous, and the igneous. Under the first of these classes are comprehended, the air of the atmosphere, the vicissitudes of heat and cold, moisture and wind, light, and the dilating and contracting powers of expansion and contraction between the particles of the stone, and induce a tendency to disintegration. This separation of the parts is very much accelerated by those sudden expansions and contractions which are occasioned by vicissitudes of temperature, and especially during freezing. Carbonic acid and water also are absorbed by rocks in considerable quantity; and the effect of these combinations of gases is a decomposition of the rock, and the liberation of the cations sometimes give more marked proofs of their destructive power, when lightning shivers a pinnacle of rock, or when a mass of water, enclosed in a cleft and converted into ice, rends, by its great expansive force, vast blocks of the earth's crust. When the agents of decay have undermined the fragments and separated them, they are transported through the streams into the sea. The force of water, when directed against any obstacle in its course, is very considerable, even by its own weight alone, especially if it be flowing over a highly-inclined surface, but its destructive power is greatly augmented if it be loaded with sand and gravel. In floods, very considerable blocks of shattered rock are carried by the river, and least deformities are transported to the sea: thus, a solid body which once formed a part of a mountain-top among the Andes, after being swept along for thousands of miles through the bed of a river into the sea, is deposited off the coast of Peru, at the bottom of the Gulf of Mexico, while the fragment with which it was once united may be carried far into the depths of the Pacific.

To this assertion of the constant waste of the land, and the conclusions which are drawn from it, it is difficult to add much. We can hardly discover any change in the shapes and altitudes of mountains, that the forms of many lands have continued unaltered since the earliest records, and that even productions of human art exposed to the action of the water have undergone no perceptible decay. No doubt the process is slow, if compared with the progress of events in which the human race has had concern, but no one will deny that rivers are loaded during every flood with solid matter; and, as the matter so suspended can only be derived from the land, it necessarily follows that a constant change of the processes must be going on over the whole face of the earth, to which the rocks are not protected by a covering of turf from the action of the destructive agents. Of the rapidity of this waste we have no means of judging, and any attempt to express our conjectures by figures would be little better than an idle speculation. All we know is that the rapidity of the disintegration is almost within our own time that any accurate measurements of heights have been made; and as two estimates of the same mountain, made with all the accuracy of which our instruments are capable, often give a difference of from four to seven feet, we have no means of forming an accurate idea of the progress of disintegration, except by the testimony of ancient writers, by which we may be led to infer that the mountains of the earth have been lowered, by the decay of their topography, by the action of the water, at the rate of several feet in a century.

To the disintegration of the land we must add that caused by the age of the surface upon which it stands. If the water has worn away at a certain foot per second, the surface of the earth will be changed more rapidly than the rocks beneath. The process, however, is not rapid. The surface of the earth is made up of loose stones of the size of an egg. The flood occasioned by the bursting of the barrier of a lake in the valley of Bagnes near Martigny, in the Vallis, moved at first with the tremendous velocity of thirty-three feet per second, afterwards diminishing to eighteen and twelve, and at the end of its course, when the water reached the Lake of Geneva, it was still running at the rate of six feet per second. From the barrier to this point, the fall is 1417 feet, the
distance is forty-five miles, and the mass of water passed over this space in five hours and a half. It swept along houses, bridges, and trees; masses of rock equal in dimensions to houses, which it tore out of an ancient alluvial soil, were carried a quarter of a mile down the valley. A flood, that inundated the island of Scotland, and furnished good examples of the power of running water to transport large blocks of stone. On the river Nairn, a fragment of sandstone rock, 14 feet long, by 3 feet wide and 1 foot thick, was carried above 200 yards down the river. The river Don formerly has carried stones of 200 or 500 tons weight, many of them from 200 to 500 pounds weight, up an inclined plane, rising 6 feet in 8 or 10 yards, and left them in a rectangular heap, about 3 feet deep, on a flat ground. The small rivulet, called the College, in Northumberland, swollen by a flood in August, 1827, carried several masses of stone, weighing from a half to three quarters of a ton, 2 miles down its course; a large block, weighing nearly 2 tons, was transported to the distance of a quarter of a mile.

It thus appears that the instruments of waste employed by Nature are far more powerful in their effects than is generally supposed. It is also evident that such powers, unremittingly exerted, must, after a long period, cause changes in the configuration of the earth's surface, and we see each year effects which point out continual changes which are produced by the working of this powerful machinery.

The cause of the formation of valleys is a subject of great controversy among geologists. Some ascribe their formation to extraordinary floods, waves, or deluges, which in their submergence swept away the land surface, to the dislocation of those natural agents, of whose existence and power we have had experience. It may fairly be presumed that, when the continents were raised out of the sea, their surfaces did not present a uniform plain, but were broken by numerous inequalities and that theddlev themselves were traversed by numerous fissures, one of the effects of the power by which they were raised. The first rains that fell, and the first springs which burst forth, would necessarily collect in the lowest levels, and thus the direction of the greatest stream would be determined; and may also happen that other chief—depressions at a higher level —would communicate with this main channel. But that every such great depression would have a direct communication with the sea, and that such a combination of subordinate valleys as compose a river system, could have been formed by the breaking up of the earth's crust, either by elevation or subsidence, can hardly, we think, be maintained by any one. A river-course, or system, may be no more simply compared to a picture of a great tree, whose branches and limbs have been hacked away as they recede from the stem. The great trunk of the river is divided into many branches, which spring from it at various distances from one another; and these again are scarred by an infinity of subordinate channels, each diminishing in size as it increases in distance from the principal trunk,—a regular communication being kept up between every point and the line of greatest depression;—forming together, a system of valleys communicating with one another, and having such a nice adjustment of their declivities, that none of them join the principal valley either on too high or too low a level. Some idea may be formed of the extent to which the surface of the land has thus been furrowed by means of the subordinate streams that feed a great river, when we observe the vast extent of those which, flowing from the Tyrolean Alps and passing by Munich, joins the Danube some miles above Passau. This river is fed on its right bank by 433 streams, on its left by 809; the former joining the main bed by 59 channels, the latter by 155. The Danube is one of the most important branches of the Danube, and holds only a fourth rank among them; and even the Danube is a river of the third magnitude in the physical history of the earth.

The effect of the great floods of the river is to wear a channel in the hardest rocks in almost every country, and even in a remarkably short time. A stream of lava, poured out from "Atua in 1863, flowed across the bed of the Simeto, the largest river in Sicily, which flows along the base of the mountains and falls into the sea near Naxos. This stream has now cut a passage through the hard rock, which is only a little less compact than basalt, to the depth of from 40 to 50 feet, and from 50 to several hundred feet wide.

The Neruddh, a river of Hindostan, has worn a channel in a basaltic rock to the depth of 160 feet. Massara, Sgodwick, and Murchison state that, in the enormous masses of horizontal, coarse conglomerate, found in many of the valleys of the Eastern Alps, rivers have often scooped out gorges to the depth of 600 or 700 feet; and that in the valley of the Inn, near Innsbruck, and in that of the Drave, between Legden and Maribor, there are splendid examples of these phenomena.

The rock, over which the water of the Niagara is precipitated at its celebrated Falls, is undergoing a daily waste; so that the cataract has receded nearly 50 yards in the last year. The Danube was in 1827, 150 feet deep, and 160 yards wide, for a distance of 7 miles, where it emerges into a plain; and this channel has evidently been formed by the same operation as that which is now in progress. The waste is accelerated by the action of the water on the banks and bottom of the stream, which, being washed away leaves the superincumbent limestone strata unsupported, when they fall down in huge masses. A similar effect is produced, even in mountains of considerable elevation, when the superficial water or underground springs, obtain access to an inferior bed of soft marls, and, gradually wash it away. This took place in 1806 at the Rossberg, near the lake of Zug, in Switzerland, a mountain more than 5,000 feet above the level of the sea. The stony debris which, by these effects, was thrown out, formed a cleft of 45°, and thus slid down, covering the valley below with an enormous heap of blocks of stone and earth, and overwhelming several villages, in which above 600 persons perished.

There are many valleys and narrow defiles which, on account of their size, cannot form a cleft, yet, when they are enclosed, and the levels of the adjoining country, could not have been formed by the action of the waters now passing through them, however much we may suppose them to have been swollen by floods. In such cases, elevations and subsidence, of the land, brought about by the action of the terraneous agents which give rise to earthquakes, must be looked to as the most rational explanation. But there is, perhaps, not one of these which has not been subsequently modified in a considerable degree by the action of running water operating upon a later period of decay.

The wearing and transporting powers of rivers depend upon the volume of water, the quantity and size of the solid matter suspended, and the velocity with which it moves. A river generally runs with greatest rapidity in the higher parts of its course, where it indeed it often consists of a series of torrents and cataracts for many miles, but it has not yet acquired its full destructive force, because the mass of water is still comparatively small, nor has it yet become loaded with solid matter. In the lower part of its course, long bored by its course, it joins the sea in a shape in which it has been worn away by the weight of the terraneous agents which give rise to earthquakes, and there its velocity becomes greatly retarded. The Senegal in Africa does not, according to Adamson, fall more than two feet and a half from Podor to the sea, a distance of sixty leagues. The river has, from the diminution of its velocity, and by the consequent inability of the stream to drag its heavy artillery along with it. It is, therefore, in the middle part of its course that a river commutes the greatest waste—after it has acquired a considerable volume, has become loaded with solid matter, and, from the inclination of the ground, still possesses power to wield its more mighty weapons of destruction.

The increase of the volume of water in rivers during the flood seasons is often prodigious. The bed of the Mississippi, at Natchez, is 2,000 feet above New Orleans, measuring along the course of the river, scarcely exceeds a mile in breadth when the water is low, whereas in the flood season the mass of waters is nearly thirty miles wide. The Orono, at St. Thomas', 200 miles from its embouchure, and which in the last few inches above New Orleans, is only 200 yards wide, increases to 200 yards wide, by which it becomes inundated by the weight of the great volume of water impinging upon certain parts. This will be better understood by the annexed diagram.
When the river, in its obscure course at the entrance of the plain, strikes against the bank, it speedily forms a steep or vertical cliff which turns off the water in its downward course into an opposite direction. The river now falls with its whole force against the point c, which, in its turn, becomes the water tower to the point e; and in this manner the process is repeated, at short intervals, producing a series of angular and re-entrant angles.

The diagram represents a river after the process of erosion has considerably advanced; at first the course would be much less tortuous, the height of the rock, both banks are usually steep; but if the ground consist of loose materials, the spaces between the precipitate parts of the banks—that is, between the salient angles—consist of flat, fertile, alluvial land, with a gravelly bottom, the gradual creation of the stream. Sometimes, however, the river channel so tortuous that at n and m, may be within a few hundred yards of each other, and yet, following the line of the stream, they may be some miles asunder. In this case, the narrow neck of land is acted upon doubly; for the force of the water is directed against it on each side. In this island is preserved, and the river either flows entirely through the new channel, or, dividing, forms the land A into an island.

Such tortuous courses, when they are cut through solid rock, are often called by the geographers the Valley of the Monastery. Those springs six to twenty, six hundred feet high, are among the strongest proofs of the destructive power of water, for no sudden deluge, however powerful, could have scooped out such a trough; and a cliff of such a nature should be occasioned by and distinguished from, and, gravelly alluvial land, is more sudden, and therefore more striking, instances of the waste of the land occur, where a river flows through a lake, and by its wasting action causes a breaking down of the barrier. We have already alluded to the bursting of a dam in the valley of the Mississippi, where the flood was produced by the melting of ice which, falling in successive seasons from neighbouring glaciers, had formed so continuous a mass as to dam up the water of a stream which flowed in the bottom of the valley. If the barrier of a lake be broken down from the force of the water of the lower end, and gradually wash it away, the superincumbent rock, thus undermined, suddenly breaks down, and devastation and ruin overwhelm the country below. Thus, as such a river in those countries as the Po, having taken its course through the plain of the Po valley, and the level country swept away the remaining mound of the lower lake in a moment, and, following the course of the insignificant stream which flowed out of the lower lake, rushed along a rapid descent of five miles, and then strewed its spoils over a flat country. Through all its course it has followed out for itself a path from 300 to 600 feet in width, and from twenty to sixty feet in depth, so that every trace of the original bed of the river disappeared, which was left to choose for itself a new bed, many feet below the old one, in the bottom of the valley. Such a barrier, however, is a work of the long series of years in the course of the force of its as to move a rock (estimated at 100 tons in weight) several rods from its bed. Thirteen years afterwards, Mr. Dwight found the former bottom of the lake dry; the original water-level marked by strong lines on the sides of the river, a counterpart of the celebrated signs of a dry trough of Glen Roy, in Scotland; and the small streamlet which fed the lakes flowing as before, and little more than a yard in breadth.

The distance to which the detached fragments are carried varies according to the volume of water, and the nature of the ground over which it flows. The torrents from the south-western Alps, rushing over a steep uninterupted slope, transport large blocks to the sea; but a river that runs through a long length of level country deposits the grosser matter in the upper part of its course, and carries to its mouth only that which is more easily held in suspension. The larger stones, after being detached from their parent rock, have therefore to undergo an intermediate process of abrasion, by being rubbed against each other in the bed of the stream before their particles are finally committed to the deep. If a river pass through a lake in its course, the solid matter will be deposited in that trough until it has filled it up; and if the lake be very large, even the larger particles will carry on the water's course, and flow out clear from the other extremity. The Lake of Geneva affords a remarkable instance of this process; for the Rhone, where it enters, is extremely turbid; but at Geneva, where it leaves the lake, it is beautifully transparent. In the upper end the lake is a tract of water eight miles in length, which has been gradually formed by the deposits from the river; and some measure of its progress is obtained by the change in the situation of the town of Port Valls, which is once at the water's edge, but, in the course of about 600 years, has been carried away by the Rhone. There is every reason to believe that this valley was at one time the site of a lake far greater than that of Geneva, and probably quite as deep.

The Rhine, in the higher part of its course, is filling up the Lake of Constance, where it forms a considerable sheet of alluvial land has been formed; and after issuing pure from the lower end, it appears from the observations of Hammer to have carried on the work of destruction so powerfully in the comparatively short distance between the Lake of Constance and the Rhine, that it has formed the island of Kohlerne. It is a large river, and some considerable torrents have supplied materials sufficient to fill up several lakes between Schaffhausen and Strasburg, besides the great lake below Strasburg already spoken of. There are numerous instances of this gradual filling up of lakes, especially in the courses of the greater rivers, as in the Danube between Ulim and Neuburg above Vienna, and most eminently so in the case of the St. Lawrence. Simond states, that the river Litun, in Switzerland, is perpetually filling up its old channel, and overflowing into a new one, in consequence of the mass of earth detached from the banks, detached from the bed of the river, and washed down from the heights of the surrounding forests—tins; and that the level of the Lake of Wallerstadt has been actually raised ten feet in the last sixty years by this accumulation. If the river does not meet with lakes in its course, and flows over a great extent of country having a looser soil, or worse rocks; or where the bed of the river is in a bed of hard rock, it is debouch into a half island. Other torrents, on both sides of the lake, likewise pour in large quantities of solid matter; and thus, although, from its great depth, a long period must elapse if the present order of nature remains undisturbed, the Leman Lake will be converted into land.

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In a mountainous country where the land rises rapidly from the plain, the river rises up on all sides, bringing up all the contents into the sea. If the neighbouring sea be deep, and the tides be strong, an estuary or inlet is formed at the mouth of the river—that is, the sea forms a deep indentation into the land, of a triangular shape, forming what Kennell and other geographers have fancifully called a 'negative delta.' If, on the other hand, a low shelving shore, and the absence of strong tidal currents favour the gradual and tranquil deposit of the solid matter brought down by the river, an
extensive level of alluvial land is formed. In this case the main river, at a distant point inland, often divides itself into two streams, which, gradually diverging until they reach the sea, inclose a triangular space of land having the form of the Greek alphabet theta, and hence called a delta. The mass of water does not, however, long continue divided into two streams only, the process of separation is repeated several times, and thus the delta is traversed by several channels, and the great river empties itself into the sea by many mouths; the formation of the delta, and the inspection of the Nile and Ganges in any map of Egypt or Hindostan on a tolerably large scale. In this way a delta is formed at the mouths of the Rhine, Rhone, Po, Danube, Volga, Nile, Indus, Ganges, Orinoco, and many others. The whole of the delta generally, as a rule, is not always, corresponds to the volume of the waters by which it has been created. The head of that of the Rhine is about ninety miles distant from the general line of seacoast of Holland; and although the name of the main river is at last lost by the subdivision of its waters and the junction of other rivers, we include within the Rhine delta the whole of the low land from the neighbourhood of Calais to the north-eastern shores of the Zuyder Zee, which makes the boundary nearly 200 miles long. The head of the delta of the Ganges is 220 miles from the sea, its base is 200 miles long, including the space occupied by the two great arms of the Ganges which bound it on either side. The tract in the lower part of this delta, called the Sunder-bend, is infested by tigers and alligators, according to Rennell, equal in extent to the principality of Wales. The whole of a district within a delta, as well as much above and on each side of it, is, therefore, an encroachment of the land upon the sea, and in many rivers the delta is in a state of constant progress of advance; as, for example, the city of Rovenna, formerly a seaport of the Adriatic, is now four miles inland. There are causes, however, which often prevent the further increase of a delta after it has advanced a certain length: such is the case with the delta of the Nile, it does not advance with the rapidity that might be expected from the quantity of matter brought down by the river. [See Nile.]

Great as is the amount of new land thus formed, it is but insignificant in comparison with the quantity of solid matter carried down by rivers and deposited in the depths of the sea. It is impossible to form any estimate of this upon which reliance can be placed, because no accurate observations have been made to supply the information; and the thing like a satisfactory conclusion, it would be necessary to have a vertical section of the river at a given point, obtained by numerous soundings, so as to get the profile of the bed, and by observations at different seasons, to get the mean velocity. This also has to be repeated at intervals of years, throughout the year, to ascertain the mean velocity, and the volume of solid matter contained in a given bulk of the water. Such experiments conducted with accuracy have not yet been made, as far as we are aware, upon any great river, as far as the whole of Europe, and through this more than form a conjecture; but the phenomena upon which it is founded show that the annual amount of solid matter carried away from the land must be enormous. The quantity of mud and sand poured by the Ganges into the Bay of Bengal is so great, in the flood season, that the sea recovers its transparency only at the distance of sixty miles from the coast. Mr. Lyell, in his Principles of Geology, makes a calculation (founded upon the computations of Major Rennell) as to the mean quantity of water discharged by the Ganges into the sea, but this does not show that disposing the water to contain one hundredth part of solid matter, a mass equal in bulk to the greatest of the Pyramids of Egypt is brought down by the Ganges every day. The sea is coloured for many leagues from the mouths of the Orinoco, and the solid contents swept by ocean currents through the Gulf of Paria, after being partly deposited on the shores of Guiana and the island of Trinidad, are carried into the Caribbean Sea and Gulf of Mexico. By the observations of Captain Sabine, it appears that the muddy waters of the Amazon river may be distinguished 300 miles from its mouth. The great basin of the Amazon, which is drained by that mightiest of rivers and its vast and countless tributaries, embraces an area, according to Humboldt, only one-third less than the whole of Europe, and through the main stream flows for nearly 3400 miles. The river, at the point where its waters unite with those of the Atlantic, is according to the same illustrious traveller forty miles broad.

If a river loaded with sand encounters a marine current at an angle which the ebb flows frequently is to throw up a great sand-bank or bar, often to the detriment of the navigation in the adjoining sea, and sometimes to the entire destruction of a harbour. If such sand-banks be thrown up opposite to the delta of a great river, they accelerate its formation, for the matter carried away, in place of being far out to sea, is deposited in the intermediate space, and the sand-bank in time becomes united to the delta.

An extensive waste of the land is in constant progress along every line of coast which presents an abrupt face to the sea. The amount and rapidity of that waste depend upon a variety of circumstances; the nature of the rocks of which the cliffs are composed, according as they are capable of long resistance, or are easily acted upon by the weather and the sea; the force of the tides and currents, the frequency or less frequency of storms; all these accelerate or retard the destructive force of the ocean. In this case also, as well as in the action of running water on the land, the force is greatly augmented when the water is charged with solid matter. The violent surge of a tempest dashes against a cliff, detaches large blocks, and sweeps them away; but the next returning wave hurls them back again against the cliff, and thus a powerful artillery is supplied by the land for its own destruction. When we look upon a map of the coast of the United States, we shall not fail to see the whole of the land bounded by the sea, or at least, all those instances of extensive waste, especially within a comparatively recent period, may put the matter in a clearer point of view to those who are not familiar with such considerations.

The east and south coasts of Great Britain, from the nature of the rocks of which they are composed, and from the violent storms to which they are exposed, are extremely subject to decay. The Shetland and Orkney Islands are laid open to the whole violence of the waves of the Atlantic, and the ocean currents running through the strait between the mainland and the islands. The waves and tides of the ocean have eroded away the land; and the narrow neck of land is separated from the mainland by a narrow channel. The land on the mainland is also subject to decay; and in many parts of it the land is being reduced to a state of chaos, or is being carried away by the sea, or by the wind, which is also acting a detention of the water. In this case even rocks of the hardest composition have been unable to withstand the force with which they have been assailed. Islands have been wholly destroyed, and the remains of others rise like the ruins of a Palace. In the case of the modern island, we can not say how these have been given by Dr. Hibbert in his description of the Shetland Islands; and the following is a copy of one of the most striking.

In the year 1795, a village on the coast of Kincardineshire was swept away by a storm in one night, and the sea pene-
trated 150 yards inland, where it has maintained its ground ever since. Almost the whole coast of Yorkshire, from the
Toes to the Humber, is in a state of constant decay, especially between Flamborough Head and the Spurn Point; the rate of encroachment at Othorpe being at present about four yards in a year. An inn at Sherrington, on the Norfolk coast, built in 1803, seven yards from the sea, Folkestone, was separated only by a small garden from the edge of the cliff. There is now a depth of water sufficient to float a frigate at one point in the harbour of that place, where, only half a century ago, there stood a cliff fifty feet high with houses on it. The whole style of ancient England was now a part of the German Ocean. Dunwich, once a flourishing and populous town, and the most considerable sea-port on the coast of Suffolk, has been gradually swept away, so that there now only remain about twenty houses. The church of Dunwich, on the coast of Kent, was nearly a mile inland in the reign of Henry VIII.; it is now little more than sixty yards from the water's edge.

The whole coast of Sussex has been incessantly encroached upon by the sea from time immemorial; tracts of 400 acres have been carried away at one time, and the old town of Brighton, which stood between the site of the present cliff and the sea in the reign of Elizabeth, has been wholly destroyed. By the undermining of the sea on the coast of Dorsetshire, in 1792, a portion of land 600 yards from E. to W., and 500 miles long, has been at the mercy of the sea from twenty-four hours. The island of Heligoland, off the entrance of the river Elbe, has been reduced to the fourth part of its size in the last 500 years, and since 1770 has been reduced by the sea upon the English coast, so that in fifty years the sea has carried away the whole of the sea-front between Yarmouth and Lowestoft. The frigate was coasted, and in twenty-four hours. The whole of these ships, once of great importance, has now become navigable by large ships. Nowhere has the sea made greater inroads than on the coast of Schleswig. The island of Nordstrand, in the earlier part of the nineteenth century, was separated from the main land by a narrow stream, and only the first fifty yards of its former shore is considered and highly cultivated. In the year 1240 a great part of it was destroyed, and at the end of the sixteenth century it was reduced to an area of twenty miles in circumference. The industrious inhabitants endeavoured to save their territory from the encroachment of the sea, by building breakwaters in the form of a hexagon, in the year 1267, which was considered a great storm devastated the whole island, destroyed 1340 people and 50,000 head of cattle; and three small islets, which have since considerably diminished, were all that remained of the once fertile and populous Nordstrand.

It is likely that other Alps and other mountains, and further instances of the like nature: those we have already mentioned have all occurred within the historical era; others, however, still more remarkable in extent, date from a much earlier period of the earth's history, and the evidence of their existence is adduced to shew the great extent of the opposite portions of the separated lands. There is every reason to believe that England once formed a part of France; the cliffs on the opposite sides of the channel are identical in structure, and the Downs near Dover and Boulogne; the submarine chain of hills is, in some places, only fourteen feet below the surface at low water. From the German Ocean to the Straits, the water becomes gradually more shallow, diminishing, in a distance of 200 leagues, from 120 to 18 fathoms; and in the same manner from the Straits to the mouth of the English Channel there is a gradual increase of the depth of the water, so that at the strait there is a ridge with a fall to the west and to the east. In the wearing of the sides, and consequent widening of the straits which is now going on, we see an advanced stage of a work of destruction which has been many thousand years in operation. That Sicily was at one time united to Italy, was a tradition in the time of Virgil (Eneid. III. 414; 428):—

"I tunc quondam et vasta normula ruina
Diamonibus frangit, gemmis venit usque talibus
Una vesper; vacto medio vi postus et unda
Rebus Siciliae iacta abscondita."—Th' Italian shore.

And thus Sicily, before this scene—
An earthquake caused the law; the roaring tide
The passage broke that land from land divided
And left the land retired, the roaring tide.

Dryden's Trans. v. 599.

All modern observations on the structure of the opposite shores, the bottom of the intervening sea, and the violence with which it is now going on, cannot give the whole detail to the tradition. But as Sicily is in that part so frequently convulsed by volcanic fires, it is very probable that subterranean movements have greatly contributed to the formation of the Straits of Messina. In like manner, there is every reason to believe that the island of Ceylon was at one time united to the continent of Hindostan. [See Adam's Bridge.] Humboldt is of opinion that the Caribbean was once a mediterranean sea, enclosed by a circuit of land, of which the Caribbee Islands, St. Domingo, Jamaica, and Cuba, are the remains; and whole great portion of the economy of Cozumel from the promontory of Yucatan, through the above-named islands to Trinidad, and the coast of Cumana, with its deeply indented shores, the numerous islets and shoals, gives countenance to the conjecture, and justifies the belief that we cannot know the sea, which gradually is now insensible force of the waves of the Atlantic, co-operating with subterranean agency, through an indefinite succession of ages.

To what, it may be asked, does all this lead? If such a constant destruction of the land be a part of the system of nature, it is necessary that, if her laws continue to endure, the whole of our present continents must in time disappear under the surface of the sea. Undoubtedly to that, and to no other conclusion must we arrive; but such a transference of the land which now rises above the surface of the sea is in perfect accordance with what geology tells us has been the economy of nature in times past. All the stratiﬁed masses of which the crust of the earth is composed, however high their position may now be, must finally return to the sea; and the materials of which they are composed must have constituted the component parts of other rocks which, in a former condition of the earth's surface, must have been acted upon and abraded by similar agents to those which now operate on the composed of large water-worn fragments, materials supplied, most probably, by rivers which had a rapid descent to the sea; but such as water-courses form but a small proportion to those which traverse low and level countries, and our modern rivers are constantly subject to the rude beds of conglomerates bear only a small proportion to those strata the materials of which are in a consolidated state,—an additional fact in support of the doctrine, that the formation of strata in past times took place under circumstances analogous to those which now exist. But the laws of the world have not continued unaltered. But renovation as well as decay is a part of the economy of nature; and the same subterranean forces which raised our present continents, may, in after ages, repeat the process of destruction. The Author of nature has not given laws to the universe, which, like the institutions of men, carry in themselves the elements of their own destruction. He has not given us any system of infamy or of old age, or any system by which we may estimate either their future or their past duration. He may put an end, as he no doubt gave a beginning, to the present system, at some determinate period; but we may safely conclude that such a catastrophe will not be brought about by any of the laws now existing, and that it is not indicated by any兆兆 which we perceive.

ALMACANTER, an Arabic term, now disused, but which, with many others, was formerly employed in astronomy. The name is given to all the directions to the east; and hence the two stars which have the same Almacanter have the same altitude. Almacantar would now be called a circle of altitude, in the same way as a small circle parallel to the equator, all whose points have therefore the same declination, is called a circle of declination.

ALMADEN, a coppermina of the province of Toledo, in Spain. In the province of La Mancha, is situated upon a hill of cinnabar, between two mountains which form a part of the chain of Sierra Morena. It belongs to the Archbishopric of Toledo, is fifteen leagues distant from Ciudad Real, eighteen from Cordova, and forty-four from Madrid.
It comprehends in its district six villages, and has a parish church, an hospital, and barracks for the galleys slaves.

Almaden is famed for its mines of quick-silver, which, according to Bowles, are the richest in their produce, the most conducive to the moral and physical, and the most ancient in the world. We find them mentioned by Theophrastus, who lived more than 300 years before Christ, and Vitruvius also speaks of them. Pliny places Cisappa, or as it is sometimes written Sisapon, in Bactria, and says that this mine was kept open with the greatest expense. He opened it in order to take the quantity of cinnabar necessary for the consumption of Rome. (Plin. xxxii. 7.) The Romans considered this mineral poisonous, but, notwithstanding this, their matrons painted their faces with it, and their painters employed it in the same manner. There is no mention of this mine, but no traces remain of their labours. The Moors, owing perhaps to some prejudice, did not work them.

The direction of the hill is from north-east to south-west. Bowles says, that he compassed the mine with the watch in his hand, and countcd twenty minutes in length and fourteen in breadth. The elevation of the hill is 120 feet. It is formed by two inclined planes resembling the back of an ass, and though the elevation appears to be perpendicular, the hill has an inclination of 14°, like all the rocks entering into the hill. Upon the surface of hill, are several naked rocks, on which spots of cinnabar are seen, which, probably, led to the discovery of the mine. Over the rest of the hill some strata of slate with veins of iron are discovered. All this country is abounding in iron mines, and we found in the same mine of Almaden, we find iron, mercury, and sulphur mixed so as to form one mass. The neighbouring hills are formed of the same stone, and it is not uncommon to find sulphur and mercury together in one mass, as is generally supposed, injurious to vegetation. Neither do the animals suffer in the least, for a human being sleeps with safety upon a vein of cinnabar. The galleys, which work in these mines, are not exposed to any harm, but are commonly believed. They only work three hours a day, and do nothing but take out the earth in wheelbarrows. Some fine convulsions and other fits, etc., to the compassion of those who visit the mines. The inhabitants of Almaden work willingly double the time, and receive only half of what every one receives in the government.

The stone of these veins is similar to that of the rest of the mountain, and the mineral which it contains is more or less abundant as the grain of the stone is finer or coarser. Every pound of stone gives from three to ten ounces of mercury, and of this quantity two or three are cinnabar.

A stream of lime-stone, from two to three feet in breadth, traverses the mountain, and serves as a boundary to the mineral. This mine supplied the silver mines of Mexico with mercury, and those of Guaneavela the mines of Peru, but the latter ceased about 1741. It is one of the Spaniards for the mode of separating the silver from the earthy particles by means of mercury, which they have applied to practice since 1666. [See AMALGAM.]

In the years 1796 and 1797, Mark and Christopher Fugger, of Germany, undertook to work this mine, and contracted to give the government 4500 quintals (of 100 lbs., each) of mercury annually; but not being able to fulfil their promise, they abandoned it in 1653, together with the silver mine of Guaneavela. They, however, did well. While connected with these mines, however, they also took the silver and copper mines of Spain, and their descendents live at present in Germany with the rank of princes. A branch of this family afterwards took the mine, and worked it until 1645. In the following year the government undertook the management of it. Don Juan Rostaneate established the ovens and assaying-rooms for coining the mineral. These ores are twelve, and are named by the names of the twelve apostles. Each is capable of containing 10 tons weight of stone. The oven is kept burning for three days, and the same time is required to cool.

There is another mine of cinnabar near Alcântara, and another of mercury virgen, (pure mercury,) not far from St. Fe. See Bowles's Introduction à la Geographie Espanole, Madrid.

ALMAGEST, a name given by the Arabs to the moon, airships, or great collection, the celebrated work of Ptolemy, the astronomer of Alexandria. For a particular description of the aspects of the moon, see the article SYNAXA. A part of this work was translated into Arabic about the year 1297. The patronage of the Caliph Al Ma'mun, by the Jew Almugaber, and the Christian Sergius. The work was an Arabic article prefixed to the Greek work regius. The great number containing it is in the original work itself, or, as we might judge from the expressive character of the Arabic name, by which it is the only passage by which the work was established. It was written at Baghdad, and was translated into French by a certain Philippe of the society of C. Bellevue, before 1312. The translation was finished in 1345 in the school of the Caliph Al Fath Ali, and the first edition was printed at Venice in 1474. The Arabic original, however, does not appear to have been published at all. The work is divided into two books, the first giving a general description of the moon, the second containing a more particular description of its aspects. It is a Hebrew work, and it has been translated into Latin by Guazzo, who published the first edition at Venice in 1504.

ALMAGRO (ORETO), a town in Spain in La Mancha, twelve miles from Ciudad Real, and thirty from Madrid. It is situated in a fertile plain, which produces corn, oil-seeds, potatoes, and grass. It is celebrated for its mills, which are considered among the best in Spain, for the sale of such an animal fur is held on the day of St. Battista. About 13 miles north of the town is a stream of mineral water, of a bitter taste, which it loses if not kept in a vessel.

ALMAGRO (DIEGO DE), one of the adventurers who went to Spain to the conquest of America. He was a foundling and brought up by a clergyman in Spain, according to Gomara; but according to Zarate, of Madao. When the success of Columbus's voyage became known in Spain, numbers of adventurers, prompted either by religion, avarice, or ambition for military glory, or the desire of spreading Christianity abroad, flocked to the new world; and many remained there until an opportunity was offered to them to become kings. Of Almagro, nothing is said by the historians except when the year 1524, when he entered into a sort of partnership with Pizarro, took a part in the murder of Pizarro, and joined the expedition of Peru. Pizarro took the command of the troops; Almagro engaged to procure the supplies of men, arms, provisions, etc., and the expedition to undertook the sale of the products of Peru. Pizarro set out first, and Almagro afterwards joined him. Some time after, the execution or murder of the Peruvian Almohades, Francisco Pizarro was infested with the arrival of Pedro de Alvarado with some troops who had been left by the governor of Peru, the unfortunate cruel, whose name, and joined his own forces, and marched together to Cuzco.

Almagro was informed by one of his party that he had been appointed governor of Nueva Toledo. He interpreted this to mean that Cuzzo also was part of his province, and, assembling the ayuntamientos, they declared to him his views. The two brothers of Pizarro, Juan and Gonzalo, refused to obey the self-made governor, and were put under arrest. Francisco Pizarro, upon hearing this news, left Truxillo, where he then was, and proceeded to Cuzco. He was so great a host, that he could not be resisted, and Pizarro not only pardoned him, but even lent him a considerable sum of money. Pizarro and Almagro entered now into an agreement by which the latter promised to his sole son to leave Cuzzo, and never return to those lands of the name of Charles, and order him to do so. Upon this he was sent to the conquest of Chili. In 1535 he set out on his march, in which he crossed the Andes from Cuzco, and traversed the deserts of Patagonia to the coast of Chili. He crossed the province of 250 leagues. This having suffered much fatigue and privation, he subdued several tribes of Indians; and it is said that he was presented by several caciques with 600,000 pieces of gold.

Five months after, Juan de la Rua and Rhu, who had left at Cuzco to recruit men for his army, brought him the intelligence that Fernando Pizarro, who was his brother Francisco had sent to Spain to solicit honours and titles for the discoverers, had returned from thence, being
ing the title of Marquis of Peru for Pizarro, Governor of Nueva Toledo for Almagro, and Bishop of Peru for Lurque. Some of Almagro's friends advised him to return to Cuzco. On his way thither he met Noguera, an officer who had been sent by Pizarro to ascertain whether he was in want of any assistance to pursue his conquests, Pizarro himself being engaged in building up his power. He never dreamed but himself of this opportunity to get full information of the state of affairs at Cuzco, the safety of which, at that time, was much endangered by a revolt of the Indians; and having ascertained that he might easily obtain possession of it, he hastened thither. In 1539, he subdued the Indians, he entered Cuzco without opposition, imprisoned Gonzalo and Fernando Pizarro, and pillaged their house. Francisco Pizarro, upon hearing of these events, sent from Lima two successive detachments against Almagro, and at a renewing of the treaty of Lima, he left a son by an Indian woman, who was also called Diego de Almagro, and had as eventful a life and as tragic an end as his father. (See Gomara, Historia General, &c., chs. 192—198. Zarate, Historia de la Conquista del Peru, book ii. chap. 10; Lalande, Histoire du Nuevo Mundo.)

AL-MAMUN. [See Abbasides.]

ALMANAC. The derivation of this word has given some trouble to grammarians. The most rational derivation appears to us to be from the two Arabic words al, the, and manac, subscribed. An almanac, in the modern sense of the word, is an annual publication, giving the civil divisions of the year, the movable and other feasts, and the times of the various astronomical phenomena, including in the latter term not only the eclipses of the sun and moon, the positions of the sun and moon or sun, but also those of a more ordinary and useful character, such as the places of the sun, moon and planets, the position of the principal fixed stars, the times of high and low water, and such information relative to the weather as observation hath hitherto furnished. This agrees with political, and statistical information which is usually contained in popular almanacs, though as valuable a part of the work as any, is comparatively of modern date.

It is probable that almanacs have been the age and country employed, either in their construction or improvement. The belief in astrology, which has prevailed throughout a great part of Europe, brought about an immense demand for almanacs absolutely necessary, as the foundation of the pretended science consisted in an accurate knowledge of the state of the heavens. With the almanacs, if indeed they had not before the above-mentioned absurdisties were introduced into the West, and strange to say, it is only within these few years that astronomical predictions have not been contained in nine almanacs out of ten. It is not known what were the first almanacs published in Europe. That the Alexandrian Greeks constructed them in or after the time of Alexander is certain, but when issued, we cannot find any almanacs derived from them. The celebrated commentator upon the Almagest, in a manuscript found by M. Delambre at Paris, in which the method of arranging them is explained, and the proper materials pointed out. It is impossible to suppose that at any period almanacs were ever published by the astrologers, because the almanacs of Regiomontanus, which simply contained the eclipsed and the places of the planets, were sold, it is said, for ten crowns of gold. An almanac for 1442, in manuscript we presume, is preserved in the Bibliothèque du Roi at Paris. The almanacs of Engel of Vienna were published from 1494 to 1500; and those of Bernard de Granados of Barcelona, from about 1447. There are various manuscript almanacs of the fourteenth century in the libraries of the British Museum, and of Corpus Christi College, Cambridge.

The first astronomical almanacs published in France were those of Duret de Montibus, in 1637, which series continued until 1700, and were followed, for some time, by others, such as those of some similar description; for, in 1579, an ordnance of Henry III. forbade all makers of almanacs to prophesy, directly or indirectly, concerning the affairs either of the state or of individuals. In England, the royal authority was less rent upon the same lines. In 1693, during the monopoly of the trade in almanacs to the Universities and the Stationers' Company, and under their patronage astrology flourished till beyond the middle of the last century, but not altogether unopposed; the humorous attack of Swift, under the name of Bickerstaff, upon Partridge's almanac, is well known, both from the amusements which the public derived from the controversy, and the perpetuation of the assumed surname in the Tatler. But though Swift stopped the mouth of Partridge, he did not, at the same time, close those of others, whose direction the almanac was published. The Stationers' Company (for it is but fair to state that the Universities were only passive, having accepted an annuity from their colleagues, and resigned any active exercise of their privilege) found as another opposition, as good a precedent as his predecessor:—nor have we been without one to this day.

The Stationers' Company appears to have acted from a simple desire to give people that which would sell, whether astronomical or not; and not from any peculiar turn for profanity, inherent in the company. The almanacs, however, issued at the same time the usual predictions in one almanac, and undisguised contempt of them in another; apparently to suit all tastes. The almanac of Alltree, published in the above-mentioned year, calls the supposed influence of the moon upon different species of weather "a delusion, and dissuades from astrology in the following lines, which make up in sense for their want of elegance and rhythm:

"Let every philosopher (i.e., a mathematician).

Leave these astronomical

And write true Astronomy.

And he bore you company.

In 1775, a blow was struck which demolished the legal monopoly. One Thomas Carnan, a bookseller, whose name does not occur in any of the returns of the monopoly, had his books sold in London and elsewhere, and no attempt was made to detect or presumed the illegality of the exclusive right, and invaded it accordingly. The cause came before the Court of Common Pleas in the year above-mentioned, and was there decided against the Company. Lord North, in his famous speech in the House of Commons, says: "I have no objection whatever to the public and legalize the privilege, but, after an able argument by Erskine in favour of the public, the House rejected the ministerial project by a majority of 15. The absurdity and even indecency of some of these productions was fully exposed by Erskine; but the defeated monopolists managed to regain the exclusive market, by purchasing the works of their competitors. The astrological and other predictions still continued; but it is some extenuation that the public, long used to predictions of the deaths of princes and other highly placed personages, were not surprised when they did not contain their favourite absurdities. It is said (Baily, Further remarks on the defective state of the Nautical Almanac, &c., p. 9) that the Stationers' Company once tried the experiment of partially relinquishing the monopoly, and conforming——sense, by no greater the works of other booksellers, whose whose names have come down to us, the earliest of which Lalande, an indefatigable bibliographer, could obtain any notice, are those of Solomon Jacobus, published in and about 1543, and of the celebrated Purbach, published in 1450—1461. The only Cours de Regiomontanus, said by Bailly, in his History of Astronomy, to have been the first ever published, but which it might be more correct to say ever printed, appeared between 1475 and 1506, since which time no less than 350 editions have been published of which our limits will not allow us to give even the names of the authors. They may be found in the Bibliographie Astronomique of Lalande, and in Hutton's Mathematical Dictionary, article Ephemeris. The almanacs of Regio-
parts, so that before long it may be hoped that the latter will appear entirely.

Of the prodigiously astronomical almanacs the most important in England is the Nautical Almance, published by the Admiralty for the use of both astronomers and seamen. This work was projected by Dr. Maskelyne, then Astronomer Royal, and first appeared in 1767. The employment of lunar distances in finding the longitude, of the efficacy of which method Maskelyne had satisfied himself in a voyage to St. Helena, required new tables, which should give the distances of the moon from the sun and planets with the greatest possible accuracy. To carry out this task, he engaged the services of the mathematician G. W. de Lisle, who was appointed by the government to prepare the necessary tables. The French Comptes des Essais et Recherches, which is the French counterpart to the Nautical Almanac, first appeared in 1741.

The most celebrated astronomical almanac is the French Comptes des Essais et Recherches, which is the French counterpart to the Nautical Almanac.

The French Comptes des Essais et Recherches, which is the French counterpart to the Nautical Almanac, first appeared in 1741. It was then continued under the supervision of Professor Encke. Its precursor, the Astronomisches Jahrbuch, was compiled for the years 1747-1782 by C. F. W. Wolf, and was entirely compiled by Encke in 1830. Of other works of the kind published on the continent, those of Combrin and Mag, are among the most valuable; the latter was commenced in 1795, by M. de Casureris; we have not been able to find the date of the last five issues of the former.

The oldest national astronomical almanac is the French Comptes des Essais et Recherches, which is the French counterpart to the Nautical Almanac. It was first published in 1741, and was continued under the supervision of Professor Encke. Its precursor, the Astronomisches Jahrbuch, was compiled for the years 1747-1782 by C. F. W. Wolf, and was entirely compiled by Encke in 1830.

Next to the Nautical Almanac, the private publication which is most entitled to notice as an astronomical almanac is Whit's Ephemeris, a work which is nearly as old as the monopoily previously described. For many years past, this publication has given astronomical data sufficient to enable the seaman to find his latitude and longitude. The French Comptes des Essais et Recherches, which is the French counterpart to the Nautical Almanac, first appeared in 1741. It was then continued under the supervision of Professor Encke. Its precursor, the Astronomisches Jahrbuch, was compiled for the years 1747-1782 by C. F. W. Wolf, and was entirely compiled by Encke in 1830.

At present, all almanacs published in this country are subjected to a heavy stamp duty of fifteen pence per copy. The average number of stamps issued for this purpose between the years 1821 and 1830 inclusive, was about 30,000,000, producing an average revenue of about 30,000,000. When almanacs were almost wholly devoted to purposes of imposture, the heavy duty might be defended upon the ground that it obstructed the diffusion of a pernicious commodity, and prevented the truth. At present the tax prevents the free competition of respectable publishers in almanacs; and further, is so enormous that many individuals are tempted to evade the law, and unstamp almanacs are circulated in as large numbers as those which pay the tax. We are told to assert this, without hesitation, upon the authority of informants which we have collected from every part of the United Kingdom. We may well smile at a tax which promises fraud by all among those who obey and disobey the law, that is, astrology among the honest, and smuggling among the unprincipled.

ALMANSOR, properly AL-MANSUR; or, with his complete name, Abu Jafar Abdallah Al-Mansur, the Marquis of Khorasan, was born at Hormuz in Syria, A.D. 713. During the short reign of his brother and predecessor Al-Saffah, he had been governor of Mesopotamia, Armenia, and Azerbaijan. When Al-Saffah died, A.D. 755, Al-Mansur, who was then only a young boy, came to Mecca, was summoned to Damascus, and was crowned king at the very beginning of his reign, Al-Mansur had to encounter an opponent in the person of his cousin Abdallah, who claimed the caliphate. After a hard struggle, the forces collected by Abdallah were defeated by Al-Mansur in the Battle of the Fertile Delta. The victory was the signal proof of his adherence to the cause of the Abbasides. At that time Abu Moslem was governor of the province of Khorasan, where he enjoyed much popularity. Al-Mansur now appointed him prefect of Syria and Egypt, and on Abu Moslem's refusal to return to Persia, he punished him by putting him to death.
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In 754 Sinan, of Nishapur, revolted in Khorasan. The caliph sent an army under the command of Jamshur against him. The enemy overthrew the harem and then turned on the town, which they burned down. Sinan was somewhat unceremoniously called on to send home the booty that he had made during this expedition, Jamshur himself revolted, and occupied Isphahan. He was, however, succeeded in January, 755, by a reconquest of the region into Azerbaijan, where he was ultimately defeated, A.D. 755.

The year 758 was marked by a disturbance of a peculiar kind at Kufa. The Ravendites, a tribe of Khorasan, the descendants of Abdallah ben Ravend, who believed in a sort of moral and religious pantheism, and who, contrary to the custom of the Abbasside family, but a dispute had arisen between them and Abu Moslem, in consequence of which they were obliged to keep themselves concealed during his lifetime. Now, after Abu Moslem's death, they came in contact with members of the court, where they had dared to engage in dancing and singing, or amuse them by reciting poems. They excel in singing pathetic ballads: dwelling upon plaintive tones, they inspire a feeling of melancholy which, in the circumstances of the Turks, enemies as they are to all such delights, they may perhaps be allowed to listen to them. Two girls sometimes sing together, but, like their orchestra, they are always in unison; accompaniments in music are only for enlightened nations; on the other hand, they feel that the appeal to than their understandings, delightful in simple Mehemet, which immediately affect the heart, without engaging their minds by the modulations of a well-supported harmony.

The Almains also accompany funerals, at which they sing dirges, and utter groans and lamentations, like the profecccc of Sardinia, Corsica, and other European countries. The higher and more accomplished class of the Almains attend funerals but wealthy people, and their price is high. The common people, however, have adopted their Almains, who try to imitate the superior class, but have neither their elegance, grace, nor knowledge. They are seen everywhere; the public squares and the walks round Cairo abound with them. Their morals are seriously deficient, as likewise so grossly immoral in fact, the common courtiers of the country. Although there are Almains in Syria and other parts of the Ottoman empire, yet Egypt seems to have been at all times their favourite, and as it were, their native country. The Bayyadins of Husayn, Abdullah, Ali and the like, were Almains.

ALMEIDA, a strongly-fortified city of Portugal, in the province of Beira, and comarca of Pinhel: 40° 37' N. lat. 6° 32' W. long. Population 11,500. It lies between the rivers Coa and Turonzes, both tributaries of the Douro, and the latter forming the boundary between the kingdom of Portugal and Portugal. Its position, therefore, on the frontier, has always made it a post of great military importance, the more so as it is in some measure exposed to the Spanish fortress of Ciudad Rodrigo, from which it is less than forty miles by the peninsula war, Almeida was more than once an object of contention. In the month of August, 1810, it was invaded by Massena, and the English governor, Colonel Cox, with his Portuguese garrison was prepared for a determined resistance, but, on the evening of the 26th, only eight days after the trenches were opened, the magazines, either through accident or treachery, exploded. The whole town was consequently in ruins, the batteries breached, and the greater part of the guns thrown into the ditch. Such was the governor, Massena, when he met, with his guards and officers, who were in treatable communication with the French, headed a mutiny of the garrison and compelled him to surrender. In the following spring Massena again returned with the Spanish troops, and, in addition to the supplies into Almeida to prepare it for a siege. When the British commenced the blockade, he made an unsuccessful attempt to relieve it by the battle of Fuentes de Oñoro, but succeeded in sending orders through the British posts of blockade for the French governor, General Bremner, to abandon the fortress. This order was executed with great skill and success. After destroying the ramparts and guns, without exciting any suspicion on the part of the British, Bremner sprang his mines at midnight on the 16th of May, and made his way with 1500 men through the British troops without much loss. On the banks of the Agueda he joined one of the main divisions of the French army. (Millano, Napier's Peninsula War.)

ALMEIDA, FRANCISCO, seventh son of the Condé de Abrantes, was the first Portuguese viceroy of India. In his youth he distinguished himself against the Moors in the Peninsula, particularly in the conquest of Granada. In 1501, while on a visit to his father, the Bishop of Cóimbra, he went for by King Manuel, and intrusted with the important office of viceroy of the recently acquired possessions in India. On the 25th of March, 1505, he set sail from Lisbon. His embarkation was well attended by the Barros, and the late, as his black and perfumed and in trees, descends over their shoulders; the shift, transparent as gaze, scarcely conceals the skin: as the action proceeds, the various forms and contours the body can assume seem progressively to become more and more intense in tambour and cymbals, regulate, increase, or slacken their steps. Words, adapted to such scenes, inflame them more, till they appear as if intoxicated, and become frantic bacchanalians. Forgetting all reserve, they then abandon themselves to the disorder of their senses, while the indolent and licentious spectators, who wish nothing to be left to the imagination, redouble their applause. (Savary's Letters on Egypt.) These Almains are admitted to be the most accomplished of any of the races of Orientals, in dancing and singing, or amuse them by reciting poems. They excel in singing pathetic ballads: dwelling upon plaintive tones, they inspire a feeling of melancholy which, in the circumstances of the Turks, enemies as they are to all such delights, they may perhaps be allowed to listen to them. Two girls sometimes sing together, but, like their orchestra, they are always in unison; accompaniments in music are only for enlightened nations; on the other hand, they feel that the appeal to than their understandings, delightful in simple Mehemet, which immediately affect the heart, without engaging their minds by the modulations of a well-supported harmony.

After a prosperous voyage Almeida arrived at Quiloa, on the 22nd of July. The Moorish king of that city Habisrmo,
Almeida, having thus punished his enemies, returned to Cochim, where Marshal Coutinho, who had arrived from Portugal, urged him to return home. The voyage relied Almeida, surrendered his government, and sailed from Cochim on the 23d of November, 1506, and Portugal, after having doubled the Cape of Good Hope, he stopped at Salalhina bay to procure a supply of fresh water. His soldiers had a dispute with the natives, and an affair ensued. For a man alone in the midst of that inhospitable country, to serve to him in a sarcastic manner, 'Here I should wish to see by your side one of those whom you favoured in India.' Almeida very complacently answered, 'This is not the time to think of that; think rather how to save the royal standards, as for me, I am old enough, both in years, and in a die here, if that be the will of the Lord.' From this moment Almeida never abandoned either the standard or his general until Almeida fell perished by a lance.

'That the man who had crossed over countless thousands of the Asaties, says a contemporary writer: 'had humbled their sovereign princes, and annihilated in the seas the powers of the Egyptian Soldan, should perish in an obscure strand, by the hands of a few savages, is a salutary lesson to those who indulge in ambition. Almeida was a man of noble appearance, prudent, conciliatory and very much esteemed for his generosity. During his administration of India, he made the Portuguese tongue the language of commerce and government, as much by his example as by his orders. His name was a great friend of the Portuguese. Almeida received the homage of the new king in the name of his master, built a fortress to keep the inhabitants in subjection, and then proceeded to the town of Mombasa, which he destroyed. On his arrival at Diu on the Malabar coast he received an embassy from the King of Bissarag, who was desirous to form an alliance with the Portuguese. Almeida erected here another fortress to protect the factories, or commercial establishments of Canaor, Cochim, and Coulun, and loaded eight vessels with precious stones which he sent to the Portuguese squadron in its way to Europe discovered the island of Madagascar.

The governor of Cochim, Trimumpara, had resigned in favour of one of his relations, and the viceroy went to town with 2000 soldiers and a great retinue to reach the king. Almeida sent his son Lorenzo against the King of Calicut, who had offered some injuries to the Portuguese merchants. Lorenzo, after having taken ample satisfaction for these injuries, received an embassy at Goa, and also took the Maldivian islands. At the same time, four vessels, which had come from Portugal, formed a commercial alliance with the King of Malaca, and established two factories in the island of Sumatra.

The sultan, or caliph of Egypt, with the aid of the republic of Venice, which always looked with an envious eye on the success of the Portuguese, had fitted out a naval expedition, and given the command of it to an experienced Persian, named Mir Hosein. The King of Calicut, expecting this reinforcement, sent a legation to Lorenzo, but was disappointed by that envoy. When Lorenzo was in the port of Chaul, the Egyptian fleet, which had been reinforced with twenty-four vessels of the governor of Diu, appeared. Lorenzo at first mustered them for the squadron of Albuquerque, which he was expecting. The tide of Mir Hosein, however, soon made him discover his error. The two squadrons fought till night-fall without any considerable advantage on either side. Some of his officers advised Lorenzo to avoid the obsequity of night, anchor, and get out into the sea; but the gallant young man, though severely wounded, said, that to go away at night was nothing else than to run away, that was a man which he never would do. As the Portuguese squadron was Filename: a book of Portuguese Geography, a book to the end—ii, book 1—4; Damnian a Goa, Ochrida de Senhor Rey Dom Manuel; Mariana, book xxix, chap. 16.; Lanzier's Cabinet Cycopedia, History of Spain and Portugal, iii. p. 300.; ALMEIRIA, a province of Spain formed out of the eastern part of the kingdom of GRANADA.

ALMERIA, the antient Murgis, the capital of the province is near the outlet of the river Almeria, 36° 31' N. lat., 2° 33' W. long. It has a convenient well-sheltered port, and some manufactures of wood and cork, and cordage made of Spanish broom. During the time of the Moors kingdom of Granada, it was one of the most opulent commercial towns in their dominions. Cotton is now cultivated to some extent and it attains a considerable growth. It was also a bishopric and the seat of a prince-bishop. The book is to the end—ii, book 1—4; Damnian a Goa, Ochrida de Senhor Rey Dom Manuel; Mariana, book xxix, chap. 16.; Lanzier's Cabinet Cycopedia, History of Spain and Portugal, iii. p. 300.; ALMEIRAS, the antient Murgis, the capital of the province is near the outlet of the river Almeria, 36° 31' N. lat., 2° 33' W. long. It has a convenient well-sheltered port, and some manufactures of wood and cork, and cordage made of Spanish broom. During the time of the Moors kingdom of Granada, it was one of the most opulent commercial towns in their dominions. Cotton is now cultivated to some extent and it attains a considerable growth. It was also a bishopric and the seat of a prince-bishop. The book is to the end—ii, book 1—4; Damnian a Goa, Ochrida de Senhor Rey Dom Manuel; Mariana, book xxix, chap. 16.; Lanzier's Cabinet Cycopedia, History of Spain and Portugal, iii. p. 300.; ALMOCASEA, a province of Spain formed out of the eastern part of the kingdom of GRANADA.

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The siege of Spanish Morocco was persistence and strategy, but the key to its success was the powerful support of the Almoravid dynasty. The Almoravids were a Berber dynasty from present-day Senegal, and they established a powerful empire in North Africa and Spain in the 11th and 12th centuries. Their conquests were driven not only by military might but also by the religious zeal of the Sufi mystics who were at the heart of the movement. The Almoravids were known for their fanaticism, and they implemented a strict interpretation of Islam that was fiercely anti-polytheistic.

The Almoravids' success in Spain was due to a combination of factors. Firstly, they had the support of the local Berber tribes, who were disenfranchised under previous regimes. Secondly, they were able to present themselves as liberators, promising a return to a true Islamic state. Finally, their military tactics were effective, combining traditional firearms with siege warfare and clever psychological warfare.

Their conquest of Spain was a triumph of Islamic culture and religion, and it marked a new era in the history of the Iberian Peninsula. The Almoravids' arrival in Spain was a turning point, and their influence is still felt to this day in the region's culture and language.
continual state of intestine warfare. The last of them was Idle, who fell in a battle against the Marmit, and with him almost the whole of the Almoner of the Angleterre. See Casser's Royal and National of France.

Durangue, in his Glossary, gives other meanings of the word almoner. It was sometimes used for those who distributed the legacies of others, and who have been called distributaries; or general terms for the poor, and sometimes for the poor whom the alms were bestowed. The eleemosynarii regis, or persons who were supported by the king's bounty, occasionally noted in the Domesday Survey, were of this last description. Almoner is properly a word given in ecclesiastical writers to the deacons of churches.

ALMORY, the capital of the province of Kumun, in Northern Hindostan, is situated in 29° 35' N. lat., and 72° 44' E. long. This is the most considerable town possessed by the East India Company in that quarter of India. It stands on the ridge of a mountain, 5,337 feet above the level of the sea, in the midst of a bleak and naked country, on a scarcely a tree visible within four miles from the walls of the town.

Almorah is approached by a long and steep zigzag road, which a few resolute men might defend against an army. The place was taken by the Gorkhas in 1790, at which time the inhabitants were divided into two political parties. In 1815 it was successfully attacked by the British, the cruelties of their Gorkha conquerors insured to our countrymen the good-will of the natives. The fortifications are very adequate, being commanded from two points of land, and hung on the walls. A new citadel, Fort Mira, was built on a small eminence at the western extremity of the town, after its capture by the British, but having been constructed of loose meagreischists, of which the hill wherein Almorah stands is composed, the walls are already out of repair.

The town principally consists of one street fifty feet wide, and three-quarters of a mile long, with a gate at each end; this street has a natural pavement of rock. Besides streets, a lower street was constructed being of wood an arrangement which is rendered necessary by the frequent recurrence of earthquakes; the side of most of the buildings are slated, which would give a neat appearance to the town, if the inhabitants were accustomed to pile on them sticks of straw as winter provision for their cattle.

On the conquest of Almorah, the East India Company ordered several small bungalows to be built in airy situations around it, which are appropriated to the use of such of its servants as are stationed in this northern hill region for the benefit of their health.

The heat in the summer is considerable, but is always tempered by a fine breeze, and the nights even in the hottest season are chilly; frosts are common, and the town is a very pleasant one in winter, being close as 200 feet lower down. Such vegetation as there is approaches to that of Europe. Raspberries, blackberries, cranberries, and bilberries are common. Up to a certain elevation on the hills, the birch and the willow are found, and at that base the silver fir grows abundantly.

The native inhabitants are honest, peaceable, cheerful, and industrious, but extremely poor, and partake largely of the prevailing dislike of all innovation. Their little advancement in civilization is shown by their treatment of women, who are employed in performing the most laborious tasks.

Almorah is ninety miles north by east from the city of Bareilly, and about 106 miles travelling distance north-east from Mornabad. (Bishop Heber's Narrative of a Journey through the Provinces of India. Hamilton's East India Gazetteer.)

ALMORAVIDES, an Arabian tribe, who came out of the country of Himyar, and established itself in Syria; the name of the first Caliph Abu Bekr was afterwards into Egypt, penetrated into Africa towards the west, and settled about the desert of Sahara. They extended themselves gradually, and gave the name to a sect called Mohammedan, on account of their religion, which had been received by their forefathers; their religion is one of common life, of mystery, and of devotion, and it is called Mohammedan Islam; that is, 'There is but one God and Mohammedian his envoy.'
Yahya ben Ithniham, a very patriotic man of the tribe of Gudalla, which was one of those tribes, on his return from Mecca, meeting with Abu Amur, a famous Fakhik (i.e. lawyer and theologian) of Fez, informed him of the state of his ignorance of his tribe, and of their tractable disposition, and requested him to send some teachers. None of the disciples of the Fakhik felt disposed to undertake so long and perilous a journey. Abdallah ben Yassin, a disciple of another Fakhik, offered to accompany Yahya. Having met with an enthusiastic reception from the tribe, he induced them to wage war against the tribe of Lametounah, who were made acquainted with the political authority; and he gave his followers the name of Marabouth or Morabitin, which signifies men devoted to the service of religion. Abdallah having fallen in battle in the year 450 of the Hegira, A.D. 1058, Yussef ben Omar Lametounah was appointed sovereign prince. This chief led his tribe westwards, established the seat of his empire at the city of Agmat, and laid the foundation of Marocco.

The tribe of Gudalla had declared war against that of Lametounah, and Abubekr marched speedily to its assistance, leaving the command of the army to his relation, Yussef ben Taxfin. Yussef subdued the Berbers, completed the building of the city of Marocco, and entirely expelled the Ziezirds, commonly known by the name of Zebris, from Mauritania. Having by his exploits and by the affection of his men, he declared himself sovereign prince, and married the beautiful Zeina, sister of Abubekr. This chief having returned from his expedition, encamped before Agmat, but finding his opponent too strong to be attacked, hastened to a place of retreat, and returned to his province. Yussef made him a magnificent present, consisting of gold crowns, horses, mules, turbans, rich stuffs, and fine linen, with 150 black slaves, and 20 beautiful young maidens, besides a quantity of perfumes, corn, and cattle, which he continued to send to Abubekr every year till his death.

Yussef now assumed the title of Amir-al-Musulim, or Prince of the Believers. Some of the Mohammedan kings of Spain imprudently invited this ambitious adventurer to assist them against Alfonso VI., who threatened to overthrow their dominion in the Peninsula. Yussef required of them to place the town of Algecira in his power, to secure his retreat in case of a failure; but to this proposal they would not consent. The King of Seville, however, went to Marocco to hasten the expedition.

Yussef sailed for Spain in 1086, at the head of a numerous army, landed on the coast of Andalusia, and marched to Estremadura. King Alfonso hastened from Aragon to stop his progress, and met the Almoravides in the plains of Zalaca. Yussef summoned him by a letter to embrace the faith of the Prophet, and to pay him an annual tribute, or prepare for battle. 'I am told,' said the Moor, 'that thou wast desirous to carry the war into my country; I spare thee this trouble and bring thee into my presence that I may punish thee for thy haughtiness and presumption.' The Christian prince, indignant at this insolence, trampled the letter under his foot, and answered, the messenger,—'Tell thy master what thou hast seen! and tell him also not to put himself during the battle; let him meet me face to face.' After this the two armies engaged, and the battle was obstinate on both sides. The Christians fought like heroes, but were compelled to retreat at nightfall, and the king himself was severely wounded.

Yussef was called back to Africa, and left the command of the Almoravides to Syr ben Abubekr. The next year he returned with considerable reinforcements, and defeating, one by one, the Moorish kings of Spain, established the seat of his empire at Cordova, and caused his son Ali to be proclaimed his successor. Yussef died at Marocco, in the year 1106, at the advanced age of ninety-seven. Clemency and humanity were prominent virtues in his character. Contemporary historians state that he never pronounced a sentence of death. The vast empire of the Almoravides, which now reached from Mount Atlas to the Sierra Morena, was destroyed by the Almohades in the year 541 of the Hegira, A.D. 1147. (See AlMohades.) (See Almohades. The Chronicle of Roderic Toletanus. Casiri, Bibliotheca Arabico-Hispana.)

ALMS-HOUSE, an edifice, or collection of tenements, built by a person in a private capacity, and endowed with a revenue for the maintenance of a certain number of poor, aged, or disabled people. England is the only country which possesses almshouses in abundance, though many such exist in Italy. In England, they appear to have succeeded the incorporated hospitals for the relief of poor and impotent people, which were dissolved by King Henry VIII.

ALNUS, or ALDER, is the generic name of a small group of plants belonging to the natural order Betulineae. It was formerly united with the birch in the same genus, but modern botanists have separated it, because its fruit is wingless and its stamens only four.

Several species are described in botanical works, most of which are found in America, between the mountains of New Granada and Hudson's Bay: a small part belongs to Europe, and northern and middle Asia. Of these, the only species that need be noticed here, are the common, the Turkey, and the heart-leaved alder.

Alnus glutinosa, the common alder, is an inhabitant of swamps and meadows in all Europe, the north of Africa and Asia, and North America. Its favourite station is by the side of rivulets, or in the elevated parts of marshy land where the soil is drained; it does not thrive so well if placed in absolutely stagnant water. Next to the charcoal from black dogwood (Rhannus frangula), that supplied by the common alder is of the best quality; and this tree is in consequence extensively cultivated in plantations belonging to the manufactories of gunpowder. Its juice contains a great abundance of astringent matter, which renders the bark valuable for tanning, and the young shoots for dyeing various colours when mixed with other ingredients; the veiny knots of its wood are cut into veneer by cabinet-makers, for ornamental purposes; and its stems, hollowed out, are among the best materials, next to metal, for water-pipes and underground purposes.

Its foliage being large, and of a deep healthy green, the alder is rather an ornamental tree; and when old it frequently becomes a picturesque object, if unbroken or uninjured by the hatchet of the woodman.

An Old Alder Tree.

Several varieties of the common alder are met with in collections, and among them one, called the cut-leaved, which is extremely ornamental when young: there is also another, with very much lobed leaves, called the hazelorn-leaved, in which there is a trace of the usual appearance of the alder has disappeared.

Alnus incana, the Turkey alder, or upland alder, is distinguished from the preceding by its more erect mode of growth, and by its leaves being destitute of clamminess, but covered

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instead with copious white down on the under side. It is found all over continental Europe, from Sweden to the north of Italy, and east beyond the Caucasus, as far even as Kamchatka. Like the common alder, it shows itself in a number of varieties, among which several are of dwarfish stature; but its general character is to grow more rapidly, and to acquire a larger size than the common alder. What makes it the more remarkable is, that it will grow on light land where there are neither rivulets nor ditches; an important property, as it can scarcely be doubted, from its appearance, that it possesses whatever useful qualities are found in the common alder.

A. cordifolia, the heart-leaved alder, resembles but little in appearance either of the preceding. It forms a rather large, and very handsome round-headed tree, with broad, deep-green, shining leaves, deeply heart-shaped at the base. It grows with rapidity, and is one of the most interesting ornamental trees that have of late years been introduced into cultivation. Though a native of the kingdom of Naples, and one of the most distinct species, its very existence was unknown till within a few years since. It is a perfectly hardy plant, notwithstanding its southern station.

All the alders are increased with great facility by layers; they will also strike readily enough from cuttings, but the latter are longer in becoming handsome plants. Common alder is the traditional nursery tree; and should, if possible, be sown in very light, rich, damp soil, in the autumn, soon after it is ripe. If kept till the spring, even if preserved in sand, it loses in a great degree its power of vegetating; and if not kept in sand, it will scarcely germinate.

ALNWICK or ALNEWICK, a considerable town in the county of Northumberland, 34 miles N. by W. from Newcastle, and 310 N. by W. from London, on the great road which crosses the Tyne on the River Aln, is situated on a declivity on the south bank of the river Aln, over which is a stone bridge of three arches. The town is well laid out; the streets spacious, well paved, and lighted with gas; the houses chiefly of stone, of modern date, and some very considerable. The church is remarkable for the tracery of the tower; is by the four streets, 'Bond-Gate, ' Narrow-Gate,' 'Potter-Gate,' and 'Clayport.' In the first, the ancient gate, from which it derives its name, and which was erected by Hotspur, is still standing. It would have been taken down some years since, (when another gate which had stood till then was removed,) being regarded by the town's-people as a nuisance; but it was preserved by the then Duke of Northumberland from respect for the memory of Hotspur. In the centre of the town is the market-place, a spacious arena on one side of which is the market-square, the town-hall, and a large and commodious stone building, surmounted with a square tower; and on another side is an elegant modern structure, erected by the present Duke of Northumberland, the under side of which is a saloon, as stalls or standaries for the sale of butcher's meat, with a fish and poultry market at the east end, and above is a very elegant assembly room, and a spacious reading-room, which his grace has appropriated to the use of the gentlemen of the town and neighbourhood. The church is a very handsome edifice with a neat tower, dedicated to St. Mary and St. Michael.—The living is a perpetual curacy, of which the Bishop of Durham is patron. There are several meeting houses for dissenters, and chapels for the Wesleyans and primitive methodists, and Roman Catholics.

The most remarkable object connected with Alnwick is the ancient castle to the N.W. of the town, the residence of the Duke of Northumberland. This had been suffered to go very much to decay till it was completely repaired several years since; and it is now one of the most magnificent specimens in the kingdom of an old baronial residence. The building is of freestone, and as well the repairs and ornaments is in the Gothic style, and in excellent taste. The arches, windows, and doors, and all the decorations in every part show the whole to be a specimen of natural and artificial beauty, including the remains of two ancient abbeys. The interior of the castle is splendid; and the chapel, with its exquisitely painted east window, its ceiling copied from that of King's College chapel at Cambridge, is one of the best remaining examples of the art of stained and stucco work, an object worthy of attention.

The trade of Alnwick and its manufactures are not very considerable. A woolen manufactury was once established, but the undertaking failed. The market is on Saturday, chieflly for corn; and there are fairs on the 12th of May, the last Monday in July, and the first Tuesday in October. On the ear of the July fair deputies from the adjacent towns attend the bailiff of Alnwick during the ceremony of proclamation, and keep watch and ward during the remainder of the night.

The municipal government of Alnwick is in the hands of a corporation, consisting of a bailiff, (nominated by the Duke of Northumberland, as constable of the castle,) four chamberlains, and twenty-four common-councilmen. The common-councillors are chosen from among the freemen of the incorporated companies, and the commoners, from the freeholders. The freemen is inherited by the eldest sons, or acquired by servitude. Upon taking it up, the candidates are subjected to a rigorous ceremony of passing through what is called ' Freeman's Well.' This is a miry pool some twenty feet across, and said to be from four to five feet deep in many places. On St. Mark's day (25th of April) the candidates, clad in white, with white night-caps, mounted, and with swords by their sides, accompanied by the bailiff and chamberlains similarly mounted and armed, preceded by music, which is said to be deepened and stirred for their especial benefit. They then dismount, scramble through the pool, several, perhaps, being tumbled over in the bustle, and after changing their befouled garments, ride round the boundaries of the town.

The municipal administration is in the hands of a corporation, to which the town is subject, for the municipal area; the corporation consisting of the baronial officers and the municipal magistrates; but they have considerable revenues, part of which has been employed in erecting pumps to supply the town with water, and part is devoted to keeping up three free schools, to which both boys and girls are admitted on payment of a small fee. The quarter-sessions for the county are held here in turn with Newcastle, Hexham, and Morpeth; and there is a county court monthly for the recovery of small debts. The elections for Northumberland, when they take place, are for the Duke and Duchess of Northumberland, and several Sunday schools.

The situation and strength of Alnwick castle rendered it in early times of the utmost use to the barons of the north of England. Malcolm III. (of Scotland) besieged it in 1093; but was killed by a soldier from the garrison, who, approaching, with the keys on the point of his lance, as if he were going to surrender them, slew the king, and escaped by the speed of his horse. The story that he pierced the king in the eye, and hence obtained the name of Pierce eye (Percy) is a mere fable. Prince Edward, son and heir of Malcolm, attempting to revenge his death, was defeated and lost his life. In 1174 William the Lion, one of Malcolm's descendants, after subdued the castle to the English crown, was surprised at a distance from his camp, he was taken prisoner, and his army in consequence retreated. There was at Alnwick an abbey of Premonstratensian canons, the revenue of which at the dissolution of the monasteries fell to the Earl of Beverley takes the title of Baron from this town: it is in 55° 24' N. lat., 1° 43' W. long. Population of the parish in 1831, 6788.

ALOE, a genus of succulent plants belonging to the na-
Whatever; in the summer they want no fire heat, but may be watered regularly, the supply being always in proportion to their rate of growth and to the temperature of the air; that is to say, when in full growth and in a high temperature, they may have abundance of water, and when growing slowly in a low temperature they should have but very little. [See Agave.]

ALONSO or ALPHONSINE TABLES, an astronomical work, which appeared in the year 1252, under the patronage of Alonso X., in the first year of his reign. They contain the places of the fixed stars, and all the methods and tables then in use for the computation of the places of the planets: but they are not made from original observations, nor is there any material difference between the astronomy contained in them and that of Ptolemy, except in two points. The length of the year is supposed to be 365 days, 5 hours, 49 minutes, and 16 seconds; which is a more correct value than had been given before, being only 26 seconds over the best modern determinations. The mean procession of the equinoxes is stated as half its real amount; being such as would carry the equinoctial points round the circumference of the globe in 49,000 years. An inequality, however, is supposed, having a period of 7000 years, by which the mean precession is alternately augmented and retarded 18 degrees. It is difficult to say with what theory so utterly at variance with the phenomena could be derived. The general opinion is, that these tables were constructed by Isaac Ben Said, a Jew, but others suppose that Al Cabit and Aben Ragel, the preceptors of Alonso, were the real superintendents. The numbers above given in speaking of the precession, have been supposed from their connexion with the number 7, and the difficulty of accounting for them otherwise, to have been the ideas of a Jew. These tables are constructed for the meridian of Toledo, and the epoch 1256. They were not held in much esteem by succeeding astronomers. Regiomontanus says, every least you trust too much to blind calculation and Alphonsine dreams. And Tycho Brahe, who reports that 400,000 dollars have been spent upon them, lamented that this sum had not been employed in actual observation of the heavens. A full account of their contents may be seen in Delambre, Hist. de l'At. du Moyen Age, p. 248. Till the time of Copernicus and Tycho Brahe they continued in general use, but, as a truth, with some modifications, a body of Ptolemaean astronomy. They were first printed in 1493 by the celebrated Raptold of Venice. A copy of this editio princeps is in the Royal Library at Paris. Subsequent editions appeared in 1468, 1492, 1517, 1521, 1543, 1553.

ALONSO is the name of several kings of Spain and Portugal. This name is written by the Spaniards, Isidoro, Alphonso, Alfonso, and Alonso, and by the Portuguese Afonso. We have chosen the form Alonso, as being that in most common use.

ALONSO I., surnamed the Catholic, was chosen king of Leon in 739. He was the son-in-law of Pelayo, and a descendant of King Leovigild. He wrested from the Moors Lars and Saldana, in Castile, and extended his confined empire over nearly one-fourth Spain. He obtained for his cruel conduct to his enemies, whom he extermimated to a man, and formed new colonies of Christians. His cruelty may be extenuated when we consider it as a just retribution on the head of the descendants of the equally sanguinary hordes of Tartar and Moors. Alonso founded several churches in the towns which he conquered, and rebuilt or repaired the old: it is owing to his zeal for the glory of God, that the episcopal of Catholic was given him. He died lamented by his subjects, in 757, and was succeeded by his son Fruela I. [See Mariana, book viii. ch. 6.]

ALONSO II., called the Chaste, elected king of Leon in 791, was the nephew of Bermuda the Descon. His reign was a continual scene of warfare both against the Moors and against his rebellious subjects. To this king is attributed the abolition of the heathen marriages, which the Spaniards were bound, from the time of Mauregato, to pay to the Moors.

The amours of his sister Doña Ximena with the Count of Saldana—the wonderful exploit of Bernardo de Carpio, who was the offspring of this love, against the well-known famous French hero Roland—also belong to this period. All this history, however, is considered by the best critics as belonging to the region of fable and romance. Alonso died about the year 843; he was succeeded by Ramiro I., son of Bermuda the descon. [See Mariana, vii. 9, 12.]

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from what particular species the resinous substance called Aloe is procured, and whether the different samples known under the name of Hepatic, Sococotina, and Horse Aloe are yielded by different species, or are only different qualities of the same species, are points not settled.

All that appears certain is that plants nearly related to Aloe perfoliata of Linnaeus, which some consider distinct species, while others pronounce them mere varieties of each other, are what the drug is prepared from. In all probability, all the species of the genus having an arborescent stem and thick succulent leaves will yield the substance equally well.

That which has the reputation of producing the best aloe
ALONSO III, surnamed El Magnus (the Great), King of Leon, succeeded his father Ordóñez I. in 866, at the age of fourteen. In the beginning of his reign, the Count of Galicia Fruela invaded his kingdom, and forced Alonso to fly to Alava; but the citizens of Oviedo formed a conspiracy against Fruela, assassinated him, and Alonso entered the town in triumph. The Count of Alava Eulogio also revolted, but was defeated and imprisoned at Oviedo, where he died a natural death. Alonso gave Navarre in lieu to Inigo Arista, with a view to oppose a bulwark to the ambition of the princes of the Asturias. He better able to continue the war than the Moors. To strengthen this compact, he married the Princess Ximena, a relation both of Inigo and of the French kings.

Alonso now turned his attention to the Mohammedans; in the thirty years of continual warfare his arms were always crowned with victory. He extended the boundaries of his empire to the banks of the Guadiana. But Alonso, though successful against his natural foe, was not so against his domestic enemies. He better able to subdue the rebellious barons, by his father-in-law the Count of Castile, by his brother Ordoñez, governor of Galicia, and even by his own mother, attempted to dethrone the aged monarch. Alonso succeeded in crushing the rebellion. The son was married to the daughter of his stepfather, Count of Castile, and consigned to a prison; but the rebels, far from being discouraged by this misfortune, availed themselves of this to forward their cause. They raised the feelings of the people by representing to them the cruelty and tyranny of the Moorish government, and decrying the impiety of the son. Hearing the evils of a civil war, called a junta in 910, and abdicated the crown in favour of the government of Galicia he entrusted to his second son Ordoñez, and the youngest, Fruela, had that of Oviedo bequeathed to him.

Alonso died in 923, in Toledo, where he had paid a visit to the shrine of Santiago, in Galicia, whose church had been built and enriched by him, asked troops from his son, and won, as a private individual, a fresh triumph in his old age over the infidels. Shortly after this victory, he died, at Zamora, in 910. He reigned forty-two years, and was a brave, just, and generous prince: he was succeeded by his son Garcia. (See Mariana, book vii. ch. 17—20; and the Chronicles of Alonso el Sabio, Rodrigo Telesforo, and Lucas Tudensius.)

ALONSO IV, surnamed el Gordo (the Fat), king of Leon, succeeded Fruela II. in 925. Six years after his accession to the throne, he abdicated in favour of his brother Ramiro, and retired to the monastery of Sahagun. Two years later he died, a monk. Alonso died ten years after, and was succeeded by his brother, Ramiro II. (See Mariana, book viii. ch. 3; and the Chronicles of Alonso el Sabio, Rodrigo Telesforo, and Lucas Tudensius.)

ALONSO V. succeeded his father Bermudo on the throne of Leon in 994, being only five years of age. The government, during his minority, was entrusted to a regency, which was a very eventful one. During the reign, the great Almansor was defeated, and this success led to the conquest of Cordova. Notwithstanding this victory, the Moors invaded his territories, and caused great devastations. When Alonso came of age, he made a treaty with Muhammad to take part in the war, and married Fruela, and agreed to marry his sister the Count of Castile, and his daughter to the count, offering to the latter the title of king. This unfortunate count was immediately murdered on paying his first visit to his intended father-in-law, and his son of a previous marriage, of his father, who had fled to Leon, and had been kindly received by Alonso. This unfortunate event prevented the projected union of the two kingdoms. Alonso was killed at the siege of Oviedo in 1028; his son Bermudo III. succeeded him. (See Mariana, book viii. ch. 19, 11; and the same authorities as before.)

ALONSO VI was the son of Fernando I. He was crowned king of Leon in 1066. Fernando had committed the same fault as his father in dividing his states among his children. He left Leon to Alonso, Castile to Sancho, Galicia to Garcia, and the cities of Toro and Zamora to Urraca and Elvira, his two daughters. Alonso and Sancho lived in peace with each other only two years. In 1068, Sancho invaded the states of his brother, and defeated him on the banks of the river Paseniga. After this battle, they made a truce for four years, at the expiration of which another engagement took place, in which the Leonese was defeated by the Castilians. Alonso was made prisoner, and confined in the monastery of Sahagun, from which, however, he escaped, and sought a refuge at the Mendicant Orders. Fruela, a most pious prince, was now desiring Zamora, and Alonso hastened from his exile to take possession of the vacant throne. Asturias, Leon, and Castile acknowledged his authority. He invited as brother Garcia to his court and shut him up in the castle of Lora, where he remained until his death, and Galicia was thus added to the states of Alonso.

Having remained undisputed lord of so large a portion of the Peninsula, Alonso turned his arms against the Saracens, pursuing them for several years, and rendered the Chief lieutenant of his stepfather, Count of Castile, governed his tributaries. He afterwards took Cordia, and then attacked Toledo; and had not the Almoravides with a powerful army invaded Spain, he would have expelled the Moors from the peninsula. He gave his illegitimate daughter, Theresa, in marriage to Pedro Nava, who became king of Portugal, and the title of count. During his reign, the famous hero Rodrigo Diaz de Vivar, surnamed the Cid Suli, the Moorish word for Lord, performed those exploits which have furnished abundance of materials to romance writers.

King Alonso died in 1109, at Toledo, in the seventeenth year of his age, and forty-third of his reign. He was a prince modest in prosperity and constant under adversity, and suffered with patient resignation the vicissitudes of fortune. His sons were but a few years of age at his beginning of his own very stormy. He was obliged to conquer several places which still acknowledged the authority of his stepfather, Alonso VII. At last the two princes were reconciled, and Alonso VIII. remained sovereign by the death of his cousin in 1109. Alonso was succeeded by the Moors, the crowns of Leon and Castile fell to his eldest daughter, Urraca. (See Mariana, books x. x. chs. 8—29; 1—8.)

ALONSO VII. [See Alonso I. of Aragon.]

ALONSO VIII., King of Castile and Leon, styled the Emperor. At the death of his mother, Queen Urraca, he became king in 1126. The misrule of that princess government, and the wars which had devastated Castile during the latter part of her reign, rendered his beginning of his own very stormy. He was obliged to conquer several places which still acknowledged the authority of his stepfather, Alonso VII. At last the two princes were reconciled, and Alonso VIII. remained sovereign by the death of his cousin in 1109. Alonso was succeeded by the Moors, the crowns of Leon and Castile fell to his eldest daughter, Urraca. (See Mariana, books x. x. chs. 8—29; 1—8.)

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[See Almonade]. Shortly after this memorable victory, he died at Garcí Muñoz, in 1214; he was succeeded by his son Enrique I. (See Mariana, books xi, xii, and the same authorities as before.)

ALONSO IX, king of Leon, succeeded his father Fernan-
dando in 1186. He was a doughty knight by his cousin, Alonso III, of Castile. For a short space the two relatives lived on good terms; but in 1189, there was a dispute between them about the possession of some territory in Estremadura. To strengthen himself against his powerful antagonist, Alonso IX. married in the same year and to the queen, the lady named Leonor of Foix, this lady being his mother’s relative, Pope Celestine III. annulled the marriage, and the parties not willing to separate, both Leon and Portugal were placed under an interdict. In 1195, however, they complied with the order of the pope.

Fernando, however, would open a new quarrel with his cousin, the king of Castile, and at last this prince gave him his daughter Berengaria in marriage, from whom Alonso IX. was also forced by the pope to part on the same plea of relationship. The marriage, however, was not dissolved without first having been ordained by the pope a declaration of the legitimacy of their children. This measure led again to a war between the two princes, but by the mediation of the pope, a reconciliation was effected.

Alonso now directed his arms against the Moors, and continued to make war and other important places in Estremadura. After having subdued almost all that province, he dismissed his army; and while on his road to Santiago, he died at Villanueva de Sarría, in 1230, after a very stormy reign of forty-two years. His son Fernando III. succeeded him; the crowns of Leon and Castile, as Mariana, books xi, xii, ch. 16—22; 1, 2; Chronique of Alonso el Sabio.

ALONSO, or ALFONSO X., surnamed El Sabio, (the Wise), king of Castile and Leon, was the son of Ferdinand III. and his marriage with Leonor of Foix, and on the following year was acknowledged crown prince by the Cortes at Burgos. While crown prince he took the kingdom of Murcia from the Moors, and accompanied his father to the conquest of Leon. He owned the crown of Leon, in the city of Leon, after his father’s death. The first act of his reign was to renew the alliance with Alhama, the Moorish king of Granada, and to relieve from the tribute which he paid to Castile, in acknowledgment of the prominent services which that king had rendered to his father.

The public treasury was exhausted by the long wars of the preceding reign, and Alonso, in order to improve his finances, had recourse to a measure, which must always prove beneficial to the state, and that was to put in circulation, instead of the peseta. Both these coins were of equal nominal value, but the former much inferior in intrinsic worth. This measure increased the distress, obliged the king to raise the salaries of the public functionaries, and the pressure of the civil discord which ended with his dethronement.

In 1256, the Emperor of Germany being dead, some of the electors proposed Alonso as a candidate, on account of his literary qualifications, but more particularly for his relationship to the deceased emperor by his mother’s side. The Archbishop of Cologne, in his name and in that of the bishop of Mayence, and the count Palatine, chose Richard, Earl of Cornwall. The Archbishop of Treves and the Elector of Saxony considered the election as invalid, and chose Alonso. Attempts were sent to Castile, but the king, owing to some domestic embarrassment, was unable to present in Germany.

The Moors of Spain having received considerable reinforcements from Africa, made an irruption in the territory of Castile and reconquered Jerez, Arcos, Medina-Sidonia, Bejer, San-Lucar, and other places; but their triumph was of short duration. On the following year, Alonso, with a considerable force, marched against them, defeated them in a succession of battles, and took the city of Granada; and paid a considerable sum as an indemnification for the expenses of the war.

In 1265, his first cousin Maria, the wife of the unfortunate Baldwin II., Emperor of Constantinople, came to Spain, to implore the assistance of her relative for the deliverance, according to some historians, of her husband, who was detained in captivity by the sultan of Egypt; and, according to others, of her son, retained by the Venetians as a pledge for a certain sum lent by them to Baldwin when he was re-
duced to great distress by the King of Bulgaria. Alonso generously gave her 30,000 marks of silver.

In 1269, the marriage of Fernando de la Cerda, Alonso’s eldest son, to Blanca, daughter of St. Louis, King of France, was solemnized; and in 1271, Castile began to experience the terrible scourge of a civil war. Alonso had reconquered Murcia, and was occupied in organizing that province, when the King of Granada came to complain of the injury that Alonso had done him by secretly countenancing the rebellion of his subjects in Guadix and Malaga. The answer of Alonso sent Almamar back more dissatisfied than before. The relations were now repaired between these kingdoms; the second son of Alonso, now saw an opportunity of gratifying their resentment, by urging the Moorish king to take up arms against Castile, and by promising that they, with other ambitious followers, would open a new war against the Christian kingdom.

The king having been acquainted with this plot, left Murcia and went to Valencia, to consult with his father-in-law, the king of Aragon; he also sent his ambassador, Arana, to the turbulent nobles assembled at Palencia, and Jaen. Don Sancho, the king’s second son, then at Seville, to prepare himself for the impending war. Arana was unsuccessful in his mission. The king now convoked the Cortes at Burgos, and summoned the rebellious grandees, offering them a safe conduct. In order that the Cortes might deliberate with more freedom, he ordered to be held at the same time the city of Madrigal, the son of Don Sancho, now separated, many embittered against each other than before. The insolent barons in leaving Burgos devastated all the country round, and several of them went back with the Moors. The nobility were chiefly these,—that their privileges had been sacrificed to please the people; that their military service was too long continued; that their contributions were too heavy; and that they could not submit to be judged by the supreme courts of the land. Alonso proceeded to Segovia. In 1273, Rudolph of Hapsburg was elected emperor of Germany. The King of Granada also having died this year, the plans of the nobles were partly frustrated; and Alonso, who felt the necessity of a strong army, prepared to go to Granada at any cost, in order to be better able to forward his pretensions abroad. He therefore again convoked the states at Avila. Some of the grandees visited him privately, and appeared better disposed for peace. The queen and the archbishop of Toledo went to Cordova, and endeavored to reduce the others to obedience. Alonso then proceeded to Seville. The new King of Granada, the rebel barons, and the prince Fernando, his son, came from Cordova to Seville, and being very kindly received by the king, civil discord was for a time appeased, but only for some time.

The King of Marocco, Ajen Yussef, avowing himself of the absence of Alonso in France, where he had gone to have an interview with the pope, made a descent on Andalusia with a powerful army. Nuño de Lara wrote to the prince Fernando, that he was too late to come to the assistance of his country, and, in consequence, the Andalusia was united against the common enemy, offered battle to the Moors near Ecija, but lost it, with his life. Prince Don Fernando, hastening to his assistance, died at Villa Real. The Archbishop of Toledo was also defeated near Segovia and was summoned to the Cortes to settle the question. This body, in consideration of the services rendered by Sancho, and to avoid the danger of a long minority, decided that Sancho should succeed his father. The king refused to sanction this proceeding, and the country became divided in opinion. Alonso himself was summoned to the Cortes to instigate his uncle and the nobility, called the Cortes to
Valladolid, which was more numerous attended than the meeting at Toledo. This body offered him the crown, which he refused to accept, but was united in the sentence of the nobility pronounced the sentence of deposition against his aged brother, and proclaimed Sancho king of Castile and Leon and father of the country. Alonso, seeing himself now abandoned, by the nobility and the masses under his relations, and deserted by all his friends, went to his ever-faithful Seville, and from that place wrote a letter to Alonso Perez de Guzman, who was at Marocco, and enjoyed the favour of Aben Yussef, describing to him in the most affecting manner the terrible situation in which he was placed, and requesting the aid of the African monarch, as a pledge for which Alonso sent to Yussef his royal crown. This prince immediately dispatched Guzman with a considerable sum to Seville, and soon after himself, at the head of a large force, which was sent out in due course. At Zahara the two kings had the first interview. Alonso rose from his seat and offered it to Yussef, but the African monarch would not accept this honour, and courteously said to the Castilian, 'Sit thou there, who art a king from the cradle: I am necessary only to give the best manner of conducting the war, the Africans marched to besiege Cordova, where the prince was.

Alonso returned to Seville, and collecting as great an army as he could muster, he decided to join the besiegers. Furthermore, all the garrison declared the town with courage, and after twenty days the siege was raised. The Moors retired to Cejiz, having done nothing but devastate all the country round. Alonso, while on his march towards that place, being informed that the Moors wished to keep him prisoners, secretly went to Seville. The African chieftain, feeling that his loyalty should be put in doubt, re-embar- rassed for his country, not, however, without leaving to his friend a thousand chosen horsemen, and requesting to be permitted to keep them for the safety of the town, this was calculated to gain his confidence.

Alonso now held a solemn junta at Seville, and disinherited Sancho, pronouncing a curse against him as a rebellious and unnatural son. Sancho, however, was not at all affected by this proceeding; on the contrary, his party became every day more numerous, and, having another son, to give a better colour to this step, he was advised to direct his arms against the King of Granada, who had embraced the cause of Sancho. He also endeavoured to obtain assistance from France. At last he employed the arms of religion, and requested of Pope Martin V. to excommunicate his son. The pope complied with his wishes, and the rebellious towns were placed under an interdict. Sancho began to be deserted by all his friends: the first who set the example were his two brothers. Some of the towns revolted against him and returned toGranada. His kind father again used means of reconciliation, and an interview was planned, but did not take place.

Alonso returned to Seville, and, overpowered by so many misfortunes, died on the 21st of April, 1234. In his will he excommunicated his son, but, on the death of his children, the sons of Fernando, should succeed him, and in case of their death, the King of France, and made no mention of Sancho, who, however, succeeded him. Alonso was buried at Seville. 'His sepulchre,' says Mariana, 'is not very rich, nor was it necessary that it should be so: for his life, notwithstanding his faults and the calamities that happened to him, renders his name and memory eternal. He would have been a greater king if he had possessed the knowledge of himself, and the excellent qualities by ambition and severity. He was the first king of Spain named in public documents to be written in Spanish, with the view of polishing and enriching the language. He caused also the Bible to be translated. It is indeed astonishing; adds he, that he brought into war, and exercised in arms from his early youth, should be acquainted with astronomy, philosophy, alchemy, jurisprudence, and history, to a degree scarcely attained by men enjoying a life of leisure, or having no other occupation than study. He has left us a monument of his learning, or of his patronage of learning, in his Cronica de Espana, in the astronomical tables called Alfonsinas, in a code of laws denominated Las siete Partidas, and in some poems and other productions, which are still useless.

His will was not favourable to deprive this learned prince of the merit of having been the author or compiler of Las Partidas, protesting that this code was written by his father. It is, however, worthy of remark, that every one of the Partidas begins with one letter of his name, forming the following acrostic:

1st. A l servicio, &c.
2d. La fè católica, &c.
3d. Fijo nuestro Señor, &c.
4th. O aras seculares, &c.
5th. N asencion entre, &c.
6th. E sumadamente, &c.
7th. O lvidanza y atrevimiento, &c.

The acclamation of blasphemy, with which they have written his name, is, in our opinion, based on no other authority than a revelation which an Augustin monk at Molina had from heaven. This miracle is related at full length in the History of Spain and Portugal in Lardner's Cabinet Cyclopaedia, Appendix L, vol. ii., p. 317. Upon the life of the King of Castile, Mariana's Historia de Espana; Garibay's Compendio Histórico de las Chronicles; Nicollao Antonio, Bibliotheca Hispana vetus; &c.

ALONSO XI. king of Castile and Leon, succeeded his father Fernando IV. in 1312, being so a young age. A long series of convulsions attended his minority. When he came of age he quieted the intestine disturbances, and seriously pursued the wars against the Infidels. He took Turia and Alcocebas from them, but died of the plague at the siege of Cordova, where the disease was not experienced. His memory has never been rewarded by the Spaniards, had he not stained it by the murder of his kinsman Juan el Tuerto, and his amours with Doña Leonor de Guzman. He was succeeded by his son Pedro the Cruel. (See Villaslan's Cense del Reyno de Aragon; Cuesta's Historia de la Casa de los Reyes de Aragon; libro 2. parte 7.; and Mariana, Libro de los Reyes de Aragon; libro 7.; &c.

ALONSO II. King of Aragon, surnamed El Batallador, the Battler, succeeded his brother Pedro in 1104, and having married Queen Urraca of Castile and Leon, was styled king of those provinces also. The unprincipled conduct of his ancestors was calculated to make a bad impression on his son.

Alonso, now free from internal troubles, turned his attention to the country. The lessens, however, was not the only step taken in the cause of the Aragonese. He also restored convulsions: Alonso II. was calculated to gain his confidence.

Alonso now, from the blood of the infidels, turned his attention to the country. This was not the only step taken by him to win the hearts of his people, and to establish his dominions. He was succeeded by his son Pedro, and by Ramiro II. (See Florez's España Sagrada; Chronica Aedefonc Imparatoris, vol. xi.; Rodericus Toletanus, De Rebus Hispaniis; Mariana, x. 8.)

ALONSO II. succeeded his mother Petronila on the throne of Aragon when he was only eleven years of age. In 1167 he became Lord of Provence, by the death of his cousin, Count Gerard. He extended the frontiers of his kingdom on the side of the Mohammedans, penetrated into the territory of Valencia, and aided Alonso I. of Castile. These important events were made at the expense of paying homage to Castile. Alonso died in 1196; and according to a custom very prevalent in Spain at that period, he divided his estates between his children, leaving Aragon, Catalonia, and Roussillon to his son, and Pedro II. the second son. (See Rodericus Toletanus. Mariana, x. 9–13.)

ALONSO III. was the son of Pedro III. King of Aragon. At the death of his father, in 1285, he was at Mayora, where he had been sent by his father to dethrone his uncle, who had usurped the sovereignty of that island. Having succeeded in his expedition, he returned to Aragon, and found the Cortes assembled at Saragossa. This body sent a deputation to meet him at Saragossa, to announce their surprise at his having assumed the title of prince previous to his taking the customary oath before the Cortes of the realm. Not without great difficulty, and after
many tumultuous debates, Alonso was acknowledged king, upon submitting to all the conditions required by that body. Having thus saved his life, he remained at home, but turned his attention abroad. The dethroned King of Majorca, now Lord of Roussillon and Montpellier, invaded Catalonia, but on the approach of Alonso he retreated. The Aragonese crossed the frontiers and laid waste the French territory. Besides this affair, Alonso had to contend with the pope and the King of France, who strongly advocated the cause of Charles of Anjou, Prince of Salerno, then a prisoner of Alonso. Through the mediation of Edward I. of England, Charles obtained his liberty upon the promise of renouncing his right to the throne of Sicily, and the condition that the election of the pope and the King of France to this measure; in case he could not succeed, he was to return voluntarily to his confinement. Charles was unsuccessful, and Alonso, though he saw the united power of France and the pope threatening his crown, led an army to defend his inheritance. Edward peace was obtained, although on conditions somewhat humiliating to Alonso. Edward offered him the hand of his daughter Leonora, but before the negotiations were terminated Alonso died at Barcelona, in 1291, and was succeeded by his brother Sancho II. (See Zurita's Anales de Aragon, vii.; Mariana, xiv.)

ALONSO IV, son of Jaime II., ascended the throne of Aragon in 1327. The Genevoise not only fomented dissension in his new conquests of Sardinia, but even dared to attack the feudal power of the Spanish monarch, but his efforts were defeated by the combined forces of the Aragonese and Genoese, and he returned to Barcelona. In 1332 he was compelled to cede to the pope the county of Asturias, which was given to the Bishops of Elx. Alonso died at Barcelona in 1363. He was succeeded by his son, Pedro IV. (See Zurita's Anales, book viii.; Mariana, book xiii.)

ALONSO V. [See ALONSO I. of Sicily.]

ALONSO I., King of Portugal, was the son of Henry, Count of Bejaçom, who held Portugal in fief at the time of the Crown. At his father's death Alonso was only two years old, and his mother governed the state in his minority. This princess, however, being a woman and not trained for the duties of a prince, caused the country to be embroiled in many disputes. In 1165, at the age of nine, he was forced to array his army against his parents, taking the field himself. The king made no further resistance, and Alonso was proclaimed King of Portugal. On the death of his father in 1139, he inherited the throne of Portugal.

In 1146 Alonso took by assault the fortress of Santarem from the Saracens, and put to the sword the entire garrison without any distinction of sex. In the next year he took Lisbon, when the fleet of English crusaders, who were going to the Holy Land, rendered him very effectual assistance. He afterwards reduced Cintra, crossed the Tagus, and made himself master of the whole country of Alentejo and Alemtejo. In 1158 he reduced Alcâzar-do-Sal after a siege of two months. In short, Alonso almost freed all Portugal from the yoke of the Saracens.

This king, the founder of the Portuguese monarchy, was not a warrior only—he was also a legislator. Under his reign a code of laws was promulgated at the Cortes of Lamego. These laws chiefly treated on the succession to the crown, the duties of the nobles and the people, and the independence of the kingdom.

ALONSO V. (See Zurita's Anales, book vi.; Mariana, book xiii.; Lemos, book xiii.)

ALONSO II. ascended the throne of Portugal in 1211, on the death of his father Sancho I. He began his political career by endeavours to deprive his sisters of the castles bequeathed to them by their father. This step led to a war which involved the whole kingdom, and the rebellion of the castellans. This war was productive of many evils to his kingdom. In his conquests over the Saracens he did not signalize himself so much as his predecessors had done. Alonso seemed not to have held the church in very high estimation, and did not trust to the clergy for personal military service, and their possessions to contribute the same as the laity towards the support of the state. In fact, he attempted to abolish entirely all ecclesiastical immunities. The consequence of these measures was that Pope Honorius III. placed the kingdom under an interdict. Alonso was forced to yield, and was pardoned on his promise of making ample satisfaction for his past offences. Before he could fulfill his promise he died, in 1223, and was succeeded by his son, Sancho II. (Rodericus Toletanus, book viii.; Lemos, book xiii.)

ALONSO III. succeeded his brother Sancho II., in 1248. Before his accession, through some cause not sufficiently stated by the historians, he was a poor exile in France, when Matilda, Countess of Boulogne and Flanders, not only gave him protection, but also, by her marriage, appended to his person the counties of Flanders and Artois, which formerly had been held by his father. Alonso was acknowledged the lawful king by all classes of the nation. His brother finding himself deserted by his subjects fled to Castile, and after some fruitless attempts to procure his restoration, retired to Toledo, where he died in 1248.

Alonso embroiled himself with his namesake of Castile about the possession of Algarve, but finding his antagonist too powerful for him, he sued for peace. This peace was confirmed by Alonso's marriage with Beatriz de Guzmán, a natural daughter of the Castilian, the Portuguese king shamefully deserting his great benefactress, the virtuous Matilda, on the plea of her barrenness. Alonso's conquests from the Mohammadens were not very numerous. He died in 1279, after a reign of thirty-one years, and was succeeded by his son Dennis. (See Chronicas Coimbricenses; Mariana, book xii.; Lemos, book xiii.)

ALONSO IV., surnamed the Brave, ascended the throne of Portugal on the death of his father Dennis in 1325. During his father's lifetime he rebelled against him through jealousy of the partiality shown by Dennis to his illegitimate son Alonso Henriquez. Several times both father and son were reconciled, but on one occasion Alonso committed murder. On the death of his father, he became regent of Portugal, and succeeded in restoring the rights of his father.

His first act was to exile his illegitimate brother, and deprive him of his honours, and even of the Duchy of Albuquerque, which he held by his marriage with the heiress of that family. In the early years of his reign he almost entirely abandoned the concerns of the nation, devoting them to the care of his own person. But, after many abortive attempts in favor of his brother, he was forced to take up arms with the Castilian, and finally submitted to the authority of the king of Castile, whose general in the person of Juan Manuel, was embroiled with his son-in-law Alonso XI. of Castile. Sorely was his dispute with the Castilian settled, when he had to encounter the disturbances of a more serious nature, in the unhappy war with Inex de Castro his mistress. His own weakness, and a mistaken zeal for the welfare of his kingdom, induced him to give his consent to the barbarous murder of that unfortunate lady, which plunged the state into a civil war. After this, Alonso died, and was succeeded by his son, so Heaven permitted his crime to be visited on him, by the same conduct from his own son. His death took place in 1347, after a stormy reign of thirty-two years, and he was
succeeded by his son, Pedro I. (See Chronicon Combriciense; Lemos, book xvii.)

ALONSO V. was the son of Duarte. At the death of his father in 1438 he was only six years of age. His minority was very disturbed and eventful. His mother, Leonora of Aigues, who was appointed regent by her husband's will, was as a foreigner, obnoxious to the Portuguese nobility. Three uncles of the young king disputed the regency with her, and, after much bloodshed, she was obliged to quit Portugal, leaving the government in the hands of the Infante Pedro, the most politic and ambitious of the young king's uncles. In 1446, Alonso having reached his fourteenth year, seized the reins of government. The conduct of the young king, at first, was such as to promise a happy reign; but the enemies of the regent Pedro soon gained his favour and kindled the torch of a civil war, which ended with the death of the ill-fated regent.

In 1457 Alonso fitted out an expedition against the Moors. He landed in Africa with 20,000 men, and took Alcazar, Seguer, and Tangier. Notwithstanding his partial success, he encountered many reverses. He also engaged in an unfortunate war with Castile; and not long after, having concluded a peace with that nation, died of the plague in 1479, in the forty-ninth year of his age, and forty-third of his reign.

Alonso V. collected a copious library, and gave his protection to all literary persons. He was succeeded by his son Joao II. (See Ruiz de Pina's Chronica do Senhor Rey Dom Alfonso V.; Mariana, book xxxi.; Lemos, book xxvi.)

Alopecurus pratensis, the meadow foxtail grass, a valuable plant to the farmer. It is so much larger than any other British Alopecurus as to be easily recognised, and from Phleum pratense, which it resembles, it may be immediately known by its not having two paleae, and by its bearded, proceeding from palea to palea, and from the glumes. Alopecurus are scapose from the glumes, commonly in meadows, where it forms rather a coarse, but an abundant and early herbage, of which cattle are very fond. In such situations it is invaluable, but it becomes worthless if sown on light dry soil.

Alost, or AALST, a town of East Flanders, on the Dender, fifteen English miles W.N.W. of Brussels, 50° 25' N. lat. 4° 5' E. long. has a population of above 12,000, who carry on a considerable trade; vessels of small size being able to ascend the river's course from the sea down to Alost. Good roads are grown in the neighbourhood, and there is a considerable hop-market in Alost.

The streets of Alost are kept very clean by a number of volunteer male and female scavengers, who sweep up the dirt into small heaps and carry it off to certain places assigned for this purpose, where it lies till they can dispose of it to the farmers. The farmers have a kind of religious feeling in favour of the manure collected by these poor people, and think that their charity in purchasing, at a somewhat higher rate, from these inducements scavengers with the largest efficiency. The street-scavengers show a most conscientious scrupulosity in not invading the dung-heaps of their neighbours.

Alp ARSLAN, (i.e. the Brave Lion,) or with his complete name, Mohammed ben Dawd Alp Arsalan, born in 1037, was the son of a nephew of Seljuk Beg, whom the Abbasside Caliph Kaim-biamr-ullah had, for the protection of his throne, invested with the dignity of Emir al Omara, or Commander-in-chief of the whole empire, and who, when nearly seventy-five years old, had also married a very young daughter of that caliph. Seljuk Beg died in 1063, and as he left no children, his nephew, Alp Arsalan, who had till then been governor of Khorasan, succeeded him as Sultan of the Seljuks. Alp Arsalan restored the youthful widow of Togrol Beg to her father, demanding, at the same time, to be appointed Emir al Omara in the place of his uncle, a request which the caliph could not refuse. One of the first acts of Alp Arsalan's reign was to put to death the grand vizir of Togrol Beg, together with six hundred of his adherents. Nizam al-Mulk, who was chosen for that office by Alp Arsalan, has earned the reputation of one of the greatest statesmen of the East. Alp Arsalan was about to extend his dominions by conquests in Transoxiana, when a revolt in Azerbaijan, which disgraced both the past and the present record of the Seljuk race, put an end to these designs. He defeated the rebellious prince near the city of Rei, and resumed in the ensuing year (1066) his conquests in Transoxiana, while his vizir Nizam al-Mulk endeavoured to promote the welfare of the interior, and to advance the interests of literature and education. He was the founder of the principal towns of the empire. The greater part of Syria was at this time already in the hands of the Turks, and the troops of the Greek emperor offered but little resistance to their further progress. Romanus Diogenes, who came to the throne in 1068, resolved to take more vigorous measures against them. He joined his army in person, and defeated the Turks in several battles in Cilicia and near Malatia; but he was unsuccessful in an expedition against Khelat, and, in 1071, taking prisoner a bondman at Malatia (near Melitont) in Armenia. Alp Arsalan treated him generously, and on his promise to pay a considerable ransom, released him and all the noble prisoners from their captivity. But the Greeks had, in the mean time, planet Michael Mangana upon the throne, by which circumstance Diogenes was prevented from fulfilling his engagement. This caused a renewal of hostilities. Alp Arsalan's son, Malek Shah, conquered Georgia, while the sultan himself was preparing an expedition against Turkestan. He crossed the Oxus, and commenced a hostile occupation of the fort of Berzem; its governor, Yusuff Kothual, was led before Alp Arsalan as a prisoner, and when reproached by him for the trouble he had given him by his long and useless resistance, became so incensed, that he rushed upon the sultan, and with a dagger inflicted a mortal wound upon him, of which he died (1072.) Alp Arsalan was buried at Merw in Khorasan. His son Malek Shah succeeded him in the government.

ALPES, BASSES, (The Low Alps,) is one of the departments formed out of the old Provence, with the addition of the rich valley of Barcelonetta, which was in Dauphiné. It is on the frontier, and has the county of Nice, in the continental dominions of the King of Sardinia, on the S. It is surrounded by the mount, the S. by the Vercors, the E. by the Tete de la Saulce, and the W. by that of Vaucoule, and on the N. by that of the Hastes Alps (High Alps). It lies between 43° 41' and 44° 48' N. lat.

The chief river is the Durance, a rapid stream which rises near Mont Genèvre, passes through the department of the Higher Alps, and, after separating from it that of the Lower Alps, enters the latter, and crosses it from N. to S., ultimately falling into the Rhone a little below Avignon. The tributaries of this stream are the Ubaye, the Tinée, the Ais, and the Verdon, which last forms the southern boundary of the department. These successively fall into the Durance on its left bank. The rivers and streams of the department often cause great mischief when they overflow their banks. The surface of the department includes 2811 English square miles, with 153,000 inhabitants, being about...
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formed
westerly
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department,
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Sardinian
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ALPES,
MARITIMES, a department formed out of the county of Nice and the principality of Monaco, while those belonged to France, but which was done away when they were ceded by France in 1815.

ALPHABET is the name given to the series of letters in different countries at different times. The term is borrowed from the Greek language, in which alpha, beta, are the first two letters; or if we go a step farther back, we should derive the word from the Hebrew, which gives to the corresponding letters the names aleph, beth. In the formation of the alphabet, as of most or all other languages, that of our familiar expression, the A, B, C, and some writers have found a similar origin for the Latin name given to the letters, via, elementa, which, it must be added, bears an extraordinary similarity in sound to the three liquids, L, M, N. It would be difficult to account for the two letters, A and B of our alphabet, except by the notion of a single letter, which has been so fruitful as the invention of the alphabet, and the very circumstance of the invention being essential to this effect, and therefore preceding it, has made it a task of some difficulty to point them out. And another, which the discovery was made, for historical evidence upon such a point must be very imperfect. The present age, however, has nearly surmounted this difficulty, and we begin to see pretty clearly at least how the discovery might have been made, perhaps as early as 1520, a date when the philosopher Gassendi, Sistoron, equal to Digne in population, is 24 miles N.W. of that town, measuring by the road, which takes a considerable circuit. The altar of the cathedral is adorned with a painting of the Virgin and Bette, N.E. of Digne, has a population of 17 or 1800; Castellane, S.E. of Digne, is rather more populous; Forcalquier, S. W. of Digne, has rather more than 2100 inhabitants. Each of these four is the capital of an arrondissement, of which Digne is the chief. Digne is on a hill, the remaining on a wing that of Digne, Riez, noticed above, has nearly 3000 inhabitants.

ALPES, HAUTES (The High Alps), a department, lying along the northern boundary of the last-mentioned, which it resembles in its aspect, is about 175 miles long, and forms part of the magnificent mountain chain from which it takes its designation, pervade it, and form valleys, through which the Durance, and the minor streams which fall into it or into the Isère, (another tributary of the Rhone), take their way. This range of arctic objects, the characteristic of this department; it rises near Mont Genèvre on the eastern frontier; it receives on the right the Guranse, the Gyronde, and the Buech, a longer stream than the other two, and which does not join the Durance till after it has entered the department of the Low Alps; on the left it receives the Servies and the Gual. The Drac flows first in a westerly and then in a northerly direction, and falls into the Isère, in the department so called, which adjoins that of the High Alps on the N.W. To the south, the boundary is formed by the main chain of the Alps, which separates the French and Savard dominions; and the communication between these at this part is by the pass of Mont Genèvre, about 6400 feet above the level of the sea. [See GENÈVRE, MONT.] To this is added the sweet, smooth, and pleasant climate of that department.

Several of the summits in this department are among the loftiest of the Alps. The highest point is Mont Pelvoux de Vallouise, which is 13,438 English feet above the level of the sea. Mont Vano, which, if not in the department, is under it, furnishes pastures for sheep, which have fine wool and flesh, and for goats. About 17,000 acres are devoted to the cultivation of the grape; nut-oil is also made. The quantity of wood-land is greater than in the department of the Low Alps, being about 180,000 acres. The mineral wealth of the department is considerable, and includes copper, lead, zinc, iron, antimony, &c. The population is 125,000, being rather larger in proportion to the surface (2101 square English miles) than in the department just referred to. It sends two deputes.

The department is divided into three arrondissements, viz. Grenoble, the capital, is a town of 7000 inhabitants, situated in a small plain bounded by mountains, which form an amphitheatre. [See GAP.] Briançon, is not far from the source of the Durance, and is remarkable for its strong position and its elevation, being about 2800 feet above the sea, and 4000 feet above the level of the Rhone. The valleys are inhabited, and the river in number, carry on a trade in woollen and cotton goods, and cutlery. Embrun, much lower down the stream, has 2300 inhabitants, possesses a fine episcopal palace, (for it was once the seat of a bishop,) and is remarkable not only for the town, but for another, which has been built by Charlemagne. In Lake Pelvoux, near Gap is the 'Trembling Meadow,' a small floating island. (For the heights of the mountains, see OROGRAPHIE DE L'Europe.)
bell is attached to it, the ringing of which first directs the party who is to be addressed to apply his ear to the other extremity of the pipe. The result of a comparison then between these two forms of language may, perhaps, be fairly stated thus. The language of the pictorial symbols is more easily invented and understood at first. The other, when once invented and understood, is better adapted for the ordinary uses of life. The difficulty of invention, however, is a difficulty that occurs but once; the difficulties in the after use of the language are, nevertheless, the same. In the last place, sound travels without the aid of light. It is therefore natural to conceive that oral language would approach a comparatively perfect form with much greater rapidity than that which addresses itself to the eye. The latter might soon come to be desirable for a shorter or longer time the acts and thoughts, and commands and duties of man; and here the language of the voice would utterly fail, while the other might ensure a continuance of existence, depending upon the nature of the material on which the representation might be made.

In less than a second the sound of the human voice dies away, but the picture even on the sea-sand lasts until the next tide washes it away; the waxen tablet would preserve its characters long enough for the purposes of epistle or of other permanent retention; the leather, the cotton, the bark of trees, the hard woods, the skins of animals, would retain the impressions upon them for centuries; and lastly, bricks, and stone, and metal, under favourable circumstances, might convey their records to a posterity of many ages. Now to represent visible objects, as we have already stated, be an easy affair, and the signs for abstract qualities might be obtained, as in sounds, upon the principle of association. But instead of forming a new series of associations, which would not easily become generally intelligible, it would no doubt be found more convenient, occasionally, to turn to the already existing language of sound. A few examples may perhaps explain our meaning. Visible objects, in the first place, in the same way as we connect pictorial symbols with the word ox can so readily convey that notion to the mind as the representation of the animal itself, or, in order to save time, that part of the animal which is most characteristic of it might, and would be selected; in the present case we should represent only the head of the animal. To signify a visible action, such as fighting, we should, perhaps, avail ourselves of the flat, as the natural organ for that purpose belonging to man, following therein the same direct principle of association which has formed the Latin word praeda from the elements pre and das. The word flat would in this way we should form a series of symbols altogether independent of the language of sound; but we repeat, it would often be more convenient to make the language of visible signs in part dependent upon the oral as, indeed, the ancients have frequently been so. But this fact a species of punning: If, for instance, a symbol were required of an Englishman for the abstract notion of friendship, he might employ the two separate signs for a friend and a ship; the first of which we will suppose to be two Hebrew letters, the second, 521, from the elements 52 and 45, as met, for instance, in the Hebrew names of the letters, which it will seen have been borrowed, with slight changes, for many other alphabets. But it will be objected that, in fact, the letters, whatever they may be called, bear no pictorial resemblance to the objects they represent. If the Hebrew characters alone be considered, this objection will not be unreasonable. But there is strong reason for believing that the present Hebrew characters are of comparatively modern date, and if so, there is nothing very violent in the supposition that the may have been derived from an earlier pictorial form, as the entomological Egyptian hieroglyphics. It is now established, arose from the corruption of their hieroglyphics. But not to rely too strongly upon theory, we may appeal to what are virtual Hebrew alphabets, though called Phenician and Samaritan. In Plate I. (p. 382) Nos 3, 4, 5, the reader will see specimens of these alphabets. The first two are taken from Bosch's Inscriptions, pp. 321, 327, and from the coins given by Mionnet. The Samaritan characters for the names of beasts and birds, of these, we find a few at least, which, even to the sober minded, bear considerable resemblance to the natural objects. The first letter in these alphabets, aleph, it is well known means ox; indeed, the terms Wild, Ost, ez, from the Greek word oryx, from that name, is well known to be derived from this Hebrew name. If in Syria the name aleph was extended to the elephant, just as the Greeks applied their term crocodil, properly a lizard, to the monstrous creature when the word came to the western nations with the triple sign, the word would be readily but in the secondary. The Romans too called the same animal Bull, the Latin name becomes, the Latin Ors. We have already stated that the most simple mode of representing an ox would be by a picture of its head and horns, and if any one will turn the engraving of our second Phenician character, so turn...
have the angular point downwards, he will see a very fair picture of an ox's head, with its two horns, and ears into the bargain. Those who are determined to take nothing for a representative of an ox that has not a body, four legs, and a tail, may be asked to account for the astronomical figure of taurus in the zodiac.

In Greek, the Hebrew name for the letter μ was mem, and this also was the name for water. Now a very ordinary symbol for water is a zigzag line, which is no doubt intended to imitate undulation or rippling. We find this symbol for aquarius in the zodiac, and we find it also in Greek manuscript characters of our plates, as well as in the other Hebrew letter having the symbol inclosed in a large circle or theta, the latter having its aspirate duly placed above the waving line. Indeed every boy in his first attempt to draw water, represents it by a zigzag line. But before we point out in this chapter the characters in which the aspirate is employed, or can be (to be candid) as being the corrupted remains of what once was a wave, we must premise a few words on the characters of the older Western languages. We have already asserted our belief, that the Hebrew characters now used are of more recent form than those in the Phoenician and Samaritan alphabets—we will now go one step farther, and express our opinion, that in many of the characters, the Greek alphabet and the Etruscan (which, notwithstanding the derivations of each from a common source) generally present a more accurate picture of the original letters than those of the three former alphabets. That all these alphabets are identical in their origin, we will presently show in more detail. It is enough here to rely upon the evidence of certain inscriptions, has shown already (p. 181) (and he speaks from his personal examination) that the Ionians received their characters from the Phoenicians, and that they were actually called Phoenician. Now, there is no doubt that the inscriptions from which we have taken the Greek characters, have experimented with the letters of the Phoenician inscriptions given in Boeckh, or the coins which furnished Mionnet with his characters. Hence, we may naturally expect to find at times in the oldest Greek characters traces of a higher antiquity and purer forms than those common on the continent, not those which are peculiar to ourselves; viz., i like e, and as in father, as in bone, u as oo in food.

The letters again should be written in the order r, t, m, s, beginning from the throat and advancing along the palate and teeth to the lips; or in the reverse order. The letters have often been divided according to their organs: 1st. The guttural and palatal, g (as before a), k (with c) \( gh \), ch (as in the Scotch lock); \( h \), with perhaps \( y \), \( w \), and \( v \). 2ndly, dentals, d, t; \( dh \) (as in this), \( th \) (as in this), z, \( dz \); \( dz \) (as in French). 3rdly, labials, b, p, v, f, and w. Perhaps the four last of those we have included among the dentals partake in an equal degree of the palatal character. In the above enumeration of the consonants, we have first their respective sounds, and then in the middle (or medial) letters \( g, d, b \); then the lenus, or more delicate letters \( h, t, p \); and then the aspirates; but as each class presents two forms of the aspirate readily distinguished by the ear, and as these pairs are so sound in their formation, we have grouped them under one another as the medials and lenus; we have throughout placed what we may perhaps call the middle aspirate before its delicate relative, viz., \( gh \) before \( c, a \); \( ch \) before \( h \); \( th \) before \( b \); \( v, f, w \) may be considered totally aspirate; viz., \( v, f, w \)

In Greek, the aspirate is represented at first with tolerable precision, it would, in the inevitable course of degradation, soon become a mere oval, or rather circle (for the eyes of animals are generally circular) with a small dot in the middle. We will consider the aspirate in the middle of the skeleton, and we will then consider the aspirate in the middle of the skeleton, which is actually written as a combination of the vowels, having an affinity to the opposite extremities of the vocal series, y, i, e, a, o, u, w; and thus we may consider the commencement of the series as connected with the throat, and the termination with the lips.

The aspiration of two sounds is made by placing between them an aspirated letter, which is then pronounced as a separate sound. These aspirated letters are placed in vertical columns, while those belonging to the same organ are collected in horizontal rows, affords a good view of them. But the parallelipodion furnishes an arrangement superior to that of the skeleton, in which the aspirates for the silabants, the angular points of the prism may be employed; while the vowels and liquids require nothing more than a simple line.
1: Consonants.

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<tr>
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<td>d</td>
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<td>g</td>
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<td>i</td>
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<td>m</td>
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<td>r</td>
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<td>v</td>
<td>w</td>
<td>x</td>
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<tr>
<td>y</td>
<td>z</td>
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</tbody>
</table>

r

l

n

m

y

i

e

a

s

ou

w

In the preceding parallelopipedon, the three horizontal planes, beginning from above, represent the guttural or palatal, the dental, and the labial letters. The front vertical plane indicates the place of the lips, and the back, that of the tongue.

The left vertical comprehends the medial letters, that on the right the tenes. Every letter is, of course, at the intersection of three of these planes, and may be defined accordingly.

A peculiarity of the letters according to the actual nature of the sounds is of considerable use in the examination of those numerous euphonous and dialectic changes which occur not only in the polished language of Greece, but also in those languages which are inconsiderably called by the name.

In the horizontal, and to a certain extent also in the vertical, divisions interchangeable with their neighbours, but the twelve consonants arranged in No. 1, are in fact also related to the liquids, and even to the vowels.

As these consonants extend from the throat to the lips, so do the liquids, and the vowels also, y and e being formed in the back of the mouth, u and a at the lips. In fact, the principle of lengthening the vowels in the same way as it is done in the Greek.

In comparing, therefore, our ordinary consonants with the liquids and vowels, we find, as we might expect, closely related to y, as our language in its older forms, and even its existing dialects, fully establishes. The intermediate of again has an affinity for ʎ, η, and ι, at the labial extremity of the consonants, is intimately related to m, w, and s, at the corresponding parts of the other series. To make our views include the whole body of letters, it remains to be observed in the first place, that had the nasal organ been considered, we should have had a series of m, n, ng with their intermediate sounds depending partly upon the nose, and partly upon the lips, teeth, and palate, respectively. In the Sanskrit alphabet, the series of guttural, palatal, lingual, dental, and labial consonants, have an n belonging to each class with a distinct symbol. That which governs the guttural sounds is a sound analogous to our ng in ringing.

The nasal of the labial series is of course m. The other omission of our tabular view is the letter h, which, when pronounced at all, is a faint representative of the guttural aspirated. In the Druse alphabet, the nasals and h, and are given indifferently to the eighth letter, and the etymology of every language would supply examples of the connexion.

Having endeavoured to arrange the letters of the alphabet upon some principle, we cannot pass over in silence the apparent confusion in the alphabets we have been speaking of the Hebrew and Greek. That the order observed in the latter is borrowed from the former can scarcely admit of a question. For though the vau of the Hebrew has no cor-

responding character in the later Greek alphabet, it is yet well known that it once had such a correlate in the digamma, at least in power; and that the digamma was actually lost from the sixth place is proved from the gap at that point in the numerical use of the Greek alphabet, and the clumsy contrivance of filling it up by the letter e. The position of the letter E, in the Roman alphabet, is a proof in confirmation.

The teadi of the Hebrews can never have had a place in the Greek alphabet, but the following letter kappa most assuredly had, as is proved both by the existence of that letter in many of the older Greek inscriptions, and the use of the symbol, and no less decidedly by the insertion, as before, of a numerical substitute, which even retained the name of kappa.

It may be observed too, that the Latin q, of the same power and form, corresponds also in position; and the close connection between kappa and q is further manifest in the Etruscan, which had a u, but no o. It is not, therefore, a very bold thing to assert that the early Greek alphabet terminated at the same point as the Hebrew. There is, however, a difficulty which should not be neglected. It has been a common notion, that the alphabet consisted of only sixteen letters. But Pliny and Plutarch seem, in the first place, to be the sole authority for the statement; and the assertion of the former, that Palamedes in the time of the Trojan war (l) added G, H, X, and Si monides, must be rejected. All of them many difficulties that belief could not readily be given to him, even were there no counter authority. For upon what principle could the Greek letters have attained their present order, if they were introduced according to the tabular arrangement given by Pliny and Plutarch in the very passage of Pliny referred to (v. 56, or 57) he gives another statement from Aristotle, differing from his own in several particulars, but it must be confessed not more satisfactory. They mutually serve, however, to weaken the authority of each other. In the first place, it may be observed that the long vowels ο, ο, the double letters ζ, ζ, the aspirates Θ, Θ, Θ, are excluded by Pliny. In defence of Θ, Θ, Θ, Θ we say nothing; but the character H certainly did exist, not indeed as a long vowel, but as an aspirate. The character Α, Α, Α, is mentioned by Herodotus, and the theta the old alphabet possessed a complete trio of aspirates: so erroneous is the notion that they should all be excluded. Lastly, as for ξ and ξ, the circumstance of their situation corresponding precisely to the ζι and ζι of the Hebrew, would induce us to desire them, even at the risk of supposing (if such supposition be necessary) that, in their original power, they were not double letters. We do not, however, mean that the character existed, but that sibilants of some kind occupied their places. The correspondence of the Greek with the Hebrew is in the order and power and names of the letters is an argument of much stronger weight than any testimony from such careless and late writers as Pliny and Plutarch.

But we are digressing too long from the question about the principle, which governs the arrangement of the Hebrew or old Greek alphabet, if principle there be. Though we cannot satisfactorily account for the whole order through out the twenty-two letters, there are certainly traces of some regularity in the arrangement. We find first the simplest series of the vowels sounds followed by the liquids, β, γ; then another vowel, followed, with some irregularity indeed, by aspirates corresponding in order to the above consonants, θαυ, θεθ, θθθ, no bad representatives of ϑ, ϑ, ϑ. Then again we have a vowel, followed soon after by three consonants related to each other, λ, μ, ν. Soon after we find a fourth vowel ο, and after it, in a little disorder it must be allowed, πι, κοππα, ταυ. It cannot well be a mere accident that the several classes of labials, palatais, and dental occur
so nearly together in the different parts of the series, and always in the same order. It will, perhaps, here be observed, that in these remarks we are unintentionally confirming the assertion of Pliny and Plutarch about the sixteen letters, the more so as Plutarch speaks of four quartenions. The objection to such an explanation of their statements is to be found in the difficulty of imagining a language to exist without a sibilant; otherwise the absence of an r might readily be supplied by l, as is actually the case in some languages. As for the sibilant, however, the th might possibly represent that sound.

The accompanying plates require a few remarks in addition.

### Coptic

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<tr>
<td>Bita or Beta</td>
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<tr>
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<td>g</td>
</tr>
<tr>
<td>Delta</td>
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<tr>
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</tr>
<tr>
<td>Lambda</td>
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</tr>
<tr>
<td>Kappa</td>
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<td>Lamed</td>
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<td>Pi</td>
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### Ethiopian or Abyssinian

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### Additional Amharic Letters

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### Moeso Gothic

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<td>F</td>
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### Antikes

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<td>F</td>
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<td>E</td>
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* The name of the 26th letter, and also its power, seem open to doubt, as the use of the same character in the letters 21—26 appears to imply that it has the sound of ao, or something similar. The Ethiopic is a syllabic alphabet, and it has a system of additional marks or modifications of the letters, marking a change of vowel, not unlike the points of the Hebrew. We have not thought it necessary to insert these.—Des Ludlott.
tion to what has been already said. The first plate contains alphabets running from the right to the left, a practice which seems to have been earlier than that which is now generally adopted. Herodotus tells us, (II. 36.) that such, too, was the practice of the Egyptians, and his assertion is confirmed by a considerable number of the existing inscriptions, among which, however, some are found running in the opposite direction, and still more arranged vertically. The Servian, Illyrian, and Roman.

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<td>1</td>
<td>l Aaa a</td>
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<td>5</td>
<td>g Stangen-xau g</td>
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SERVIAN. (Attributed to St. Jerome.)

ILLYRIAN.

ROMAN.

Among the Greeks, there were four modes of writing, one vertical (σταυρωδής or column-wise), and three horizontal, viz. one with the words running to the left; another, which soon prevailed over the rest, turned towards the right; and a third, in which the direction of the lines alternated, as in the course of a plough, from which idea, inscriptions of this kind are said to be written βοω-ατρωγή-δο, or ox-turning-wise. This last method must have been much more convenient than our present broad sheet of letter-press, in which the eye, on arriving at the end of a line, requires a nice perception of a straight line to hit the commencing point again. The second and third plates give numerous specimens of the Greek alphabet, which are taken chiefly from Boeckh's great work, now in progress at Berlin, and the numbers written after the titles at the head of each column refer to the order of the inscriptions in that work.

The several inscriptions which have furnished these alphabets exist in the following forms:—

No. 14. In two flutings of a Doric column brought from the island of Melos, now in the Nanian Museum—No. 15. On a bronze tablet found, in 1783 in Italy near Petilia, north of Policastro: it is in the Borgia Museum at Naples—No. 16. On a vase discovered in a sepulchre near Corinth. (See Dodwell, ii. 196.)—No. 17. On a votive plate.

PLATE I.

Alphabets from right to left.

N.B. The names of these letters are also the names of material objects.
Various.

A SO K X — O L 33 e r V A 31 s Y 15 P 17 « * "Sir A H I H C. z Y G £ TT £ V 2 h X A I w 0 C I t N Specimens t £ H 89 39' A o TT f On A and A On A P $ and £ 1 T On z T & p • o K 34 p 0 bronze X 55x1396 marble now —Nos. 181 Museum, (See Gell representation in 181 Museum, Pembroke Potidssa, 305, (Thucydides, i. 62.) It was found in the plain of the Academy near Athens, and is now in the British Museum. No. 290 — No. 30. The alphabet here given is that which came generally into use at Athens after the archonship of Euclides, 403 B.C. Specimens may be seen in the Elgin marbles of the British Museum, for instance in No. 305, the date of which is said to be 399 B.C.

The column No. 26 is from Mazocchi's folio on the Herculan tablet. The Codex Alexandrinus, No. 36, is in the British Museum. (See Alexandrin Codex.) The fourth plate relates to the Roman alphabets, including, however,

what are often called, but without good reason, Saxon alphabets. These last characters were undoubtedly employed in writing Saxon, but they were the ordinary characters used during the same period for Latin, and were, indeed, thence borrowed for the former language; their identity besides, with the preceding Roman letters, is very evident. Such of the Saxon characters as were not common to the Latin are placed below plate 4. The other alphabets have their names affixed, and also the titles and powers of the letters. The Coptic, Russian, Servian, Muscovitic are evidently derived, with some exceptions, from the Greek; and the same is perhaps true, in a great measure, of the Ethiopic, Illyrian, and Runes.

In passing the eye along the various forms which the several letters have assumed, we shall see a strong similarity running throughout—from the Phenician through the Greek and Etruscan to the Latin; and nearly all the differences which do exist admit of explanation, if a few points be taken into consideration. The form of a letter must, in the first place, depend much upon the nature of the material upon which it is written, and of the instrument employed. On hard substances where incisions are to be made, straight lines will naturally prevail. When the letter is merely painted or inscribed upon a very yielding material, two or more inclined lines are apt to degenerate into a single curve.

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**Plate II.**

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**Plate III.**

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Compare the forms of \( w \) (the third letter) in columns 16 and 21; of \( \delta \) (fourth letter) in 21, 23, and the Latin \( D \); of \( e \) (fifth letter) in 30, 33, and 34; of \( u \) in 30 and 32; of \( v \) in 30, and the Roman \( P \) in 1, 3, 4; of \( p \) in 20 and 21; of \( \sigma \) in 31, 32, and 33; of our own \( \nu \) and \( \psi \), both derived from the same Latin character, &c. Again, in incisions the different lines which constitute a character will be generally of uniform thickness, but when a split reed or quill is employed, the strokes in one direction will be thick, in the other fine. Such has clearly been the origin of the existing Hebrew forms. A principle of corruption, not less powerful, is the desire of rapidity, which is most readily obtained by connecting the different parts of a letter together, so that the whole may be produced by one movement of the instrument, or, more strictly speaking, without raising the instrument from the surface. Thus the \( e \) in 30 seems to be made by four separate strokes, such is certainly the case with the Roman letter in column 3; but that in 33 requires only two movements. The letters that in 34 are one. In the same way may be compared the forms of \( w \) in 36 and 37; of \( \delta \) in 30, 33, 35; of \( \pi \) in 37 and 38; of \( v \) in 36 and 37, &c. But there may be several ways of effecting this object; a letter moreover may be commenced at different points, and hence doubled to other forms for the same letter, even at the same period: compare \( \beta \) in 37 and 38; \( \epsilon \) in 34 with our own small running \( \epsilon \), &c. This principle of rapidity carried a step farther leads to the connexion of successive letters. In this way are formed what are called the cursive letters, or those which run on in continuous succession. Such modes of writing were no doubt common in very early times; and as regards the Romans, we are not left to mere conjecture, as the Brit-ish Museum contains an inscription of the kind on papyrus, which is referred to the second or third century. Lastly, a fanciful love of variety shows itself in all the works of man, and in none more than the arbitrary variations of letters, particularly those at the beginning and end of words. These several causes of change were more active, when none other aidings were produced by the pens of individual writers. In modern times, the art of printing has tended strongly to create a unity of form, and will be the best protection against future change.

Having spoken thus generally of the alphabets given in the four plates, we will now remark upon each character in succession.

Of the letter \( A \), one of the oldest forms, it appears to us, is in column 10, 25, or 3. The greater part of the other forms arise from the different inclinations of the cross stroke, which in 7 runs from the extremity of one of the main strokes, and in 2, 4, and 11 is too much inclined even to meet the opposite side. No. 2 again is a mean between 4 and 1, and shows how the Hebrew form has originated. There was also an ancient Irish form of this vowel, which may be described as formed from the \( I \) in 31, with a diagonal line running from the lower extremity on the right to the opposite angle; it was in fact the character in 14 or 16, with a square instead of a round or pointed top.—Of \( B \) it need only be remarked, that the Samaritan and Phenician forms show the progress of degradation between the Greek and the corrupted Hebrew.—The forms of \( \Gamma \) are chiefly remarkable for the different positions of the angle which constitute the letter. The second form in 6, 10, and 16 is also found in the coins of the cities Gala, Agrigentum, and Regium. (See Mionnet.) The third letter of the Latin alphabet has this form, and once possessed the same power. Hence, the oldest orthography of that language presents moxistrata, lectionum, for magistratuum, legum, and it is known that the common name Caius was pronounced Caius, and indeed was so written by the Greeks.—The form of the Hebrew daleth may be traced through the Samaritan from the Greek, in precisely the same way as the Beth. The difference between the Samaritan or Phenician letters for daleth and those for Beth consists solely in the lower stroke thrown out by the letter from the perpendicular, and the same is the case with the Hebrew letters; in both, the triangular or circular top has degenerated into a thick line. In the case of \( E \) it is very anomalous and very rare. Of the other forms the Samaritan is again purer than the Hebrew.—The next letter has been the subject of much controversy. The form in 8, 10, and 15, may perhaps be considered as the parent of all the rest; and again the Phenician has the advantage over the Hebrew, the form in 2 being intermediate between 4 and 1. The \( x \) contains a faint resemblance to \( G \) of No. 9, which is the oldest form of that Greek letter, and from which the late forms are derived, upon the simple principle already mentioned, of completing a letter at one movement, and therefore substituting the diagonal stroke for the perpendicular. The next letter has gone through violent changes both in form and power. Its original power seems to have been a guttural one, which would naturally wear away into a liquid aspirate; or perhaps more correctly, it may be stated, that its first power, as in the other letters, was syllabic, viz., che, which became \( H \), and in the Greek language eventually only \( \theta \). The two Hebrew names of the letters cheeth, heeth, and the Greek form eta, all bear evidence in favour of such a supposition, and it would be difficult otherwise to account
for the singular fact, that the same character H was at one
time the Greek representative of an aspirate, afterwards of
an initial A, and finally of a long e. In No. 26 of Plate II. H
is the long vowel, as a, in the 30 of Plate III; and those
which follow. In all the others which proceed, it is an ad-
pirated consonant. With regard to the various forms, the
character in 3, 4, 6, 9, 22 being supposed to be the purest,
No. 2 is half-way between the Hebrew on the one hand, and
18, 20, 21, 23. It requires no comment to state, that when
the letter H was appropriated as a vowel, the as-
pirate gradually lost its second pillar, until at last it ap-
peared in the first of the two forms given in the Hera-
clean tablet, the second in that column being, as we have just
seen, the original Hebrew of the Greek. The form of the as-
pirate appears in many manuscripts above the initial letter of the word, but was eventually further cor-
rupited into a mere comma, thus ('). There exists, it should
be stated, a story, that the Greeks derived their aspirate in a
mode somewhat different from the above statement.
The letter H, we are told, was cut into two parts, each consisting
of a pillar and half the cross stroke; the first half being em-
ployed as an aspirate, the second as what they call a soft
breathing, by which is meant to express the absence of the x
rate. A character to denote the absence of a sound is, it has
been justly remarked, something new in alphabetic writing;
and, in fact, it is now a common belief, that the soft breath-
ing and its supposed representative are the mere creation of
later Greeks. The former was probably a fair preponder-
ance, as the former soft breathing is found in no inscription whatever, and in no manuscript of any antiquity.—Of the next letter it need
only be stated, that the Hebrew character is generally con-
 sidered by modern Hebraists as a mere T, and it is often
called in this work, and in M. Maffei, the Hebrew kappa.
Setsubu, however, has always been more perfect than the
Greek in 9, 10, 11, 14, 15, 16, 17. The third of these, however, bears a close affinity to the Hebrew. The forms in 12 and 16 are gradually approach-
ing the straight line, which afterwards prevailed.—The koppa
is the only character which has been derived from the
Phoenician and Hebrew in 1, 2, 3.—Of μ and ν we have spoken before.—The same μ and Greek ξ present
many difficulties. Their forms, in the first place, have no
similarity; the Greek letter is rarely met with in old ins-
criptions, as it was confined to employ in its place the x
and the Hebrew η. The next letter has a great univers-
ality throughout, the chief difference turning upon the
different position of the angle as in the gamma; but it may
be observed, that the forms in 27 and 28 closely approximate
to the Phoenician and Hebrew in 1, 2, 3.—Of υ and ω we
have seen before.—The letter ζ is the subject of controversy, some calling it a
nasal consonant, others a guttural, others a vowel ω. The
first and third assertions seem more at variance than they
really are, for the close connexion between the two sounds
η and ω is well marked in the Portuguese tongue in the
pronunciation of such words as João, the representative of
our John or Johann. The Romans too thought it enough
to write Plata, where the Greeks wrote Platon. Lastly, if
the name 68, which is the date of the inscription of Lucullus
applied to another, it will be found that the liquid θ ought to
have an affinity to the vowels o and a, in the same way that the liquid m is related to w and v, and the past tense of the hebreish 'eth, maw, is as determined by the position of the θ and w.—But, to proceed, the Hebrew he has, it already
been observed, a stroke at the bottom which appears to have
something of the nature of a flourish. Remove it, and the
identity of the remainder with the Greek is self-apparent.
The reason of this, as will be seen, is chiefly due to modern printers. The Greek had almost in-
variably its second leg much shorter than the first, and the
Roman P very rarely had the circular bend completed so as
to reach the main shaft. See the plate and, as will be seen,
the Roman P in the £, the British P in the £ and the P in
The Athenian Professor, ps. It is evident that the Greek

No. 49.

[THE PENNY CYCLOPAEDIA.]

Vol. I—3 D
The insertion of the G after F, but what place could be better suited to it than the position of Z, a character which had no correlative in the Latin series? Our modern grammars, indeed, give both y and z, but Suetonius tells us indirectly that the Greek alphabet terminated at z, for the Emperor Augustus, he observes, employed a peculiar cypher in his papers. For the letter a he wrote β; for b, c; and so on, until for x he wrote a or α. Some commentators, indeed, scandalized at the ignorance of Suetonius in this matter, have substituted for z in the above passage. But, in fact, there is not a single Latin word that contains either y or z. Modern printers have further increased the Latin alphabet by giving in two instances double characters where the Romans wrote only one. Thus, the letter Ω, for its sake as a vowel, represented also the closely-allied sound of our consonant Y, or the German J. When it is used with this consonantal power, modern printers have taken the liberty of substituting the character J and modern readers, who aggravated the error by altering it to Ω, have carried that of that English letter. Thus the Latin word IVGV is now printed and pronounced jugum, instead of yugum, or yugum, so as to destroy the close similarity of the word to the corresponding English term, yoke. Again, the Romans frequently represented by Κ, the round form of manuscripts, has suffered the same fate. As a vowel, it has u for its character in modern books of Latin. But the Romans, as we have already stated, also employed it as a consonant, equivalent to our w. In this case, they preferred the sharp sound of u, which again misled the modern reader as to the sound. When pronounced correctly, the Latin words vespa, vastare, ventus, bear a close analogy to our own terms wasp, waste, wind. The letter K, though it became unnecessary when the third class of Roman alphabets was adopted, is retained by the member of the Roman alphabet, though often excluded from school grammars.

It would be rather an amusing subject of inquiry, to trace to their sources the remarkable differences in the usage of our modern small characters, some rising above, others descending below the general line. The first attempts of certain letters to shoot out into an undue extent may be seen in several parts of Plato IV., and we will leave the decision to any philosopher who may be disposed to pursue the matter. It is but right to state further that the remarks we have made, and the alphabets we have given, are by no means sufficient to enable any one to read antient MSS. Independently of the varying forms of letters, there are numberless combinations, represented only by long intervals.

ALPHEUS, one of the chief rivers of Peloponnesus (Morea), which rises in Arcadia, and flows through Elis to the sea, receiving in its course the rivers Helisson, Ladon, Erymanthus, Chaeus, &c., and numerous smaller streams. It is 450 miles in length, and is joined to its junction with the Ladon by the river Strabos, which, as before noted, is 135 miles above that, the river of Karitena. It drains a large mountain district, bounded by Mount Erymanthus on the north, the central ridge of Arcadia on the east, and the mountains of Laconia and Messenia on the south. The river is navigable, and whose course is marked by some singular circumstances. According to Pausanias, the fountain is at Phylece (Krya Vyal), near the foot of Mount Parmenius, at the south-east corner of Arcadia, where the boundaries of Arcadia, Argolis, and Laconia meet. Near a place called Symbola, the (meeting of the waters) it is joined by a considerable stream, and sinks underground; it rises again five stadia from Asca, close to the fountain of the Eurotas. The two rivers then mix their waters, and after flowing together for about five miles, they turn southwards and reappear under the name of Eurotas in Laconia, the Alpheus at Pegre (the Springs), in the Megalopolitan territory, and in Arcadia. Strabo, however, says that the Alpheus sinks, instead of rising, at Abis, and adds a fact, that harbours consecrated to either stream, which he is disposed to attribute to the Alpheus. Both streams have united waters before they sink underground. The mouth of the Alpheus is known as Epeiros, near Asca. Here there are two sources or emissaries, one of which he supposes to be the vent of the lake or marsh called Taki, not far from Teges, north-east of Eranos, the other that of the Sarandapotamo. (Vol. iii. p. 42.)

One of these probably is the supposed source of the Eurotas, mentioned by Pausanias. These streams, after joining, enter a lake, and again sink into the earth. Passing under a mountain called Tzimbari, the Alpheus re-appears at Marmora, near Rapsomos, probably the Pegre of Pausanias. These substraneous descents are not uncommon in the Arcadian rivers, and are called by the modern Greeks, Katourafa: similar instances are collected in the Encyclopédie méthodique; Géog. Physique, art. Abun, the name of the south-east quarter of Morea, corresponds to this same distance from it as the emissary at Marmora, is another emissary in Laconia, in the valley north of Mount Khelmos, which may be considered as the principal source of the Eurotas; and Colonel Leake thinks it not impossible that the stones are not the substraneous descents of the Alpheus, but that in its subterranean passage the waters do, in fact, divide into two streams. The height of the waters in the lake and rivers, however, prevented his examining minutely into the phenomena of the place.

Below this, the river is joined by the Helisson (now the river of Davia), on which Megalopolis was situated, not far from the confluence. Below this, between the modern towns of Kartaena and Andritsans, the Alpheus descents through a ravine, formed by the closing in of the mountains of either side, and is divided by the river Labranda, which pass separates the upper and lower plains of the Alpheus; in the former of which, the chief city was Megalopolis, in the latter Herma. Entering Elia, it runs through the plains of Pisa, past Olympia, and falls into the Cyprosian Gulf. Below the mouth of a stream, the river is called Alpheius, or Alpheia. * From the Straights of Lavdha to the sea, there is a narrow level on either bank, inundated in winter, and planted with maize in summer: the river is wide and shallow, and its banks produce a great number of coarse plants. (Ladiou, iv. 1. 1.)

This river is very celebrated in song. Ovid tells how the river god, being enamoured of the nymph Arethusa, whom he saw bathing in his waters, sought her love. She fled, and was pursued; and Ovid, in the tug of love, writes:—

'Vasa inflat, usque subterranea meminisse sollicitus

Caelo labi nupera, virumque non esse, solas

Balnea habere, et iter peregrinum invenisse

Quae, tandem ita, et in consummatione auro

Veniisse in Alpose leonis summis indicaturos.'

[See Albion.] It is rather singular that the Swiss give the name of Alps to the high pastures which cover the sides of the mountains, as far as the line of permanent snow. (See Geography of Europe, vol. iii. p. 114.)

The Alpine system, in its full geographical extent, may be considered as connected with the chain of mountains that runs through the Italian peninsula; and the point of its junction with the Apennines cannot therefore be accurately determined. Some fix the commencement of the Alps at the depression of the valley of Savona, and others at Cape delle Mele on the gulf of Genoa. Assuming it to commence at this cape, its general course is westerly as far as the Col de Tende, from which point it takes a N.W. course and passes along the coast to Savona. From this last point it runs north in an irregular direction to about 45° 45', separating the upper part of the Po valley from that of the Rhone, and point of France and Savoy from Piedmont. Near the lat. of 45° 30' we find the ridge of the Alps most distinct, and after this latitude the chain of the Alps is called the French Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps. From Savona to Piedmont, the ridge of the Alps is called the Piemontese Alps.
steep northern boundary of the Lake of Geneva, joins the Jura near the town of Lausanne. This line separates the water which flows to the Lake of Geneva and thence into the Rhone, from those which join the Aar and descend into the Rhine.

From the great bend of the Alps near Mont Blanc, the central mass runs towards the sources of the Drave and Salzach rivers, which takes the Tyrol and the Grand Glockner, where it is divided into two main branches. But between Mont Blanc and the Grand Glockner, and about the meridian of 40° 45′, we find a chain detaching itself northward from about Mount Septimer, and running past the N. E. from the line of the Jura, the two separate the affluents of the Lake of Constance and the Rhine from those of the Danube. But before reaching the sources of the Lech, this offset sends out another, which runs along the left bank of the Inn. This second range continues its course to Vienna and the Danube; the northern branch continues its direct course to Vienna and the Danube; the other takes first a southerly direction until it approaches the Gulf of Venice near Fiumi, when it assumes a S.E. course, and under the name of the Dinaric Alps may be considered as a prolongation of the same mountain-system along the lower part of the Adriatic. But the great mountain-chain of the Graecian peninsula, as well as the Balkan which terminates at the Black Sea, may be geographically considered as a prolongation of the Alpine system. The mountains generally considered as comprising the western side of the valley of the Po, they nearly parallel the main chain, and terminate in lakes, such as those of Maggiore, Como, &c. The valley of the Adige, the head of which is at the Brenner mountain, has a course within the mountains about S.S.W. and is the longest transverse valley of the Alpine chain. It is also the line of the Alps which runs in the general direction of west and east, and also in those offsets which make a small angle with the main chain, the southern slope is much steeper than the northern. Consequently the valleys on the Italian side are much lower than those on the north side; the surface of the Lake Maggiore is 678 feet above the level of the sea; that of the lake of the four cantons, sometimes called the Lake of Luzern, has an elevation of 1440 feet. The Lake of Brians is about 1900 feet above the level of the sea, and that of Thun only a little lower. It follows naturally also from the rapid slope on the south and the proximity of the Mediterranean, that the secondary branches of the Alps are principally on the north side of the main mass.

It is very difficult to give any precise measure of the breadth of the Alps. If we take the direct distance from Bellinzona, on the Italian side to Altorp, on the Swiss side, which certainly does not comprehend the whole breadth of the Alpine mass, we find this to be about fifty miles of the line of the Rhone, across the valley of the Rhone, is above seventy miles; but this measurement comprehends the breadth of the main chain, and the offset which runs from St. Gothard to the Jura, with the intervening valley. East of the Ghirs the range increases considerably in breadth; and from the Wurm See to a point a little north of Verona, is a direct distance of 150 miles. From the point where the Alps divide near the sources of the Drave and the Salzach, the breadth occupied by each branch requires a separate consideration.

The most remarkable features of the Alps, in a commercial and political point of view, are the passes, which we shall notice in order according to the divisions already made.

The Maritime Alps:—In apparent contradiction to a preceding remark, it may be entered from France, and the Alps may be avoided, except as to the passes which terminate the chain, by going along the coast of Liguria, and entering Nice from Provence. The most southern pass across the Alps is that between the Col de Tende; it is traversable for mules by the Dukes of Savoy, and for carriages by Napoleon. Two great buttresses of the Alps are crossed before reaching the Col de Tende; they are the Col de Brous and the Col de Brovis. The pass of the Col de Tende is very dreary, though the elevation is not considerable, being only 5887 feet above the level of the sea. The route, after descending from the Alps, passes through
Coni and Savigliano to Turin; this is the only great carriage-road over the Maritime Alps. There are many lines of communication with France practicable for mules: by the valley of the Stura, in Piedmont, and the Col d’Argei, near the valley of the Ubaye, in France; and by the Val Verzasca, in Piedmont, over the Col d’Agnello, to the valley of the Guli in Dauphiny.

Monte Viso, which terminates this division, is one of the most splendid mountains in the chain; its peak rises 12,392 feet above the level of the Po; but only a part of it can be seen in the basin of the Po, this fine mountain is distinguished. The rivers which have their rise in the Maritime Alps are numerous: on the Piedmontese side they are all tributary to the Po. The Gesso, the Stura, the Mauro, and many other streams, have a rapid course of which rise the streams of Piedmont: those which flow into Liguria and France are the Roya, the Var; and the Ubaye, which falls into the Durance.

The Cottian Alps.—The only carriage-road across this division of the Alps is that of the Mont Genèvre, which was executed by order of Napoleon; this pass was known to the Romans. It leads from the valley of the Durance in France, to Susa and the valley of the Dora in Piedmont. A modern road leads to the Mont Genèvre, an ancient triumphal arch, which still exists. Another route across the Cottian Alps is by the valley of the Bardonneche, where a stream flows into the Dora Susa: this valley leads across the Dora to the Col of the Cambre, and the Maurienne. It is supposed to have been the pass taken by Julius Cæsar, when he crossed the Alps to attack the Helvetii. The chief rivers which take their rise in the Cottian Alps are the Dora Susa, on the side of Piedmont, the Lys, the Mont Blanc, and the Giffardo.

The Greatian Alps.—Mont Cenis is usually included in this division. It is perhaps the most frequented of all the passes across the great chain. There is no evidence of its having been known to the Romans; it has been frequently considered as the southern end of the Mont Genèvre, as the two roads unite in the descent from their passes into Italy at Susa. The earliest mention of it is by the historians of Charlemagne, who record, that Pepin passed this mountain with an army to attack Astolphus, king of the Lombards. It continued a difficult mule-road until, by order of Napoleon, the present magnificent route was begun in 1803 and completed in 1810. This road leads from Luns-le-bourg in the valley of the Arc, in Savoy, to Turin. The elevation of the pass of Mont Cenis is 6773 feet above the sea level. From Benevento, the Valley of the Arc above Luns-le-bourg two or three passes are found leading into the valleys of the Viù and the Lanzo in Piedmont; and from the upper valley of the Isere, the road lead into the valley of the Dora d’Ossola. The principal of these is the pass of the Little St. Bernard, which was known to the Romans, and appears to have been made practicable for cars by order of Augustus; but though described by Saussure as the easiest of all the passes of the Alps, it is only a somewhat difficult road for mules: towards the end of the 19th century, had ordered a survey of the road preparatory to facilitating the intercourse of people divided by the Alps; this was however delayed. The evidence brought together by various authors to show that by this pass the Carthaginians under Hannibal entered Italy, is considered by some as conclusive: so many essential points confirm the account of Polybius, the nearest historian to the time of the event. But this opinion is not without some difficulties. The Col is nearly a league in length, and sometimes narrow, though at an elevation of 7190 feet above the sea. On it there are only two stones called by the people of the country the Circule d’Hambaly. The route to and from the pass of the Little St. Bernard is by the valley of the Isère in the Tarentaise, and the Val d’Aosta in Piedmont. The Col du Bon-homme is usually the point of division between the Graian and the Pennine Alps; but this col is not across the great chain. It leads, however, by the Savoy side to the Col de la Seigne, where commences the Pennine or High Alps. The chief rivers which rise in the Graian Alps are the Northern Stura and the Ora, both flow into the Po; the Pennine Alps have also a large area drained by the Arc and the Isère, which rise in different parts of the lofty Mount Isère, but unite above Montmélian; and the united stream joins the Rhone above Valence.

The Pennine Alps.—This is the loftiest portion of the range, including Mont Blanc, Monte Rosa, and Mont Cervin, and the inner portions of the French and Italian Alps. On each side of Mont Blanc there are cols or passes of the mountains, usually traversed by pedestrans in their tours about Mont Blanc: these are the Col de la Seigne, and the Col de Ferret. From Mont Blanc the chain takes a north-east direction; and the falls of great passage across the Pennine Alps lies between Aosta in Piedmont, and Martigny in the Valais in Switzerland. This pass, which is by the Great St. Bernard, is of such antiquity, but it has never been practicable for cars: the road was first opened in 1837. The next pass which appears to have been an ancient mule-road, but the advance of the glaciers has destroyed it, and the route of the Simplon superseded its use. The pass of the Simplon is the most southern of the Col of the Pennine Alps: its great historical celebrity. The Hospice, situated on the summit, at an elevation of 7263 feet above the level of the sea, is the most noted of these benevolent establishments throughout the whole mountain chain. Between the Great St. Bernard and the Simplon, there are two other passes: the first is the Cervin, which is the loftiest pass in Europe, being 11,096 feet above the sea level. It is the path traversed by going from Châllon in the Val d'Aosta to Visp, in the Valais; the second is the Muro, the pass east of the Simplon, which leads into the canton of Graubünden. There had been a line of carriage-road, but the advance of the glaciers has destroyed it, and the route of the Simplon superseded its use. The pass of the Simplon is the most southerly of the Col of the Pennine Alps: its great historical celebrity. Another of the great benefits accomplished by Napoleon, leads from the Valais to Milan: its construction was completed amidst difficulties far surpassing those of any other route that has been made across the Alps, though the height of the pass is 6890 feet. This is the only pass in the chain where a road may be made across it at right angles; but a single great line of route was taken which would lead across one or two other ranges. In this division some of the largest Alpine rivers have their sources: the Rhone and the Reuss on the north; the Beas, the Tis, the Tessin, and the Miseric, which is not 4490 feet; and the Rhone, which enters the Mediterranean.

The Helvetic or Lepontian Alps.—East of the Simplon is the pass of the Gries, which can be traversed by laden mules, though it lies across the glaciers: it leads from the upper Vallais to the Val d'Ossola, in Piedmont. But the chief pass of the Lepontian Alps is that of the St. Gotard, which leads from the side of the chain, through the Val Levantine, to Altero, and the lake of the Four Cantons in Switzerland. This had long been a line of great commercial intercourse, though only a mule-road; a good carriage-road, however, was just begun in 1866. The upper passes of this line, and the greater facility of intercourse will soon be felt by all the forest cantons, and others in communication with them. The height of the pass is 6890 feet. This is the only pass in the chain where a road may be made across it at right angles; but a single great line of route was taken which would lead across one or two other ranges. In this division some of the largest Alpine rivers have their sources: the Rhone and the Reuss on the north; the Beas, the Tis, the Tessin, and the Miseric, which is not 4490 feet; and the Rhone, which enters the Mediterranean.

The Rhetic Alps.—Across this division of the chain there are now five good carriage-roads: first, by the Mont St. Bernard, at an elevation of 6790 feet, leading from the Lake Maggiore, Bellinzona, and the Val Miseric, to the Rhine-wald, and to Coire. This road has just been made by the people of the Grisons. The second is a line from the Lake of Como and Chiavenna, over the Splügen to the Rheinwald, a pass which was known to the Romans; it falls into the route of the Simplon, which leads from Val D'Ossola to Chiavenna, whence the road runs through the Vila Mala, and the finest Alpine scenery of the Grisons. The new route of the Splügen is lower than that of the St. Bernard; it was recently constructed by the Austrian government. The third carriage-road leads from Chiavenna to the Val Bregalia, and passes the great chain over the Maloya into the upper valley of the Inn, whence it follows the course of the Inn to Innspruck, this route has been made by the Grisons to determining on the heights of the nearer valley, at 8130 feet high, a pass which, crossing the northern boundary of the Inn, leads to Coire, the capital of the Grisons. The fourth great road leads from the valley of the Inn across the chain to the source of the Adige; a little above it, on the grassy slopes of the great ridge, it is the lowest of all the passes across the great range.
Descending a little way into the valley of the Adige, it traverses a buttress ridge over the Monte Stelvio, the new Austrian border which leads to Merano by the Valtelline; the valley of the summit of this pass, the valley of secondary range, is 9174 feet; it has been lately constructed by the Austrian government, to obtain an unbroken line of communication, through its own states, with Lombardy; it is the great road from Verona, by the Brenner pass, to Innspruck; it ascends by the valley of the Adige to Botzen, thence by that of the Eisach to the Brenner, elevated 4650 feet above the level of the sea; from the Brenner, the road descends by an admirable point of view to the forest. Thus a river, or the path or road, is ascended to the source of the river which flows through it; this will generally be found on or near the ridge or col, between two mountains, whence another stream follows the slope or valley on the other side. To this general rule there are few exceptions; there is scarcely a pass which is not commanded by mountains; and where the ridge or col is wide enough to receive the water which streams from them, and retain it, lakes are formed, the sources of the rivers which flow from the passes: such is the Monte Genèvre, which has been, as it were, divided into four parts, leading to France, and the Dora Susanna towards Piedmont, flow from almost a common source. The lakes on the Cenis, on the Great St. Bernard, the St. Gotthard, the Bernardin, and the Sempach, are the seats of Alpine lakes.

The chief rivers which rise in the Rhätische Alps, are the Mueus, the Maira, the Adda, the Oglio, the Eisach, and the Adige; these all rise on the south, and flow into Lombardy. On the north is the Hinter-Rhein, which joins the Vorder-Rhein at Reichenau, and afterwards collects all the streams on the northern side of the Bernese chain; the Aar, the Linth, and the Reuss, bearing these and other tributary streams of the same Rhine. Some of these, but flowing from the northern side, are the Inn, the Oes, the Still, and the Ziller, which, united under the name of the first, flow on to the Danube. From the southern chain of the Tyrol spring the Brenta, the Cordoval, and the Tagliamento; the latter, after watering the plains of Friuli, flow into the Adriatic. The Noric Alps.—These mountains form at their western extremity a lofty range, especially the Grand Glockner, at the head of the Möllthal, which divides the latter valley from that of the Enns. The highest from Vercor Innsbruck crosses the great chain at the Radstadt Tauren, at the height of 5413 feet, after having passed over the Carnic branch at Tarvis. Farther east, the road from Trieste to Vienna crosses the Julian and Carnic chains, being in the north of the Carnic, and the foot of the Norics: but so numerous are the ramifications of the Alps here, that the valleys of the Save, the Drave, and the Muhr, and their tributary streams, scarcely define the separations. Many carriage-roads, well constructed and well preserved, traverse these Alps; and the scenery of these northern and eastern ranges, known only to few English travellers, is nowhere surpassed in the whole extent of the mountainous districts from the Rhone to the Danube.

But, with Napoleon's power, it was the narrow policy of the European states to leave every barrier as nature made it, and thus to restrain free intercourse between the nations which it divided; this tended to the encouragement of political prejudices, and the withholding of political and other advantages between them. The advantages, however, were soon perceived which sprung from the formation of the routes of the Tende, the Genèvre, the Cenis, and the Simplon; and, following the splendid example which Napoleon set them, the states which have the Alps for their frontier have subsequently formed, and are still forming, admirable carriage-roads across passes formerly considered impracticable.

In the parallels of the Alps, owing to the great elevation of these mountains, we find the summits of many of them perpetually covered with snow; and sometimes a slope of the valley of snow and ice are generally called GLACIERS; a term, however, that is perhaps more properly applied to the masses of snow that fall down into the valleys, and there form large masses of ice, sometimes presenting a tolerably level surface, and sometimes a slope; this is rapid, exhibiting huge fissures and fantastic varieties of form. These masses of snow and ice are the sources of some of the largest rivers of Europe. They often descend in the narrow transverse valleys considerably below the line of peaks, and from these the ice of the glaciers is detached; the large parts of the great mass bear separate names, and vary from six or seven leagues to one league in length. There are numerous glaciers of the larger size; in width, they vary from a quarter of a league to a league, and many of them are estimated to be from 100 to 600 feet thick: by a fair calculation their aggregate surface appears to have been taken at 136 square leagues. One of the most terrible calamities to which the inhabitants of the Alpine valleys are exposed, is the sudden descent of masses of snow which sometimes cause dreadful devastation. These are generally termed Avalanche, or sometimes Lawines.

A remarkable feature in the Alps is the occurrence of lakes on or near the crests of the passes. A pass is never over a summit of a mountain, but over the lowest tractable point. The determination of the path or road, a valley is ascended to the source of the river which flows through it; this will generally be found on or near the ridge or col, between two mountains, whence another stream follows the slope or valley on the other side. To this general rule there are few exceptions; there is scarcely a pass which is not commanded by mountains; and where the ridge or col is wide enough to receive the water which streams from them, and retain it, lakes are formed, the sources of the rivers which flow from the passes: such is the Mount Genevieve, which has been divided into four parts, leading to France, and the Dora Susanna towards Piedmont, flow from almost a common source. The lakes on the Cenis, on the Great St. Bernard, the St. Gotthard, the Bernardin, and the Sempach, are the seats of Alpine lakes.

The number of mines that are worked in the Alps is not very considerable when compared with the great extent of the mountains. Some gold and silver mines are worked, as at the Rathaunberg, &c.; and others of copper, lead, iron, alum, and the species of coal called anthracite. The iron-mines of Styria, Carnithia, and Carniola, are very productive; the Bleiben (lead-mine) and the Carnithia furnishes some of the best lead in Europe. There are also found in Savoy, at Pesey, and Macon. The quicksilver-mines of Iridia, which are about 27 miles N.N.E. of Trieste, are well known from the descriptions of travellers. (See Russell's Atlas.) Salt is preserved at Bals in the canton of Vaud, at Hall in the Tyrol, a little below Innspruck; and in the beds of Halliein, Reichenhall, and Berchtesgaden, all in the neighbourhood of the town of Salzburg. (See Geographie de l'Europe, p. 165.)

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verse valleys precisely accord with this view, which, so far from being destroyed by a strict and detailed geological examination, acquires additional strength by such examination.

It was at one time considered that the Alps were produced by a single great effort of nature; this opinion has, however, given way before facts, and it is now very commonly received that they have been elevated at different periods, probably at great and unequal intervals of time, during which most important changes were taking place on the surface of the earth.

From the mode in which we usually regard mountain-chains, we commonly receive very erroneous impressions respecting the true relative elevation of such chains above their bases, so that few, unaccustomed to the investigation of geological phenomena on the large scale, are prepared to consider mountain-masses, such as those of the Alps, and which from habit they call enormous, as the result of simple rocks and strata, aqueous dislocations, and the following diagram, which represents a proportional section of a part of the Alps from Mont Blanc, crossing the lake of Geneva to the Jura, may probably assist the reader in estimating the true value of these mountains when compared with the extent of land which they actually cover, the heights and horizontal distance being on the same scale, viz., 1/400 of actual nature.

It will be seen, more particularly if the height of the loftiest Alps be compared with the radius of the earth, that mountain-masses are by no means so enormous as our imagination inclines us to suppose, but that, on the contrary, they are on an extremely small relative scale, so that at first sight there is much difficulty in considering a real proportional section of a mountain-range to be correct. Such sections are, however, useful in showing that the relative forces required to fracture rocks and elevate them into mountains are means necessarily so great as might, at first sight, be supposed.

Proceeding to examine the nature of the geological evidence, from which we infer that the Alps were not produced by one great upheaval of rocks, we find that certain beds have evidence which have unduly by the fracture of the lowest others were deposited, for the latter rest quietly on the fractured edges of the former. In such cases we have merely to inquire what are the equivalents both of the upper rock, and of that quietly resting on it in the series of rocks generally, and we arrive at the relative date of the disruption or fracture of the first rock, as it must evidently have taken place before the second was deposited. If we now find, still pursuing our investigations in the same manner, that the second rock has itself been broken and tilted up in another part of the Alps, perhaps farther removed from the central chain, and that a third known rock rests upon its disrupted edges, we obtain another relative date, and a proof that the Alps have been produced by more than one elevation. It will be evident that, by continuing these researches and by the help of the Alps generally, we obtain the number of elevations by which their present general form has been produced.

Although much has been accomplished, it cannot be said that we possess a body of evidence sufficiently clear to enable us accurately to point out all the principal dislocations and elevations to which the present general form of the Alps is due. M. Elie de Beaumont has inferred that the range extending from the Valtellina into Austria has been in a great measure elevated after the western Alps had assumed their present general direction; and he observes that, where the two great ranges or lines of fracture cross each other, as they do around the Mont Blanc, the Monte Rosa, and the Finster-Aarhorn, the dislocations are of a very complicated nature. It is to be remarked of this fringing of the disrupted lines that of contemporaneous fracture are parallel to each other, it may be remarked, that the Alps exhibit several great leading lines of dislocation, impressing marked characters on large portions of the chain, and that many of these fractures have evidently been produced at different times.

The contortions and dislocations of strata in these mountains are for the most part on the great scale; in some cases whole mountains are formed of beds fairly thrown over, so that the structure is of the undoubted fault type, and are seen to plunge beneath, and thus support others of more ancient date, and which, in fact, constituted the solid matter on which they were formed. This fact is not only observed for short distances but over considerable spaces, and, before it was well understood, formed a clue to the whole, then, we find that the Alps have been formed by the disruption and elevation of strata at different periods; that the elevating forces acted from beneath; and that they were sometimes sufficiently intense to throw masses of matter, now constituting high mountain ranges, so completely over, that the newer rocks are covered by older deposits at angles even amounting to forty-five degrees.

The oldest rocks of the Alps are, generally, micaceous, and belong to the class of non-fossiliferous rocks, a class often termed primary, from the opinion that they were first formed. The central ranges of the Alps are, in a great measure, though not altogether, composed of these rocks, and consist of mica-slate, sericite-slate, and others of the like character. Gneiss may be considered as very abundant, more particularly that variety which has been named Protogneiss, and is a compound of felspar, quartz, and talc, talcose chlorite, or slate. This gneiss, generally, consists of two series, and the fractures of it, even huge blocks, have much the same appearance as the granite of Dartmoor and Cornwall. This kind of gneiss forms, however, long continuous beds, which are sometimes contorted and bent, showing that they have undergone disturbance in the same manner as the strata of mountainous rocks. Mica-slate is also abundant, frequently passing by insensible gradations into talcose slate, and thus offering instructive examples of the mode in which mica and talc are substituted for each other. The mica-slate, as is the case with the slate generally, occasionally contain many minerals, among which may be enumerated garnet, staurolite, cyanite, hornblende, tourmaline, and titanite, the first being often so abundant as to constitute a very considerable part of the mica slate, and sometimes alternating with each other, but when viewed on a large scale, the gneiss appears to predominate in the lowest parts. Crystalline limestone is occasionally associated with these rocks, but is by no means abundant. The granite is sometimes large, as, for example, that included among the mica-slate of the lake of Como, which has been so extensively employed in building the celebrated Duomo at Milan.

Although the great mass of Alpine dolomite is of less importance, the large mass of rocks now under consideration, there are, nevertheless, some portions of it which may be considered as associated with the gneiss and mica slate in the manner of the sarcosarina limestones. The dolomite of Campo Longo, (St. Gothard,) several hundred feet thick, is described rock distinctly included between mica-slate and mica-slate. The dolomite of St. Gothard is celebrated for containing numerous minerals, among which are contained sulphate of barytes, corundum, tourmaline, tremolite, talc, mica, and titanite. Our limits prevent us from entering into a description of the inferior strata, rocks, and of their changes and passages into each other, which are often remarkable; but it may be observed that their thickness must be very considerable, for though subject to bends and fractures, they by no means exhibit those remarkable textures and contortions, so common in many parts of the great calcareous series of rocks which rests upon them.

In the Eastern Alps, a group of rocks rests upon these
above noticed, which has not yet been detected in the Western Alps. The beds composing it have been referred to the great group of 'the lowest portion of the fossiliferous rocks, or those which contain the remains of animals and vegetables. Though the remains of shells, corals, and encrinites are of the character of those detected in this old fossiliferous rock, it would be desirable to obtain a greater number of geological investigations, with the object of determining which geological character extends upwards in the series of fossiliferous rocks to the zechnite inclusive. [See Geol.]

It becomes therefore somewhat hazardous to fix with certainty upon any given portion of such series, without a larger number of organic remains in the Alps than has yet been afforded us. The group now under notice is described as gradually forming the crystalline rocks beneath it.

Next in the order of superposition we find sandstones, slates, and conglomerates, often of a red or variegated colour. The latter are of organic remains, and, though by no means constantly present, occur, when they can be observed, above one or other of those previously mentioned, and beneath the great mass of calcareous rocks to be next noticed. The red colour of these beds is more prevalent in the Eastern than in the Western Alps; the beds are, in fact, observable in the latter. The celebrated Valloros conglomerate, long considered as an example of a mechanically-formed rock among very ancient strata, constitutes a portion of these beds in their continuation through the Savoy Alps, though not referred to the first series by Sisteron, in the Vallée de Valsalento, disappears somewhat suddenly at the Col de Salenten, where the schist, which contains the rounded pebbles at the former place, occurs without them, the beds consisting simply of sandstones and slates. This series of beds is termed the epoch of the red sandstones.

[See Geol.]

The beds of which it is composed have evidently resulted from the wearing down and partial destruction of the ancient strata; as is well shown in the conglomerates which constitute the fragments of crystalline rocks. The red grits, micaslate, talc slate, &c. Whatever this has been accomplished suddenly, by a violent disruption of the older beds, or tranquilly, by a long-continued action of more moderate forces, cannot be considered as well shown; but, at all events, the variety of beds in the Alpine deposits, for they do not pass into the inferior rocks.

This partial destruction of the older Alpine rocks, however produced, was destined, at least in a great measure, to cease; and an enormous mass of calcareous matter was deposited, incessantly resting upon the various rocks that constituted the floor, or ground, on which the calcareous matter was thrown down; so that it sometimes directly repose on one and sometimes on another of the various older strata above mentioned, and consequently often present in a very large mass, the limestone, because limestone prevalently in the mountains which compose it, is intermixed with argillaceous schists and sandstones, both of which may considerably in their relative proportions to the limestone in different parts of the chain.

The calcareous rocks form the inferior beds of the calcareous mass, there is a somewhat unusual mixture of organic remains, particularly in the Western Alps. At the Col du Chardonnet (Hautes Alpes), Petit-Cour near Moulinet in the Chablais, at the Buet near Briancon, at the Col de Balme, and other places, a variety of vegetable remains, many of which are also detected in the coal measures of Europe and North America, are associated with belemnites, inasmuch as the latter are discovered and death the leaves comprising the vegetables. Now, according to our present knowledge of other parts of Europe, the organic remains named belemnites, are found only in two great groups of rocks, viz., the cretaceous and the oolite. It is, however, of great interest to the geologist that, in each of these groups, the series of beds, containing this curious mixture of exuviae, should be referred to the oolitic group, as its prolongation, more particularly in the direction of Digne and Sisunen (Basses Alpes), is stated to contain the abundant remains of shells which are commonly detected in the lowest part of the oolitic group, named the lias. Considerable masses of granular limestone and micaceous quartz rock sometimes occur in the lower part of this system.

Many attempts have been made to establish divisions in the calcareous rocks of the Alps, without success; and, with the subdivisions formed in the oolitic and cretaceous groups of Western Europe; but such attempts cannot be considered as having been successful. There can be little doubt that the great oolitic and cretaceous groups constitute a larger mass of the mass; but the exact line of separation between these groups, as they exist in the Alps, is far from clear, though, as great accumulations of strata, they may be readily distinguished. When the mineralogical structure of rocks was considered by some a safe guide in the whole of the Alps, the name of supercalcium was referred to what was termed the transition series, as this series was supposed to form a transition or passage between the so-called primary and secondary rocks.

It becomes a point of no small interest to ascertain the reasons of rocks, and particularly of those of the Jura, is principally light-coloured and often loosely aggregated, should in the Alps be dark coloured and very compact. On the Montagne des Pins, and other parts of a system of mountains which ranges up to the Buot (Savoy), the mass, dark, and is, in some cases, the chief bed of England and northern France associated with the chalk, and probably are also equivalent to a part of the white chalk itself. This is proved both by the geological position of the beds in question, and by the identity, or rather very close a semblance, of the organic remains detected in each. The difference in the mineralogical structure of contemporaneous rocks may be due either to a change in the nature of the original deposit, to the mode in which it was effected, or to alterations produced after deposition. Possibly much may perhaps be supposed; but, indeed, no better case: but admitting this, we can scarcely consider that these rocks should not have suffered some change from the action of the great disturbing forces to which they have been subjected, and which have often contorted them in such a remarkable manner.

In many parts of this calcareous system, dolomite (a compound of carbonate of lime and carbonate of magnesia, more or less crystalline) constitutes masses of considerable extent of considerable thickness, often referred to the supracretaceous, and, even when, the rock becomes highly crystalline. In many cases, this rock seems the result of original deposition, while in others it has the appearance of an altered substance. These dolomites are by no means constant to a small extent the calcareous rock, but are observable in the Alpine deposits, and are associated with the upper, sometimes with the lower part, and consequently occupy parallels equivalent to the oolite and cretaceous groups, if not to the group beneath these. Gypsum frequently accompanies them; indeed, the association of gypsum and dolomite is common in the Alps, and the Maritime Alps the two are so intimately mixed, that crystals of dolomite have been found disseminated through gysum. The salt of Hallstadt, Hallein, and Iselch, is subordinate to the lower part of the calcareous Alps, and is connected with some part of the oolitic series of Western Europe.

To present even a sketch of the organic contents of the great Alpine calcareous series would far exceed our limits; but we may remark that a particular genus of fossil shells, called Nummulites, is commonly found in the stratified rocks of those stratified rocks which have been formed since the chalk, descend into the equivalents of the chalk, and probably still deeper in the series. It should also be observed that a fossil sea-weed, named 'fucoides,' abounds so much in the upper portion of the oolitic group. This rock is more particularly distinctive in the Alps; but the rocks of the Maritime Alps the two are so intimately mixed, that crystals of dolomite have been found disseminated through gysum. The salt of Hallstadt, Hallein, and Iselch, is subordinate to the lower part of the calcareous Alps, and is connected with some part of the oolitic series of Western Europe.
between the chalk and rocks above it, over a considerable part of the European area, at the time that the chalk was the highest part of the so-called secondary rocks. The then newly-discovered rocks were termed tertiary, to distinguish them from those beneath; and it was assumed that the observed break was a gap in the rock generally, though upon what solid ground, or even plausible hypothesis, it is difficult to conceive. In the valley of Gossau itself, the beds under consideration are stated to rest unconformably on the older rocks beneath,—that is, the older rocks have suffered disturbance before these beds were deposited.

From the catalogue of the organic remains found in the Gossau, and other equivalent beds in the Alps, by Professor Sedgwick and Mr. Murchison, it appears that during eighty-nine districts, as they are called, twenty and a quarter of the certain of the organic remains discovered in the supracretaceous or tertiary rocks, while six are referred to other exuviae detected in the cretaceous series. Assuming these determinations to be correct, we have evidence that when the Gossau and other Alpine beds of the same date were formed, there was a mixture, in the proportions above noticed, of creatures previously considered to have existed unmixed, the one set living only during the deposit of the chalk series, the other set, when these beds rest on them, by it. It hence follows that there is at least a zoological passage between the supposed great classes of secondary and tertiary rocks. In the Pyrenees, there are also beds considered to exhibit evi
dence of the same fact; and at Maestricht, the well-known strata, with the mica slate and the earthenware, have been shown to contain organic remains leading to the same conclusions, which are strengthened by facts observable at the contact of the chalk with superior beds in Normandy and elsewhere.

Next, in the order of succession, we find the strata which contain the known divisions under the names of Nagelluh and Molasse, the former being conglomerates and the latter sandstones. The various beds are entirely composed of fragments of Alpine rocks, ground down by attrition, and vary in size from a man's head to sand. This variation in size shows that the waters which have transported the fragments into their present relative situations must have possessed different degrees of velocity, and that this velocity must often have been considerable, as the fragments moved to large. Beds of limestones are in the strata stratified with the molasse and nagelluh, and are worked in various places for economical purposes. In them, or in the strata associated with them, the remains of the mastodon, rhinoceros, paleoatherium, and anthrochotherium, have been described. The mapping of the great divisions has given a large proportion of these exuviae. Whether we regard this great accumulation of Alpine detritus as resulting from a series of minor catastrophes, or from the continuous causes only now bear down detritus from the Alps, we still seem to regulate our length of time for its production. It is clear, from the organic remains detected in it, that at least a large portion of the mass must have been deposited after great mammiferous animals were called into existence, and before those beds in which their exuviae are found. Judging also from the char
acter of the organic remains, some of the strata were formed in fresh waters, while others were accumulated beneath those of size.

Such are the stratified rocks which compose the mass of the Alps. It has already been remarked that the crystalline rocks occupy the central part of the chain, though they do not extend continuously through it. In the Eastern Alps, beds which have been added to the gruwacke series repose on each side, becoming of less importance, as they advance westwards. Flanking these last, and the crystalline rocks of the central axis, where the others are not present, are bands of sandstones and conglomerates, for the most part situated near the sea. These beds are found on the surface, so that the great limestone zones, comprising the two great ranges of the calcareous Alps, one on each side of the central chain, are not always separated by them from the inferior rocks. These two limestone zones are readily observed by the enormous terraces and the continuous water-courses, over which they abound, presenting the appearance of having been doubled back from the central range in consequence of the latter having been upheaved through them. Indeed one is sometimes tempted to believe that if they could be pulled out like crumpled paper, and the central axis lowered, the two zones would often approach somewhat closely to each other. The Gossau beds are probably far from being known in all their extent. While they are here and there found to intervene between the calcareous Alps and the mass of nagelluh and molasse constituting the lower and external ranges, as well as the hill country bordering them, they also extend in among the high Alps, as at Gossau itself, filling up pre-existing cavities and valleys. The nagelluh and molasse, skirting all, are evidently derived from causes acting from the central ranges outwards. The mountains composed of the stratified rocks, though the highest in the central Alps, are still lofty. The well known Rigi, which from its base to its summit is formed of them, rises 6182 feet above the sea. This mountain is remarkable for exhibiting the conglomerates and sandstones thrown over in the way to the walls of lakes, and lying on the ground in the northern zone of limestone, while they are in fact more recent. Although these various stratified rocks may thus be de
scribed as forming zones parallel to the central axis, patches of them are often thrust up, or rolled over, out of their general lines of bearing in consequence of the various disturbances to which these mountains have been subjected.

The granite of the Alps, at least that compound of the usual minerals not occurring interstratified with the gneiss and mica slate, but, on the contrary, often cutting through the beds, is, by many, classed as a true granite. At Baveno, and other places near the Lakes Maggiore, Lu
gano, and Orta, there are considerable masses of granite, and the quartziferous porphyries of the same district are probably of the same date. Granite veins traversing gneiss and serpentine, or periodically alternating with and placed against the granite, thus visible, has much influenced the direction of the stratified rocks in the same district. M. Necker has observed the important fact, that in the Vallor
amee conglomerate, above noticed, he has not been able to find any fragments of granite. But its presence is apparent from the fact, that the mass of granitic rock, thus partly visible, has much influenced the direction of the stratified rocks in the same district. According to M. Elie de Beaumont, granite rests upon limestones, equivalent to a part of the oolitic series, at the Mont
gnies de l'Oisans, Western Alps. The granite is described as cutting through the calcareous beds, rising like a wall, and supplied with veins of granite, which has been noticed in the beds of the Alpine limestones, and dolomite plenches beneath the granite at an angle of 50° or 60°. In the Swiss Alps, gneiss repose on beds of the great northern calcareous zone, at the Botzberg, &c.; and the celebrated Jungfrau is formed by an immense body of granite, originating in the same way, as masses, the former constitutes the southern side of this mountain, the latter the northern flank. In both these cases, and in others observable in the same district, the presence of these beds, the main mass, amounting sometimes to a complete overthrust.

A very extensive district in the Tyrol, between Botzen and Trent, more particularly to the left of the Adige, is occupied by porphyry, which has greatly disturbed the stratified rocks of the district. Such supposes that much of the dolomite of the Tyrol is a rock altered by its contact with the igneous matter which has broken in upon it. Another district, the shores of the Lake of Lugano, particularly Monte San Salvador, affords, according to this author, an admirable example of the history of a mountain district. This mountain becomes dolomitic in its approach to the augitic porphyry of Melide.

Among the other igneous rocks of the Alps, we may notice those of the Vallone Valsassina, where they are singularly mixed with dolomites in the limestone zones, and supplied a great variety of minerals. Respecting the Alpine serpentines and diascite rock, it is difficult to say, in the absence of good data, whether they should be included among the gneiss, or separate from them. Whether they are true igneous, and thrown up among the stratified rocks, or as having been relatively produced among the system of gneiss, mica slate, and others of that character. These rocks are found in the largest masses at the Monte Rosa, Mont Cervin, &c. At the Paso de la Fassa on the southern flank of the former, the mass composed of them is more than two leagues in extent.
Scattered on either side of the Alpes, and down the principal valleys, we find huge blocks of rock, evidently detached from the great central range, and frequently accumulated in considerable numbers. It is evident that these principal valleys existed prior to the passage of the blocks, and that they were transported by means of water, for they are lodged against those parts which would oppose obstacles to the passage of waters, and often occur in great numbers precisely where the eddies of the torrents have, from time to time, been detached and thrown up. In fact, the principal valleys are, as it were, balanced on the summit of these detached blocks, and from the perpendicular declivity of the rock, they are carried down into the valley. The height of the rock, and the length of the valley, are the determining elements of this phenomenon. Its effects are the most important. The alpine climate, the alpine soil, the alpine vegetation, are the result of the accumulation of these immense masses of stone, which, from the upper part of the region, have been successively detached, and have rolled down into the valleys. The size of the blocks varies materially: there is one, among others, on the Vigneure, near Bienne, which is 12 feet high, 30 feet long in one direction, and 24 in another, and 18 in a third. The blocks detached from the heights of the Mont Blanc district, and borne down the valley of the Arve, are found upon the Salève, near Geneva,) which opposed their progress, to the height of 2760 feet. Numbers of erratic blocks are accumulated upon the shores and the hills round the Lake of Geneva. One of large size, more than 60 feet in diameter, and weighing 600 tons, is not being dedicated to Neptune,) occurs in the lake near Geneva. The Pierre à Martin, on the hill of Bois, is 22 feet high, 18 feet wide, and 26 feet long. The erratic blocks are also abundant on the southern side of the Alpes. They cover every inch of soil, and those of the face of the mountain facing the high Alps on the Lago di Como, where it branches off into the minor lake and the Lake of Lecco. Behold that mountain also, and precisely where eddies would be formed under the supposition that they have been borne down, the face of the mountain, in the south, is 3000 feet, they are abundant. They are observed curiously perched upon the flank of the Monte San Maurizio above Como. Many theories have been framed to account for the present situations of these blocks. The most generally admitted is that they have been carried outwards from the central Alps at a geological epoch comparatively recent, seems also undisputed, but geologists do not so well agree as to the cause which set them in motion. In all discussions on this subject, those representing that the present glaciers are covered by huge blocks which fall from the heights upon them, and that these glaciers were floated and carried down by a great body of water through the valleys opened to them, the blocks may be observed to move with the velocity of a channeled current.

ALPS.—The Vegetation of the Alpes differs in many respects from that of the plains beneath. Every traveller who has crossed into Italy knows that the beauty of the meadows and of the rich turf increases as he ascends the mountains; on the alpine plains, as we have already stated, there are rich vineyards, and wine is one of the staple products of the country; the forests consist of most of the common European trees, especially of sweet chestnuts, oaks, birches, spruce firs, and many sorts of pines, while the alpine vegetation is far different. At the low elevation of 1500 feet, the vine is no longer capable of existing; at 1000 feet higher sweet chestnuts disappear; 1000 feet farther, and the oak is unable to maintain itself; at the elevation of 4600 feet, less than one-third of the height of Mont Blanc, the birch and willow survive, and there are only deciduous trees, the spruce fir alone attains the height of 9000 feet, after which the growth of all trees is arrested, not by perpetual snow, which does not occur for more than 8000 feet higher, but by the peculiar state of the soil and air at this elevation. At the line where the spruce fir disappears, the mountains are ornamented by the Rhododendron ferrugineum, which covers immense tracts like our English heath and furze; but even this hardy mountaineer cannot ascend beyond 7800 feet. The herbaceous willow creeps two or three hundred feet higher, accompanied by little except a few Saxifrages and gentians and grasses, which struggle up to the imperishable barrier of eternal snow, on whose border lichens and mosses and the most stunted and imperfect forms of vegetation alone occur.

Changes of a more striking but not less important kind simultaneously occur in the herbage of the Alpes; their limits are, however, far from being so well defined as those of the trees, neither have they in the same degree occupied the ground. The most decided attention of geologists has been paid to the region of vegetation on the sides of the Alps that is rich in peculiar flora of such regions; it is here that the numerous species of pedicularis, the gentians with their vivid blue, the white or purple nest-leaved saxifrages, with the gay-flowering phloxmas, and the rediscovered thistle or mountain station; that lowland forms are there associated with them gradually cease to grow as the snow is approached, till at last the region is occupied by strictly mountain plants alone.

The causes of this difference between the vegetation of the foot and of the summit of the Alpes is doubtless owing to several circumstances combined. By many writers diminished atmospheric pressure has been thought a principal cause of the effects we have described; it is a powerful influence, but not by any means the only one. Of others equally important, it is difficult to suppose that it can produce any very great effect; for the only way in which we can understand it to act is, firstly, to augment evaporation, in consequence of the rarity of the air, and, secondly, to diminish the heat by the same principle. There is no real heat here. Temperature is doubtless here, as in everything else, second to nothing in its influence. At the foot of Mont Blanc, the mean temperature of the year is 53° Fahr.; at the height of 6695 feet it is 32°, and between these points, as beyond the limits of the alpine vegetation, the temperature diminishes, and the vine and chestnut, for instance, are probably stopped by it alone.

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Alps, again, is a third agent, to which the peculiar nature of alpine vegetation is due; for it is under the action of light that plants feed, (that is, decompose their carbonic acid,) and the quantity of food they are able to digest is in proportion to the intensity of the light to which they are exposed. There is a great difference in the amount of light at different elevations. We have seen that alpine plants are periodically subject: buried in snow, they remain cut off from every ray of light during the whole of the winter, and it is only when the snow melts, and the spring has really commenced, that they again emerge into daylight, and now the sun is an imperious great stimulator of the vital actions of plants: if applied when they are able to execute their functions, it is of the most essential service to them; but if its influence is exercised only at intervals and at unfit seasons, plants are only sweated over, but not nourished. This darkening of the atmosphere is itself destroyed, and thus they perish; or they are excited prematurely into growth, and are cut off by succeeding cold. Plants of the plains accustomed always to a certain amount of light are not very excitable, and therefore do not suffer from constant exposure to the weak light of winter; but those of the mountains, never feeling a ray of the sun during the whole of their long winter, are excitable in the highest degree.

Aridity of the soil, gentle, but perpetual, never stagnant, but in a constant state of renewal by the melting of the snow, is the fourth circumstance that may be supposed to cause the peculiar appearance of the flora of the Alpes. Under such circumstances no drought can be, and a few years only sweep over the surface, leaving nothing but its nutrient behind.

Such are, as far as we present know, the conditions under which the botany of the Alps is produced. They should be attentively considered by gardeners, if they would possess the lovely flowers of the Alps, and in the alpine district, of any other mountains, in perfection; for the most skilful cultivation is that which most nearly resembles nature in her operations.

ALPUJARRAS, a smaller chain of mountains in Granada, lying between the Mediterranean and the Sierra Nevada or principal chain, to which the Alpujarras are parallel. They run between Motril and Almeria, a distance of

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about 60 miles, their rapid descent is on the north side; that towards the sea is long and gentle. The highest point of the Alpspira is about 4000 feet. The mountain country is in general barren, but furnish some pasture for sheep. It is said that the Alpspira contains many thousand-stone-ends of the Mjots, who took refuge there after they were driven out of Granada.

AL. RASHEED. [See ARAB.]

ALBRECHTZ, [See ALBERTZ.]

ALBRECHTZ, N.W., a market town in the County of Hants, on the river Itchen, fifty-seven miles from London, on the road to Winchester. It was formerly a borough of far greater importance than at present, and was a representative to Parliament. It probably owed its prosperity to the circumstance of the river having been rendered navigable by the embankment of the river Itchen for the Bishop of Winchester. It was the site of the monastery of St. Thomas Cantor, which was founded in the thirteenth century. At present the navigation does not extend above Winchester, and is confined to a few barges.

During the present summer, 1833, a large quantity of English silver coins, all of the reign of William the Conqueror, were found in a secluded box in a field a short distance from this town. About 2000 of these coins are now in the British Museum.

It has been taxed simply by force, since 1690, and again in 1795 and 1811. It has a market every Saturday, the population in 1831 was 2000, or if we include that of Odd Albright, a village in the immediate neighborhood, and which some consider as another part of the same town, it may be taken at nearly 2000. Albright has a national school. The market-town of Northwich is also in the parish of Odd-Albright.

ALBISACE, a fertile province of France, comprehending part of the plain of the Rhine, by which it lies, and on the north it extends to that part of the Belgian territory which is west of the Rhine. It is nearly equivalent to the present department of Saar and Luxembourg. It is bounded on the north by the various streams which flow from the above-mentioned mountains into the Rhine; but none of these attain any size, except the Rhine, which has a course of about eighty English miles.

At the head of the Teutons and the Danes, the two last German tribes, were the ancient occupants of this district, which pass with the rest of God under the Roman yoke. Upon the rise of the Frankish monarchies, under Clovis, it fell into the hands of that prince; and after the French and German conquests of the empire, it was included in the empire of that prince. When that empire, after many convulsions, was divided, Albisace became part of the German empire, and continued so until the Revolution. By the treaty of Münster in 1648, a considerable part of this district was ceded to France, which now, nearly the whole of the remainder, by the peace of Ryswick, in 1697. The territories of Mecklenburg and Mecklenburg have been acquired by France since the revolution. Geologists, a small red sandstone, belonging to the third series of the country; but the French is generally underclay, and is spoken in the towns among the more elevated classes.

Alsace is a fertile country. Corn, wine, flax, barley, and madder, are produced. It is chiefly wooded. The forests in the Vosg is produce furs, beech, oak, beech, and elm. The mountains on the side of Switzerland are lower and well wooded. The forests are suited for cavalry and pasturing.

The wealth of the country chiefly arises from its mines and manufactures. It yields coal, iron, lead, and copper, and near Soultz some Fechts, in the northern part, is a source, from which a considerable quantity of salt is obtained. Selz, another town in Alsace, exports many tons of woad, copper, and mineral waters to Paris and elsewhere. The staple products of the district are cotton goods, linen, and woolen, which are also made; and the mineral riches of the district have made it the seat of a considerable manufacture of woollens, linens, and other fabrics.

The town of Alsace is divided by its adherence to the Roman Church. The two great towns are Strasbourg, Colmar, and Mülhausen, and Schlattstadt (which very) for the rest, as well as for other particulars, we refer to Flora and Lower Rhine.

ALTEN, a suburb of Hamburg, belonging to the duchy of Schleswig and the kingdom of Denmark. It lies in the little belt, and is separated from the main land by a narrow channel. It is about 20 miles long, and 3 miles broad. The 5th parallel and 10th meridian E. pass through the island. The soil is very fertile, and produces grain, fruit, potatoes, and flax, some of which, especially flax, are exported in Considerable quantities. The island is one of the most pleasant in the Baltic, containing some fine woods and fresh-water lakes, well stocked with fish.

Sonderburg, the chief town, is on the south-west coast of the island. It is situated on the site of a hill, and is 49 feet above some antiquity. It has one of the best ports in Denmark, and about 5500 inhabitants.

The population of Alten is stated at about 15,000.

ALTENBURG, A., or ALSTON, a town almost at the extreme, or the more southerly part of the county of Cumberland, in a mountainous and sterile district, containing rich lead mines; many of these mines are at present belong to Greenmouth Hospital, having been purchased by the Earl of Derwentwater, who was engaged in the rebellion of 1715.

ALTEN, on the rich bank of the stream Tyne, River, over which is an ancient and magnificent stone bridge, of one arch. The houses are chiefly of stone and roofed with slate; the town has one church, built a century ago, and another at Garrigill, four miles from the town. There are also a Presbyterian and two Methodists (Welshian and Primitive) meeting-houses. The grammar-school was erected in 1828, but the endowment appears to be much smaller. There is a similar school at Alston Witton, near the town, which has about 200 children. The market day is on Saturday, and there are three fairs in the year, in May and September.
the ranges of the Altai Mountains extend even farther to the south than to the north; and it is probable that, between the meridians of 45° and 105°, the mountains occupy less than 12° of latitude, from 45° to 57°, a distance equal to that between the Pyrenean Mountains and the Cheviot Hills, or the whole extent of France and England from south to north. About the 16th degree of longitude, or the meridian of the lake of Baikal, the great Desert of Gobi, or Shamo, advancing to the north, narrows the mountain-range considerably, and changes its direction from east to north-east.

Between the plain to the north of Irkustsk, and the valleys about Neratshik, it occupies not more than three hundred and twenty miles breadth; but between the northern part of the lake of Baikal, (i. e. between 54° and 55° lat.) it runs again to the east till it arrives at the Pacific Ocean, at the southern extremity of the sea of Okhotzsk, than which nothing can be more remote, besides the distance, of the last is imperceptible; here it joins the Aldan Mountains, which may be considered as a branch of the Altai, nearly filling up the whole space between the Lena and the Sea of Okhotzsk, which the geographer was entirely unknown, had not the Emperor Kang-hi, in the beginning of the last century, employed some Jesuits to survey part of these countries. Their surveys were sent to P. M. de Latude, who published them in his work, "Voyage dans la Chine, de la Tartarie Chinoise et du Tibet : à la Haye," 1733, fol. About ten or twelve years ago, the architect and geographer Hacquin brought from Peking the "T'ou-thang-y-thuang-teh," or the Great Imperial Geography of the Dynasty of the Mandchous, and published it at Paris, 1789. This work was translated and explained by Klaproth, and by means of it, and the information furnished by Pallus, Meyer, de Ledebour and Humboldt in Siberia, we are able to form a general, though doubteless still imperfect and inexact idea of the extent of the Altai Mountains.

It was once thought that the Altai were connected with the Ural mountains, as well as with the Thiam-Shan, a range which traversesthe interior of Asia in the parallel of 42°. But according to the Geography, the latter supposition is erroneous; it is well known that the immense tract of low country separates the western extremity of the Altai from the southern ranges of the Ural. It is true, that on the left bank of the river Irkust, and opposite the western extremity of the Altai mountains, between 45° and 56° N. lat., a range arises, which extends from east to west for upwards of 700 miles to the 64th meridian. Though composed of several chains running parallel to one another, the mountains do not occupy a great space from north to south, being rather a sort of boundary in every point to lie from 1200 to 1600 feet; but Dr. Meyer thinks that one summit, the Kar-Karali, rises to 3000 feet above the level of the sea, or 2000 above the steppe of the Kirghis, which extends on its northern side. This range, however, ceases entirely by the 66th degree of longitude, at that point where the mountain chain of the Altai commences, and indeed the northern part of the range consists of an immense tract of low country separating the western extremity of the Altai from the southern ranges of the Ural.

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with gradually-sloping sides, each basin being followed by another somewhat lower. The course of the rivers in these valleys is slow, and only becomes rapid where they descend from one basin into another. Altogether, the extent of the whole range is considerable, and its mean height only half that of the Alps, the rivers have rarely a rapid course, and still less rarely do they form cataracts. These facts will explain the want of those majestic and beautiful views, which at every step in the Alps. The Altai upper valleys are commonly without thick forests, and only covered with a few trees and grass. But as these mountains are everywhere surrounded by extensive and dry stoppes, they make an agreeable and pleasing contrast on the best of days. The valleys, which open to the west, on the bank of the Irtish, however, have steeper sides, and offer more variety than those turned to the north or east.

The rivers which rise in these mountains contribute their waters to one stream, the Ob or Oby, which may perhaps be considered as the largest river of Asia, with the exception of the Hoaing-ho and Yantze-kiang. Those that descend from the northern declivity join the main stream; those that issue from the western sides fall into its large tributary, the Irtish.

The Irtish (Ertchis of the Mongols) has its numerous sources on the south-western declivity of the Altai; its waters take a westerly course, and fall into the lake of Zaqin, which is longer than 200 miles in circumference. Issuing from the north-western extremity of the lake, the river runs along the western declivity of the Altai mountains nearly due north, up to the place where the Bukhtarma joins it. Here the mountains advancing farther towards the north-west, divide it into two streams, one running north-west, and merges to the north-west, which direction it preserves till it leaves the mountains to the north of Semipalatinsk. Here, running to the N.N.W., it enters the low lands of Siberia, and traverses the source of Ihein and Barakinski up to the town of Tora, whence it again directs its course to the north-west, and after having joined the Ishkin meets the Tsobol, descending from the Urail, after the junction of which it runs to the north, and mingles its waters with the Oby. This junction, the Irtish is near the larger river, but its name is merged in that of the Oby.

Among the rivers which descend from the Altai and join the Irtish, the Narym, the Bukhtarma, and the Uba are the most remarkable. The Narym is rather a small river, which running little more than 100 miles, but it is remarkable as forming near its junction with the mouth of the Irtish the boundary between the empires of Russia and China. The sources of the Bukhtarma are in the Chinese territories, and not known but from Chinese maps: this river seems to run upwards of 100 miles; whilst the Uba, which is sometimes called the lower Irtish, is a mere stream of little account.

Of the numerous rivers which rise in the eastern parts of the Altai mountains, and form the Oby, unite before their junction in two considerable rivers, the Katun and the Biya, of which the former receives all the waters collected in the central region of the Altai, and the latter those which descend from its eastern parts. The river Katun, before it leaves the mountain region, mingle its waters with those of the Tasu, a river which runs at a great distance in the Chinese territories; and the Katun, on entering the basin of the Irtish, is received into another tributary, the Tahyreh, which carries with it all the waters collected between the tributaries of the Irtish and those of the Katunya. It enters the Katunya on the left, and the united stream runs to the north, and joins the Biya.

The river Biya, which runs on the right side, has comparatively a short course, and may be considered as the channel by which the Alpine lake of Telezkoi or Altyr Nor discharges its waters. This lake, which is everywhere inclosed by high mountains, and has only been seen by one traveller (de Bure), receives a considerable river, the Tukhaktam, which rises to the south of the boundaries of the Russian empire, and, according to the Chinese maps, has its sources at a considerable distance in their country.

A little below the town of Tomak, it gradually inclines to the north, north-west, and west. At its junction with the Irtish, it again is turned to the south-west, in which direction it continues till near its embouchure in the Arctic Ocean, where it forms a large gulf. Its whole course is thought to amount to upwards of 2000 miles.

In the Altai mountains, as in the Alps, the general direction of the rivers follows that of the main range. Nearly all of them run from east to west, or vice versa, and are only united by a few transverse valleys, in which the rivers run which carry off the water to the low lands. Besides the Irtish, only four such rivers cut the northern declivity of the mountains, with which it is already named the Taharysh, the Katunya, and the Biya. The fourth, called the Anui, is much less considerable, and runs between the Taharysh and the Katunya, and joins the former.

Our geological knowledge of this mountain mass is very great; the following enumeration will be sufficient to give a general idea, and enable one observer of nature (Mr. Shangin), refer to the geological formation of the mountains in the valleys of the Taharysh, and of the Korgon, a tributary of the former.

The summit of the mountain-mass is covered with a brecia of jasper, mingled with pieces of chalcedony, carnelian, &c., and under it lies a bed of slate-formation only two feet thick. This rests on a bed of breccia of red jasper, which contains many pieces of jasper of a Jasperina or Cretaceous age, and is covered by a stratum of pure red jasper. In the lower part of this jasper a few cubes of felspar are inclosed, but they are of very small size, and the lower down the more frequent is the appearance of such cubes. These layers occupy about 300 feet, and have a substratum of the most perfect red porphyry, containing white and yellowish cubes of felspar, among which the very small cubes of felspar above-mentioned are disseminated. Sometimes the breccia is found between the jasper and porphyry, and at others the jasper is found between the beds of porphyry, or the porphyry between those of jasper, but these formations only occur at the external and remoter protuberances of the mountain-mass. The granite is never found over the porphyry, or rather, the felspar or quartz is more abundant on the summit, but only in a few places calcareous hills join the mass, especially those which contain the coraline species. The granite is only visible on the lower part of the mountains, where it forms regular strata dipping somewhat towards the principal valleys.

This is the formation of the mountain-mass near its centre, but on its outskirts, near the lake of Kolywan, the granite-formation, for about ten miles, is unaccompanied by any other rocks, and only when it approaches the centre of the mountains do we find the granite again confirmed by porphyry. On the western edge of the mountains along the Irtish and the Bukhtarma, the granite likewise occupies the exterior heights, and behind it rise higher mountains composed chiefly of greenstone slate. Here the granite appears in layers, close-grained transverse lines, and is also split nearly at right angles, so as to form rhomboidal figures; and it is observed that its surface is much affected by the air and greatly decomposed. In the same quarter Humboldt observed a district extending more than 15,000 feet in length, on which the granite, lying horizontally, has been burst through by a mass of porphyry which now overlaps it; while the granite covers on the sides of the porphyry great masses of argillaceous slate, which in part form as much as one hundred feet in thickness.

All these facts concur to prove that the porphyry masses covered with layers of jasper have been heaved up by a powerful agency through the granite lying on them; but as the granite has great hardness and weight, it was not carried up along with the porphyry, but was left behind at the top, and forced down on the side of the porphyry. The granite, which is merely a cold and heavy jasper, is mixed with pieces of jasper, and even the metallic riches which are found to the east of the Irtish are among the latter, the lead-ore containing silver, and the
red copper-ore with diopside has attracted the attention of mineralogists.
The products of the mines of this district consists of silver containing some gold, copper, and lead. The mines from which these metals are extracted have been worked on a large scale, at some unknown period, and by an unknown nation. In the middle of the last century the Russians began to work them. The mining which were first worked are the fumaroles of the mountain and the silver, lead, copper, and at no great distance from it; but gradually they became exhausted, whilst towards the close of the last, and in the course of the present century, very rich mines have been discovered on the western side, on the banks of the rivers, in forests, and fields all appearance, many more will be found in that quarter.
The principal mines are, 1. That of Syranov on the southern banks of the Bukh tarma, about forty miles from the Irth and not far from the boundary of the Chinese empire, containing some considerable quantities of silver and lead. 2. The mines of Ridderek and Krukov on the banks of the Ulba, which joins the Irth between the Bukh tarma and Uba. They produce silver and lead, and are at present the richest in this quarter. 3. The mines of Semenov, farther to the north of Krukov, also furnish much of the silver and copper, and are not considerable. 4. The mines of the Schlangenberg, famous for the great quantity of silver which in the last century was got from them, likewise on the north of the Ulba, are not so rich as the former; indeed the whole of the river Taharyah. It is remarkable, that the metallic ores veins are here imbedded in rocks of dark porphyry. In many mineralogical collections very fine specimens of gold-ore, silver-ore, and copper-ore, brought from these mines, are met with but, as they are being worked, these mines begin to be exhausted. 5. The mines of Wokresenke, which produce copper, are at present not worked. 6. The mines of Loko tusk, to the west of those of the Schlangenberg, produce a great quantity of copper. In the neighbourhood of these mines, Pallas discovered and examined several kinds of the mountain-chains, of which the teeth, of two different species, have been brought to the sciences, and by them are known to have been found in the mountains, and the Indian mines.

We may here notice the extensive polishing works at Kolywano-Wokresenke, where the finest granites, porphyry, jaspers, agates, and marble, brought from the river Korgon, are worked into tables, vases, basins, chimney-pieces, columns, and pavements. The employ 300 workmen, and are carried on at the Emperor's cost.

The botany of this mountain-region has only in a few places been examined with care, but has enriched our knowledge with some specimens of turfa, trollius, anatolianus, etc. On the low banks of the Irth and other rivers, poplars, willows, loniceras, (Lonic. tartarica, Lonic. crassifolia, etc.,) medlars, privets, white thorns, wild roses, and other bushes are found in abundance. In the lower parts of the valleys grow different kinds of poplar, birch, willows, aspen, Lonicera, etc., currants, and some kind of roses. The slopes are covered with large forests of larch, mingled with birch, fir, etc. Birch ceased to grow at 4500 feet, but other forest trees extend nearly 1000 feet higher. Higher up, only Picea alba, and Juniperus sabina, and many are found. But the larch, though still from 9 to 12 feet high, is stunted in its growth, and the other trees are dwarfish, and extend their branches along the ground. The Pinus cembra was found 6187 feet above the level of the sea. It grow on the stony lands of the summits, only a few dwarfish firs are found. The dried leaves of the Saxifraga cresssfolia are used in Siberia and other parts of upper Asia for a substitute for tea. They are chiefly gathered in the valley of the Taharyah on a mountain, which, on that account, is called by the Russians Tahaynaya Sopka, the 'Tea-mountain.' The leathery, spingy leaves of this plant fall off in the fourth year, when those only are gathered which are quite black. They require no other preparation for being used. The infusion is used for an astrangent taste, similar to that of tea, but the aromatic flavour is wanting.

Agriculture was introduced into the valleys of this mountain-range about 100 years ago, and its progress has not been rapid. The best cultivated places are near the mines, or the towns which have sprung up in their neighbourhood. But in no part is cultivation carried higher than 4000 feet above the level of the sea. Rye, spring-wheat, buck-wheat, barley, oats, and millet; and cabbages, onions, gerkins, poppies, and pumpkins, are the chief grains and vegetables cultivated in this mountain region.

The natives of this mountain-region are altogether occupied with their cattle, which they conduct in spring to the high table-lands, which then give good pasture, and in autumn to the banks of the rivers. Their cattle are chiefly horses, sheep with fat tails, and a few camels. From the milk of the mares they make an intoxicating beverage, called cumis.

The wild animals of these mountains are numerous. Bears abound in every part, as likewise elk, stag of a large size, red deer, foxtail, lynces, sloth, mountain-bears, (Lepus alpinus,) and squirlers; and on the rivers beavers, which, however, at present are less frequently met with, and others. The best furs are obtained from the sables, which here are small and with a short hair, but their black and white tail is very fine. The sables are taken with the musk,ol, and the argali, a kind of wild goat. It is not ascertainned whether or not the wild goat of the mountains, (Equus hemionus,) and the wild ass are to be included in the zoology of these mountains; the chamois does not occur.
The variety of birds is not great. The most remarkable bird is the mountain swallow (Hirundo alpestris, or dauurica, Pallas,) which makes its nests in the mountains, and begin to be exhausted. 5. The mines of Wokresenke, which produce copper, are at present not worked. 6. The mines of Loketusk, to the west of those of the Schlangenberg, produce a great quantity of copper. In the neighbourhood of these mines, Pallas discovered and examined several kinds of the mountain-chains, of which the teeth, of two different species, have been brought to the sciences, and by them are known to have been found in the mountains, and the Indian mines.

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far from the place where the Thian-shan Oolla joins the Great-Desert.

According to this description, the Great Altaï, before it forms its many ramifications, descends more or less parallel to the Ulangom Oïla, and as they are some degrees of latitude distant from one another, a valley of great extent is formed between them, which is every where inclosed by high mountain-ranges. This valley is watered by two considerable streams, the larger of which, the Kooke Sirke Oïla joins the Baikaline mountains, and runs for about 200 miles to the south-west, receiving the waters of many rivers which descend from the Great Altaï and the Ulangom Oïla. It then changes its direction to the north, and after a considerable distance falls into the Kirsigs-Nor, (lake of the Kirsigs,) which, according to the Chinese Geography, has a circumference of upwards of 100 miles, and lies at the foot of the Ulangom Oïla. The other river is the Khobdu or Khobdo, which takes its rise in the Etag Altai, and after running to the south-east along the eastern declivity of the Great Altai, falls into the Yke Areal Nor, or Bhalor Nor, a lake not much less than the Kirsigs Nor, and situated probably not far from the southern declivity of the Etag Altai. This country has never been visited by Europeans, save in a further kind.

We now pass to the description of the three mountain-chains which unite the Etag Altai and the Baikaline Mountains. Their general direction is from west to east, near the northern limits of Russia. They are placed a considerable distance from one another, the valleys which intervene between them are extensive and run in the same direction as the mountains.

The valley between the Ulangom Oïla and the more northern part of the Tungu Oïla, according to the Chinese authorities, traversed by a considerable river, the Tras, which has its source in the northern range, the Tungu Oïla, receives many small rivers from the north and from the south, and falls, not very far from the place where the Tungu Oïla joins the Etag Altai, into a lateral mountain-range, called the Upas Nor. This lake receives likewise, on its western side, other rivers descending from the Etag Altai mountains. As we do not know exactly the distance between the Ulangom-Oïla and the Tungu-Oïla, we are not able to form a conjecture as to the breadth of valleys which in all other respects is entirely unknown to us, being situated within the limits of the Chinese empire.

The same observation may to a certain extent be applied to the great valley which lies to the north, between the Tungou-Oïla and the mountains of Sayyansk, and contains the source of the Yenesei. But here the Chinese geography gives more minute particulars, and as the northern range (the Mountains of Sayyansk) belong in great part to the Russian territory, we have been enabled to vary it by a few facts from the other authors.

The Tungou-Oïla seems to extend chiefly to the south of the 56th parallel, and the mountains of Sayyansk occupy the country between the 51st and 53rd parallel. In the valley between them, which extends from 420 to 450 miles from east to west, the curve of the river makes a great bend, and it is said that the river, the Yenesei, whose course is chiefly to the south-west from the source up to its junction with the Hua-Kimu. Both rivers are increased by the waters descending from both the mountain-ranges, in which a great number of alpine lakes exist. At a certain part of the river, the Yenesei makes a considerable bend, coming from east to west, takes the name of Ta-Kimu (the great Kimu or Kem,) which is the only name of the Yenesei known in the Chinese empire. The Ta-Kimu receives likewise many tributaries from the south as well as from the north, till at last it unites with the Kemishky, (or Little Kem, the Kemishky of the Russians,) a river running in a quite opposite direction from west to east, and having its sources in the Etag Altai, at the point where this mountain joins the Ulangou-Oïla, near far from the sources of the Tchelishyman. The course of the Great Kem, from its source to its junction with the Little Kem, may be upwards of 260 miles, and that of the Little Kem upwards of 176 miles.

The river formed by their union is called by the Russians Yenesei, and runs north, traversing the mountains of Sayyansk in all their breadth, and forming some considerable cascades. It enters the leaves of Siberia below the town of Kramyorsk, and before it reaches Yeneseisk it reaches on the right a large river, the Upper Tungouk, which, rising in the mountains of Sayyansk, and falls into the Yenesei before its junction with the Upper Tungouk, a river, a little larger, rises where the Kambu is, therefore, not considerable, except the Abakan, which carries down the water of nearly all the rivers rising between the Tchelishyman and the Yenesei in the western chain of the mountains of Sayyansk. The Upper Tangouk is a small river, which joins the Yenesei, after a considerable distance, in the Baikaline range, to which, therefore, its description belongs. After its union with the Upper Tungouk, the Yenesei having made a great bend to the east, resumes its northern course and receives another great tributary, the Lower Tangouk, which branches like the Baikaline range. From this point the river continues its northern course till it reaches the Arctic Ocean, forming at its outfall a large gulf. The whole course of the Yenesei amounts to 4,000 miles.

The mountains of Sayyansk have not been examined with the same care as the Etag Altai. About the middle of the last century some mines of silver and copper were discovered and worked; but they were soon abandoned, because the supports of the mines are placed a considerable distance from one another, the valleys which intervene between them are extensive and run in the same direction as the mountains.

The botany of the lower ranges was examined by Padlas. The ranges are covered with brushwood, larch, fir of different kinds, and mountain-sage. Among the shrubs there are bilberry, blueberries, and many kinds of wild roses, especially Rhododendron chrysanthemum, which cover with its beautiful yellow flowers all the rocks of the mountain, and Rhododendron dauricum. Some of the plants belonging more properly to the Daurian region were also found, especially some kinds of Astragalus. Among the domestic animals, the rein-deer must be added to the Etag Altai. The wild animals are the same; the red wolf and the sable are very numerous. According to the statement of the natives, the wild goat of the Alpa is common in the higher parts. The rivers abound with fish, especially salmon and trout.

The Russian agriculture has made some progress; some of the natives, who formerly lived only on the produce of their herds, now begin to cultivate rye, barley, oats, &c.

The three mountain-chains, the Ulangom-Oïla, the Tungou-Oïla, and the mountains of Sayyansk, terminate to the east in an immense mountain-mass, which, from the sources of the Orkho in the south, to those of the Upper Angara in the north, extends from the parallel of 62° north, to 50° north latitude. The middle of it is called Jenisseisk, of which about half is in the Orkho, the rest belongs to the Altai. It is by many inhabitants (the Kaliks Mongola) Khamgi to the west of the Orkho, and Kementi to the east of that river. The latter is properly only a part of the Kung-han-Oïla, a large range applied by the Mongols to the high mountain-ranges, running to the south and to the north of the river Kemoi. The Russians call the range of mountains which separates this river from the lake of Baikal and its tributaries Yalponoi Kurebed. (Stone mountains,) or the Mountain of Daurias.

On the south, the Baikaline mountain-chain joins the Great Desert, called the Gobi by the Mongols, and the Shamo (sea of sand) by the Chinese; or more properly, the mountains are only to be considered as the extreme northern edge of
the desert. For though they offer a truly alpine aspect, and all the difficulties of mountain-passes to travellers who enter on the north, no descent is made on the south side. No sooner has the traveller attained the highest part of the mountains than he rises into the hope of table-land, extending as far as the great wall on the north of China. Only on the east, between the tributaries of the Selenga and those of the Amur, they may be called a chain, for here they decline on both sides. Further to the north they form a series of peaks about thirty; at the three rent by the Aldan Mountains; and on the north-western side, towards the river Yenesei, they gradually terminate in the lowlands of Siberia, not far from the junction of the Upper Tunguska with that river.

There are probably few countries, if any, on the globe of equal extent which can vie with this mountain-region in the number of rivers and lakes. It is stated that 177 rivers fall into the lake of Baikal, and on a new chart of this lake published by the Geophysical Institute, after the Siberian summer, are shown. Besides the rivers falling into the lake, the sources of the five large rivers are in this range. The Upper Tunguska rises on the south-west, the Lower Tunguska and Lena on the west, and the Witim, a large tributary to the Lena, on the south. The headwaters of the Lena are so far as can be determined by the upper course of the rivers on the plains is slow and quiet, but when they arrive at the descent from one terrace to another, they run with great rapidity and frequently form cascades. In its descent to the north, it is divided into two branches, each of which is less than 300 miles. The Upper Angara runs about 450 miles. Its sources lie to the east of its mouth, nearly at an equal distance from the sources of the Lena and those of the Witim.About 120 miles, near its confluence with the Lower Angara, the eastern branch is divided into a river, on the west of which is the river, and the latter in the Aldan Mountains. Below Yakutsk, it makes a great bend, by which its course is changed from north-east to north-west, and even from the north-east to the north-west, and in this direction it joins the Lena.

Three large rivers fall into the lake, the Upper Angara at the northern extremity, the Bargnoun at the east, and the Usen at the north of the lake, which are not less than 300 miles. The Upper Angara runs about 450 miles. Its sources lie to the east of its mouth, nearly at an equal distance from the sources of the Lena and those of the Witim. About 120 miles, near its confluence with the Lower Angara, the eastern branch is divided into a river, on the west of which is the river, and the latter in the Aldan Mountains. Below Yakutsk, it makes a great bend, by which its course is changed from north-east to north-west, and even from the north-east to the north-west, and in this direction it joins the Lena.

This river is greatly venerated by the Mongols, because on its banks at Karakorum was the seat of the dynasty of Tshingus-Khan. The Tshikoi, the Khilok, and the Uda run, on an average, 200 miles; the Khilok is the largest of the tributaries of the Tshikoi forms for a considerable space the boundary line of the two countries. The lake of Baikal extends between the parallels of 51° and 56°, and cuts the meridians of 99° and 106° obliquely. Its length is upwards of 350 miles, but its mean breadth only 70 miles. The shores of this lake are, for a distance of forty-eight miles. Its surface covers more than 14,600 square miles, or half the extent of Scotland. [See Baikal.]

The water of this lake is carried off by one outlet, the Lower Angara, which issues from the lake on the western side of the Great Khingan, and forms a large delta of about forty-five miles, unites with the river Irkut, at the town of Irkutsk. Lower down it receives the waters of the Uda, a river descending from the mountains called Erguiik Targak Tuiga, and then its name is changed into that of the Upper Tunguska. At this junction it changes its course to the north, till again by a great bend it resumes its western course, nearly under the 60th parallel, and finally joins the Yenesei. Two or three miles from the lake the river passes into the Yenisei delta, a high and steep mountains, rises in a narrow channel, and forms considerable and large rapids for many miles, which render the navigation of this river very difficult.

The Lower Angara, another tributary of the Yenesei, which issues from the lake on the eastern side of the Lena, on the lower sides of the mountain-masses, where they approach to the low lands of Siberia. The first part of its course is north-west, but it gradually declines to north-east and east, and again to north-west and north-west, till it joins the Lena, after a great distance due west. It does not receive any considerable river.

The Lena rises, like the lower Tunguska, in the mountains enclosing the lake of Baikal on its western side, at about twenty or twenty-four miles distance from the lake, in the district of the Lena, and attains to a height of 350 miles. It forms the boundary of the Lena and the Olekman, of which the former rises in the Baikalene, and the latter in the Aldan Mountains. Below Yakutsk, it makes a great bend, by which its course is changed from north-east to north-west, and even from the north-east to the north-west, and in this direction it joins the Lena. Its length of its whole course may be about 2000 miles. Its whole course may amount to 2000 miles. It rises, as the Lower Angara, from the Lena, on the south, a river of about thirty or forty miles from the eastern shore of the lake of Baikal, not far from the sources of the Upper Angara. It first runs with many bends to the north-east, nearly parallel to the mountain-chain that extends between the Lena and the Witim, then to the north-west, and in this direction it joins the Lena. The length of its whole course may be between 400 and 500 miles.

The third river system, which originates in the Baikalene mountains, is that of the Amur. Nearly all the consideration of the above rivers which forms in that part of the Baikalene mountains, which by the Russians is called Yablonoi Khrebet, and by the Chinese Khing-han, and in which, though of a moderate mean height, the Tokhokonde, an alternate of pebbles and water, and in the region of eternal snow, to 7578 feet above the level of the sea.
the range of the Aldan mountains, and the direction of its masses is everywhere from east to west. In passing the Yablonnoi Khrebet, Pallas observed on the highest ridge a very fine-grained granite mixed with a small quantity of mica, which decreases towards the east. Gradually the granite passes into white stone, which is replaced by green stone, and the latter by gneiss. But the ranges through which the rivers forming the Amur pass are principally composed of granite and gneiss; the lower part, however, in some places is slaty formation, and in some places by chalch; the two latter are even found alternating with one another. On the tops of some mountains jasper has been observed, and a few lower rocks consist entirely of this material.

Around the lake of Baikal, especially on its southern shore, there are unequivocal signs that this region once has been agitated by volcanic agency. In some places lava has been observed, and in the southern and eastern mountains hot and sulphurous springs. Rare species of fowl are frequent in this region. Besides, this region is subject to strong earthquakes, and the peculiar motion which the waters of the lake experience is attributed to a similar cause. [See Baikal.]

The metallic wealth of the Baikal mountains is small, and is largely devoted to some indications of copper and lead, which latter does not seem to be abundant, and is only worked in two or three places. In this mountain-region, a kind of mica is found which splits into very thin and transparent lamina, and is used all over Siberia and in some parts of European Russia and is met with on the banks of the small river Mansa, a tributary to the Witim, and here alone, at present, it is worked to any considerable extent. In the mountains on the east of the lake are many salt lakes, some of which contain ferruginous water, with or without iron. None of these are salt, and only one place on the lake is not far from the lake, on the banks of a small stream, is found a quantity of lapsi lazuli of every shade of colour.

The mineral riches of the mountains to the north of the river Lena, and to the east of the Amur, are nowhere more important. The lower ridges consist probably of the flint-formations of chalk, and contain abundance of flint, which, however, is only worked for the silver and gold it contains. There are twenty-one mines, of which Captain Cochrane names the three principal. The production of silver between 1794 and 1809, only 17,020 lbs of silver were extracted. As, however, in the first fifty or sixty years the whole produce amounted only to 1624 pubs, we find for the remainder the annual produce of 235 pubs, or 16,500 mohrs. This product has been diminishing ever since, and the mines are exhausted, but because wood begins to be scarce in the neighborhood of the mines. The lead is not used on account of the difficulty of transporting it over the mountains. According to Captain Cochrane, an iron mine has been discovered at the source of the Lena, and it is said that it contains considerable wealth, and is锰和 likewise the same metal. Neither of these is met with in Siberia. A kind of beluga is found in the Lena, and it is said that the fisherman with two new species, Cyprinus longipinnae and Cyprinus labio. The barbels are of less size than those of the Wiga and likewise the same shade of fish (Silurus asotus). Neither of these is met with in Siberia. A kind of beluga is found in the Lena, and it is said that the fisherman with two new species, Cyprinus longipinnae and Cyprinus labio. The barbels are of less size than those of the Wiga and likewise the same shade of fish (Silurus asotus). Neither of these is met with in Siberia. A kind of beluga is found in the Lena, and it is said that the fisherman with two new species, Cyprinus longipinnae and Cyprinus labio. The barbels are of less size than those of the Wiga and likewise the same shade of fish (Silurus asotus). Neither of these is met with in Siberia. A kind of beluga is found in the Lena, and it is said that the fisherman with two new species, Cyprinus longipinnae and Cyprinus labio. The barbels are of less size than those of the Wiga and likewise the same shade of fish (Silurus asotus).
largest, and even navigable for a short extent. Towards the west and north, the mountains descend, like all the ranges of the Altai, in terraces, and long-extended broad plains, overtopped by a few elevated summits of no great height. Few of them arrive at the line of eternal snow. A modern traveller has found a summit rising to upwards of 5000 feet. The valleys run here likewise mostly in the direction from south to north, but south-east, and are joined together by a few transverse valleys, which carry the waters to the west. But this observation holds only good for the southern portion of the range up to the sources of the Indighirka, for from hence to the Cape Tsimlyshourbs, all their length seem to be cut by long transverse valleys.

Two large tributary rivers of the Lena rise in this chain, the Oklma and the Aldan; the former of which, rising to the north of Nertchinsk nearly in the meridian of that town, runs upwards of 300 miles through a desolate, nearly dry north, till it reaches the main stream. The Aldan is a large river, whose course is upwards of 900 miles from its source, under about the 55th parallel, to its junction with the Lena, under the 63d. It receives nearly all the waters issuing from the principal chain between the tributaries of the Amur, and the sources of the Indighirka. From its source it runs in a north-west direction, cutting eight degrees of latitude and nine of longitude, and in this tract it receives on either side rivers coming from the range of the Maya, a river that runs up 400 miles, and joins, not far from its mouth, the Yudoma, which is not inferior in size and length. The inferior course of the Aldan is in a transverse valley, nearly due west, for about 250 miles, and here it divides into various, mostly defensive, little lakes like the Anga, whose course is from 400 to 500 miles parallel to that of the Aldan. The Aldan is of great importance for the communication between Yakutsk and Okhotsk; the merchandise ascends the Altai, the Maya, and the Yudoma, and is, from the latter, transported over a comparatively small extent to the Okhotsk, and on that river to Okhotsk.

The Yana, the Indighirka, and the Kolyma run nearly parallel to one another to the north, with a declination to the east, which is greatest in the last, and smallest in the first. We find them issuing from the range of the Upper Anga, whose name is derived from various roots, and means, the Indighirka of between 600 and 700, and the Kolyma of about 900 miles.

The Anadir, which falls into the sea of Kamchatka, the most northern portion of the Pacific Ocean, traverses a very narrow and dry country. It is not necessary for us to point the compass that it is difficult to indicate its course farther than by stating, that in the upper part of its course its general direction is from north to south, and in the lower from west to east. Its whole length exceeds 600 miles.

The distribution of the plants and animals on this extensive range, and their gradual disappearance towards the north, is almost entirely unknown; at least, not so far known and there exist some indications that these valleys have of the world are sables so numerous as here; but they are not of the first quality, and much inferior to those of the Upper Anga. The wild rein-deer, which forms here the principal object of the chase, has a spotted skin.

We cannot leave this region without observing, that in the low country, which extends between the northern extremity of this chain and the Arctic Ocean from the west of the mouth of the Lena to the east of that of the Kolyma, innumerable heaps of fossil bones of elephants, rhinoceroses, bears, etc., may be observed, and naturalists cannot fail to find the whole a subject of research, as remains of diluvial remains are imbedded in a soil which apparently is alluvial. (See Siberia.)

The chain of mountains which traverses the peninsula of Kamchatka may be considered as an important part of those of the Pacific Ocean, but as its description is closely united with that of the peninsula itself, it will be found under the title of the Altai.

The Altai mountains are situated between two regions, which have been supposed to be peculiarly adapted for agriculture, except in a few isolated places, and which, therefore, from time immemorial have been inhabited by wandering nations, who draw their subsistence from herds. The mountains, however, contain many valleys well adapted for agriculture, and which, once cultivated, very probably by the same nation that has worked the mines all over the range to a great extent. This nation, which is known under the name of the Thudes, is not named in history, and has entirely disappeared, though the immense number of antient tombs found everywhere, but especially on the mountains of Saytchum, evidently proves that this region was once populated. The nation probably was destroyed by its Nomad neighbours, and with it agriculture disappeared from the valleys.

But since the two most extensive empires of the world, the Chinese and the Russian, have taken possession of these kingdoms, and peace has been established, there is no doubt, for many centuries has not enjoyed it, agriculture has again been introduced, and as it would seem with better success by the Chinese than by their more northern neighbours. (See Baron Humboldt, Julius von Klaproth, and in the Travels of Leduc, have been used here.)

ALTAMURA, a considerable town of the kingdom of Naples, in the province of Bari, near the borders of Basilicata. Its population is reckoned at 16,000 (in 1789 it was 16,890). It was a baronial estate of the Farnese family, after the extinction of which it devolved on Charles Borromeo, Infante of Spain, and afterwards King of Naples. It is built on a hill at the foot of the Apennines, and has an old castle. It has a fine cathedral, founded by Frederic II. and ornamented with pictures. It lies on the high road from Puja to Basilicata. In 1164 it was united to the republican party in that district, and being summoned by Cardinal Ruffo, who was advancing by that road at the head of his Calabrians, refused to open its gates, and after an obstinate and severe storm, when a dreadful massacre of the inhabitants took place, was ended by fire, and other horrors. Since that time, however, it has recovered, and is now a place of considerable trade in the agricultural produce of the country; good wheat is grown in the neighbourhood. Its fairs are well attended. It is stated by some authorities that many of the inhabitants are Greeks. It is in about 40° 47' N. lat., and about 30 miles W.S. of Bari.

ALTAR, an erection to offer sacrifice upon. The first altar mentioned is that set up by Noah, to offer sacrifice when he had been delivered from the waters of the deluge. Humboldt has noticed, that the Jewish patriarchs' altars are continually said to have been erected by them, in different places, as circumstances rendered it expedient. These seem to have been built of earth, of unhewn stone, like the altars which God commanded Moses to raise: excursions. Some ancient authors, however, might be consulted, supra. The law was given, the right of raising altars and offering sacrifice was no longer left common to all men; but one altar of burnt-offering, at which alone victims were slain, was made in the whole nation, and the public sacrifice, this institution, offered sacrifice upon it for all. This in the first instance was constructed of wood, covered with brass, and always followed the ark, while the ark was migratory; but when Solomon built the temple, he placed a stone altar, with a pagan nations with which the Jews were associated, and to other altars, one solely appropriated to burning incense, called the altar of incense; the other called the altar of shew-bread, because loaves were placed upon it, and changed every Sabbath. Both of these stood in the interior of the temple.

We constantly meet in the Bible with the expression of the ' horns of the altar.' Some of these were really the horns of animals; others that they were merely projections at the corners. One use of an altar is to ascend, and on the summit of which sacrifices were performed. This and similar altars would be placed in consecrated places, and were the privilege of sanctuary upon favourite churches and convents, [See Altar.]

A sort of natural religion seems to have pointed out the tops of hills, and groves, as the fittest spots for altars. The Jews were addicted to worshipping in high places; and it was hardly possible to prevent the Jews from falling into this habit. " They also built them high places, and images,
and groves, on every high hill, and under every green tree.

1 Kings xiv. 23. Passages of the same import occur continually in the Jewish Chronicles. The northern nations of ancient Europe worshipped in the thickest shade of their forests. The ancient Persians, it is said (Herodotus tells us (I. 131), made no temples, nor statues, nor altars, but worshipped the deity on the tops of the mountains.

The altars of the Greeks were of three sorts: those dedicated to the heavenly gods, (βραχία), were often structures of considerable height; those of the infernal deities (if such may be called altars) were trenches sunk in the ground (βοθοί, κακόες). They may again be divided into three classes, those for burnt-offerings (συμφαλλικαί), in which no fire was used, nor meant for offerings of fruit, meal-cakes, &c. &c.; and those on which fire might be used to consume vegetable productions, but no blood was spilled (συμφαλλικαί). The altar: when dedicated to either of the latter classes, it was often nothing more than a raised heath or steep house; a temple—really but two altars, one in the open air before it, for burnt-offerings; another before the statue of the god to whom the building was sacred. Altars were often erected where there was no temple. These altars were usually square, sometimes circular, or triangular. They were often made of marble, and magnificently sculptured.

The Roman altars and rites of worship much resemble the Greek. We must distinguish between altar and ara. The altar, indicated by the Latin altar, signifies high, was an elevated structure, used only for burnt-offerings, and dedicated to none but the heavenly gods: the latter might belong either to the heavenly, or infernal gods, or to heroes. The Romans, however, like the Greeks, dug terraces into which they poured libations to the infernal gods. Ara seems to be the general term, and is used by Virgil as including altar.

En quatoro aedibus Ecco die ille Diapala, ducepe altaeria Phoebi. Ed. t. 65.

From altar comes the English word altar, which by the Roman Catholic church is used in its proper sense, to denote an erection on which sacrifice is offered, being their doctrine that the mass is a sacrifice. Applied to the communion-table of an English Protestant church, the word is used metaphorically, rather than as the Latin: for the English church teaches the sacrament of the Lord's Supper to be no sacrifice, but merely a symbol.

ALTENDORF, or ALTORF. (Old Village.) is the capital of the Canton of Uri in Switzerland. It stands at a short distance on the lake of the Els, surrounded by lofty mountains, and on the right bank of the Reuss, which flows into the lake. It is about twenty miles S.E. of Luzern, and in 46° 52' N. lat., 8° 45' E. long. the elevation of the town above the lake is given differently by different writers; the lake itself, is at the level of the sea. Altorf being at the foot of a lofty mountain would be in danger of suffering from avalanches, but for the pine forests on the slopes, which serve as a rampart against the falling masses. It was burnt in 1799, and rebuilt in better style. The town stands on a hill or hillside, church, and a school, are among the chief buildings. The population is about 1700. Altorf stands at the Swiss termination of the pass over Mount St. Goarhald, and supplies horses and carriages for crossing the mountains to Bellinzona in Italy. It is also a kind of entrepot for goods passing into or from Italy by the St. Goarhald pass. An old tower at Altorf is said to mark the spot from which Tell shot the apple from his son's head: and a fountain now occupies the place of the apple-tree under which the hero stood.

ALTENBURG, the capital of the duchy of Saxone-Altenburg, is situated about two miles west of the left bank of the Pleisse, a tributary to the Elster, 50° 50' N. lat. 12° 27' E. long. The town stands on uneven ground, and consists of a market place, and a number of suburbs, contains eight churches, a gymnasium founded in 1703, with a considerable library, an hospital and house of correction, also a foundation for noble ladies, a society of naturalists, a theatre, &c. The chief branches of industry are manufacture of leather, gunpowder, &c. There is also a considerable trade in cattle and corn.

The population in 1822 was 10,604; in 1832, 12,629.

The castle of Altenburg stands on a rock, and is known in German history as the place for which the young princes Ernest and Albert, the founders of the two chief lines of the Saxon house, were carried off by Kunz von Kunengers, A.D. 1452. Altenburg was once an imperial city, and the capital of a district called Pleissen. After 1172 we find it mentioned as a place where the emperors sometimes resided and held diets. (See above, page 417, for an account of the duchy and its political changes.)

ALTERNATIVES, a word signifying 'things that produce a change.' Under this head are comprehended those medicines which do not produce any immediate or striking perceptible effect, but gradually bring the body to a diseased state to a more healthy one. They seem to be a removing unhealthy conditions of the system, much in the same way that a drop of water hollows a stone, not by violence, but by repeatedly softening it. When they are given in small doses, and, even when given in large doses, they are often repeated. The former mode of administering them is employed when they are poisons, in a therapeutic manner, its claim to be so regarded depending less upon its actual powers, than upon the manner in which these are modeled, so as to effect a particular purpose. Thus by diminishing the dose, or combining them with other medicines, and the most useful drugs are employed as alternatives, and made to produce effects entirely opposite to what they do when given alone or in large doses. Ten grains of sarsaparilla, for example, taken with some salt into the stomach, will specifically cause a feeling of warmth, and a gradually increasing elevation of the blood, and a feeling of sickness and loss of appetite, though not actual vomiting—while one-quarter or one-half a grain taken about an hour before each meal for several days in succession, would be found greatly to increase the appetite, and improve the digestion. Another example is seen in the use of opium; when with two of opium, will not produce any obvious effect on the stomach, but, if the patient be kept warm in bed, will cause a profuse flow of perspiration. Many of the forms or preparations of mercury, even the most safe and poisonous, when given in very small doses, neither prove purgative nor destructive to life, but, on the contrary, often produce signal benefit, relieving the patient from many complaints which rendered his days miserable, or even threatened to shorten them. Nor is the remark confined to the universal power—assertive itself—imperfectly of the restoration of health, since we see it is no make the shivering averse, and at another time cause the agning headache to depart.

Others which are less active may be given in very large doses, and prove, in that case, a valuable and useful article.

The variety of agents which may be used as alternatives must convince us that they cannot all act in the same way, and that their beneficial effects cannot be attributed to the same cause. Most of them appear to act upon the system and energy, and extract from it, in about 1400 feet of the wind, all that is wasted in its consummation, and which might have been thrown into some other and more productive channel. These are termed excretions:—that of the kidneys being no primary or secondary use, while that of the skin covers the most moist and plant—states necessary for its swelling the objects of its existence.

The term excretion is applied to the products of the quantity of those secretions and excretions is essential to the maintenance of that equilibrium, that fair and equaland harmonizing play of all the organs of the body, with weighing no weight or oppression in any part, a main thing giving rise to a rapid and active supply of the various degrees of uneasiness and ill-health: states to which the French apply the expressive term—maladies.

The functions of secretion and excretion being rather vital than chemical processes, they are great and dependent upon the state of the nervous system. This, again, is only
perfect when the blood is of a proper quality; and this last is beholden for its excellence to the thorough performance of digestion, for which a due supply of nervous energy is required.

As all these functions act and react upon each other, it matters but little which of them is the first to fail in contributing its part to the general welfare, as long as the nervous system is not out of order, owing to much mental exertion, or protracted night-watching. At this stage of the treatment, exercise and travelling, change of scene and pursuit, are of much service; or a visit to some watering-place; for mineral springs, having the saline ingredients very minutely divided, may be considered as nature's alternatives.

Where the skin is much affected, exercise of a regulated kind, such as that practised by trainers, may prove useful, as the diet is at the same time strictly attended to. Indeed, a partial or complete change of diet is often the most effectual alternative we can employ.

But neither medicines nor a strict plan of diet should be begun or continued without the advice of a competent judge. It is in such cases that persons are most apt to undertake the cure of their own complaints, and, either by using insufficient means allow them to get rooted in the system—or, by employing the nostrums and secret, but often dangerous, combinations of quacks, become a prey in their purses and persons to ignorance and fraud.

The explanation of the functions of the system, and the action of remedies, already given and hereafter to be given in this work, are by no means intended to enable the patient to dispense with the assistance of his medical attendant, but to enable him to receive the full benefit of that assistance, by enabling him to understand something of the principles on which his treatment is conducted, and thereby to teach him how he may co-operate with his physician in rendering it effectual.

"ALTERNATE." In geometry, angles are said to be alternate which are made by two lines with a third, on opposite sides of it, as ABC and CDB, or EBC and EBD. If two lines be parallel, the alternate angles made by a third line with them are equal.

\[ \begin{align*}
A & \quad B \\
C & \quad D \\
E & \quad F
\end{align*} \]

In algebra, those terms of a proportion are said to be alternate which are separated from one another by another term; thus, in the proportion

\[ 2 \text{ to } 4 \text{ as } 8 \text{ to } 16, \]

2 and 8 are alternate terms, as also 4 and 16. If alternate terms be rendered consequent, and consequent terms alternate, the proportion still continues; thus,

\[ 2 \text{ to } 8 \text{ as } 4 \text{ to } 16. \]

This proposition is the sixteenth of the fifth book of Euclid, and is referred to by the Latin word alternando, or by the English words 'by alternation,' or 'alternately.'

**ALTHEA OFFICINALIS**, or **MARSH-MALLOW**, is a plant the use of whose mucilaginous roots and leaves in all cases in which emollient or demulcent substances are required, is of great antiquity. It is a common European plant, belonging to the natural order Malvaceae, and is often found in marshes, especially near the sea, in great abundance. It is a perennial, with a carrot-shaped white fleshy root, as thick as the thumb, and a foot or more long. The stems are two or three feet high, covered all over with a soft down, which also is found on the leaves, to which it gives a hoary aspect. The leaves are soft, stalked, often a little heart-shaped, divided into three or five shallow serrated lobes. The flowers are of a pale rose colour, and appear in very short clusters from the bosom of the leaves; their calyx is five-toothed, and surrounded with eight or ten, or even more bracteas. The corolla and other parts are like those of the common mallow.

*Althaea Rosea*, the *Holibock*, is another species, found wild in China, and now extremely common in our gardens. Linnaeus considered it a distinct genus, which he called *Alcea*.

**ALTIT/SIMO**, in Music (Italian, the superlative of alto, high). The scale in altissimo commences with F, the octave above the fifth line in the treble.

**ALTITUDE**, from the Latin altus, high, may be rendered by the English word height. This being the case, we should have referred it to the English word, if the term were not particularly reserved in astronomy to signify, not the length, but the angle of elevation. Thus, if AB be the position of a spectator on the earth, and AB the line on the horizon, which is drawn towards the point directly under the star B, the angle AB is the altitude of the star. For other less common applications of the term, see Heights.

The altitude of the pole is the geographical latitude of the place of observation, and remains the same throughout the twenty-four hours: the altitudes of the stars and sun change with the diurnal motion; being nothing when they rise and set, and greatest when they are on the meridian.

The altitude of a star is directly observed at sea with the Sextant; and the uses which are made of such observations may be seen in the following propositions, into the proofs of which we cannot enter here.

1. When the latitude of the place is known, the time of day may be found from one observation of the altitude of the sun or a star; or conversely, if the time of day be known, the latitude may be found from the observation.

2. When neither the time nor the latitude is known, both may be found by observing any two altitudes of the sun or a
star, and noting the time which elapses between the observations; but it is most convenient to observe one altitude first, before a star comes to the meridian, and then wait for the time when the same star comes to the same altitude on the other side of the meridian. Or if the latitude be very nearly known, a more accurate approximation may be simply made by the above method.

3. If the star be one of those which never sets, the altitude of the place is the half sum of its greatest and least altitudes.

In all that precedes, it is supposed that the star is known— that is, that its right ascension and declination are known; and certain corrections must be applied to the observed altitude for which see Refraction, Parallax, Dip.

In fixed observations on land, the altitude of stars, or rather their zenith distances, which are what the altitudes want of ninety degrees, are observed with the mural or the transit circle (see Circle, Mural; Circle, Transit); but only when the stars are on the meridian. Let a be the place of the observer, c and s the north and south points of his horizon, p the north pole, z the zenith, c f b the meridian, a f a, a z a, a p a, and a s a, each of which may be represented by angles at A, and s the star on the meridian whose altitude, z a, or c s, according as it is south or north of the zenith, or its complement, the zenith distance, z s, has been observed. Then, z being a point in the equator, and p z being equal to z c, both being ninety degrees, take away the common part z p, and z s is equal to p c, the latitude of the place. And z s, or the star's declination, is z s diminished by z a, if the star passes the meridian above c, or z s diminished by z s, if the star passes below s. If the star passes between the zenith and the pole, the declination is the sum of z z and z s. That is, the declination of a star is the difference between its observed zenith distance and the latitude of the place, if the star passes south of the zenith, or the sum of the same quantities, if it passes between the zenith and the pole. In the first case the declination is north, if the latitude be greater than the zenith distance; south, if the zenith distance be greater than the latitude; in the second case, it is always north.

In this way, with a number of minute precautions for the sake of accuracy, catalogues of the declinations of stars are formed, by observation of their altitudes, or, which amounts to the same thing, of their zenith distances.

For the altitude of the Nonagesimal, see Nonagesimal.

ALTO, in Music (Italian, altissimo), the highest natural adult male voice, or countertenor, the usual compass of which is, from F the fourth line in the base, to C the third space on the treble, e. g.—

\[ \text{\textit{Alto}} \]

Alt, Italian, the instrument called in England the Tenor, and by the Italians, the Viola.

ALTO CLEF, in Music, a name of the C clef, when placed on the third line; more commonly, in England, called the countertenor clef. See Clef.

ALTO-RILIEVO (high relief), a term which designates that kind of sculpture which is executed on a flat surface, but projects considerably above the ground or plane. The degree of projection given to alto-rilievo depends on the will of the sculptor; more than three-fourths of the figure are frequently shown, and figures in basso-rilievo (low relief) are sometimes added, to express gradations of distance. The attempt to give a picturesque air to sculpture has usually a barbarous effect; and, in the hands of incompetent artists, and those of practice by alto-rilievo has seduced many artists, and of no mean powers, into the experiment. The largest per formance ever executed in alto-rilievo is the stupendous work by Algardi, in St. Peter's at Rome, representing the Repulse of Attila by St. Peter and St. Paul. The gigantic figures in front of this composition project nearly in the full rotundity of nature, and the middle and distant groups give the illusion of all the degrees of projection into the lowest basso-rilievo. However ornamental the style, it is impossible to refuse admiration to the powers displayed in this work. The alto-rilievi by Donatelli at Florence are among the most perfect examples of this art. There are specimens of various practitioners in Westminster Abbey, which exhibit all the eccentricities of bad taste. The most legitimate use of alto-rilievo is where it is introduced in alternate or occasional compartments to give relief by the boldness of its projections to the uniformity of a large surface. Such are the friezes among the Elgin Marbles, which, alternately with the triglyphs, compose the ornament of the entablature which surmounted the exterior colonnade of the Parthenon. Fifteen of these original Metopes, with one cast, are in the British Museum; they are of unequal ex- actness or importance, and it is impossible to refer to as the finest examples extant of alto-rilievo. [See Elgin Marble, published by the Society for the Diffusion of Knowledge.]

ALTONA, a market town in Hampshire, on the road to Winchester, forty-seven miles south-west of London, near the source of the river Wey. It is a well-built place, with three principal streets, partially paved by subscriptions and lighted. Some bombases and serges were made, but this manufacture seems to have decayed, nor is the town at present noted for any particular branch of industry. There are hop preparations in this parish, and there are many curiosity shops in the town. The living is a vicarage in the gift of the Bishop of Winchester. The church is neat, and there are two or three meeting-houses for the Dissenters. Altona has a national school.

The market is on Saturday; and there are two fairs in the year. The population in 1851 was 7742.

During the civil wars, the royalist troops, under Lord Hopton, were surprised at Alton by the Parliamentarians under Sir John and Sir James Waller.

ALTONA, or ALTENA, a considerable city belonging to the Crown of Denmark, situated in the Lordship of Flensburg, which is an appendage to the duchy of Holstein. Next to Copenhagen, Altona is the most important town in the Danish dominions, although at the time when Flens- berg was united with Denmark in 1640, it was only a poor, insignificant village. In 1654, it obtained the rights and privileges of a city.

Altona stands on the north bank of the Elbe, in 55° 34' N. lat., and 9° 55' E. long., about seventy-five miles from the mouth of the river, and about two miles below, and to the west of Hamburg; the suburbs of which city are in fact only separated from the Danish city by a wall.

The manufactures employ about 2200 hands. They consist of silk, woollen, and cotton goods, tobacco, soap, candles, and leathern articles, paper, the provision of distilleries, breweries, and sugar-refineries, besides some establishments of minor importance. Ship-building also has long been carried on, and several vessels belonging to the ports are employed annually in the herring and whale fisheries, and in trading to the Mediterranean.

The trade of the port bears only a small proportion to that carried on in the neighbouring City of Hamburg, which presents the constant appearance of commercial activity, while the towns of Altona are comparatively desolate. The marine of Altona consists of little else than a line of gun-boats to guard against smuggling; but the docks and canals of the free city are crowded with merchants from all parts of the world.

Altona was burnt by the Swedes in 1713, but has been rebuilt with greater regularity; many of the houses are spacious and elegant, a circumstance which, added to its greater quietness, is, probably, the reason why several merchants whose country-houses are in Hamburg have their residences in Altona.

The town contains a public school or college, founded by Christian VII, a library, and an orphan house. It has also six churches and two synagogues for German and Por- tuguese Jews, who are very numerous. The native inhab- bitants are principally Lutherans, with a few Jews and Catholics. The population in 1831 was 26,200. (Semple's Observations on a Journey from Hamburg to Berlin. Cannibach, Diction. Geograph.)
ALTRINGTON, or ALTRINGHAM, a small town in the parish of Bowdon and county of Chester, near the Duke of Westminster's seat at St. James, Manchester: it is about 8 miles south-west of Manchester, and nearly 80 north-west from London. The neighbourhood supplies Manchester with fruit and vegetables; and the salubrity of the air makes it a place of some resort for invalids. It is an earthy salt, and a soil, with a crops of wheat, in the year 2708. The chief manufactures are of cotton and worsted. There is a corporation, but the mayor has no jurisdiction. Besides a chapel for the members of the Established Church, there are two Methodist and one Unitarian meeting-house. The market is on Tuesday, and there are three fairs in the year.

ALUM, an earthy salt, which occurs in a native state only in small quantities, but it has been long artificially made, and extensively employed in various chemical manufactures. Its chief use is that of alumina, combined usually with sulphate of potash, but sometimes with sulphiure or sulphate of ammonia: when the first alkaline salt enters into its composition, the product is common or potash alum, the second forms soda alum, and the third ammonia alum. Alum appears to have been known from the earliest ages; it occurs in a native state in Carinthia, and also at Manchester, and other places in Italy. *Alumen*, with its mode of preparation, uses, &c., is described by Pliny (xxxv. 15); and the best is said to have been obtained from Egypt (see *Pliny*, v. 7. 54). It was also improved in the island of Corfu, and in other places. In the middle ages, alum was manufactured in Rocha, the Turkish name of the government which comprehends Edessa (Niebuhr, *Reisebeschreibung*, ii. p. 469), whence comes the name Alum alum. It was also made near Smyrna and Constantinople. About the middle of the fifteenth century alum was manufactured at La Tolfa, and other places in Italy, and Pope Pius II. prohibited the use of oriental alum. The alum-stone of La Tolfa contains all the ingredients of alum mixed with sulphiure of ammonia; it is broken into pieces, roasted, exposed to air and moisture, and the soluble parts being dissolved in water, crystals of alum are obtained as the solution cools.

In the reign of Elizabeth the alum-works of Whitby were established, and near Glasgow alum supply the market with a large quantity of alum. The alum is procured from alum-slate, the stratum of which is nearly thirty miles in length: this alum-slate has not been accurately analyzed, but it does not appear to contain any potash; nor is it known added, nor is this addition of much importance. In the mode of manufacturing, is to mix the broken alum-slate with fuel, and set it on fire; when the combustion is over, the residual matter, consisting of earth, oxide of iron, and sulphate of alumina, is lixiviated with water; a solution of the earthy salt being formed, the crystals of alum are precipitated from it, by added ammonia or sulphate of ammonia; it is broken into pieces, roasted, exposed to air and moisture, and the soluble parts being dissolved in water, crystals of alum are obtained as the solution cools.

Three-fourths of its weight. The solution reddens vegetable blue colours strongly; when exposed to dry air, alum effloresces slightly on the surface, but it remains long without undergoing any change internally. When moderately heated, alum dissolves in its water of crystallization; if more strongly heated, the water is evaporated, and when exposed to a very high temperature, sulphuric acid is expelled, and there remains a mixture of alums and sulphate of potash. Alum has been frequently analyzed, and the later results of chemists differ but little. According to Dr. Thomson it consists of

Four atoms of sulphuric acid. $40 \times 4 = 160$ or 32.85
Three atoms of alumina. $18 \times 3 = 54$, 11.08
One atom of potash. $= 48$, 9.85
Twenty-five atoms of water. $9 \times 25 = 225$, 46.20

Weight of its atom. $= 487$ 100°

The analysis of Bersonius agrees very closely with that of Dr. Thomson; the greatest difference is in the proportion of sulphuric acid, which the former states to be 34.23 per cent., being 1.38 greater than the quantity found by Dr. Thomson.

Soda alum is not met with in commerce. It may be prepared by adding sulphate of soda to a solution of sulphuric acid, which when for with alumina; by evaporation crystals are obtained, which, when pure, have the following properties: their taste is astringent, and their form the octahedron, like that of potash alum; they are more brittle and more soluble in water than the crystals of common alum; their specific gravity is about 1.6. When soda alum is heated nearly to redness, it loses its water; and when more strongly heated, sulphuric acid is expelled. Its other properties are similar to those of common alum. It appears to consist of

Three atoms of sulphuric acid. $= 58 \times 3 = 174$ or 36.94
One atom of sulphate of soda. $= 72$, 15.28
Twenty-five atoms of water. $9 \times 25 = 225$, 47.78

Weight of its atom. $= 471$ 100°

According to Dr. Thomson, soda alum occurs in a native state at St. Juan, near the city of Mendora in South America. It is found in small nodules, and differs from the crystallized salt in containing only twenty atoms of water:

Ammonia alum. $\text{Al}_2(\text{OH})_2(\text{SO}_4)\cdot n\text{H}_2\text{O}$.

Ammonia alum precipitated from a solution of ammonia to alumina in solution. By evaporation octahedral crystals are obtained, similar in appearance and in many properties to those of the preceding alums. It is more soluble in water than potash alum, but less so than lead, or iron, in action upon vegetable blue colours, it resembles them.

When moderately heated it swells, fuses, and loses its water of crystallization; and if the heat be much increased, the whole body of the sulphate of ammonia and sulphuric acid is expelled, the alum is decomposed, and the alumina is not prepared for use in England, but it is said to be manufactured in France. It is readily distinguished from the other alums, by the evolution of ammonia, which takes place on the addition of potash or soda in sufficient quantity.

According to Dr. Thomson, ammonia alum is composed of

Three atoms of sulphate of alumina. $= 58 \times 3 = 174$ or 38.15
One atom of sulphate of ammonia. $= 57$, 12.50
Twenty-five atoms of water. $9 \times 25 = 225$, 49.35

Weight of its atom. $= 456$ 100°

We have already mentioned that alum is decomposed by heat; and the same effect is produced by numerous chemical re-agents: thus the alkalis, potash, soda, and ammonia, when added to it in solution, combine with the sulphuric acid and precipitate alums. It is decomposed by the alkaline earths, lime, barytes, and stroncia; and acetate of lead, muriate of lime, &c., &c., decompose it by double decomposition.
Alum sometimes contains sulphate of iron, which is extremely injurious in certain applications of the substance. It is readily detected by the addition of a solution of ferrocyanate of potash, which precipitates Prussian blue when oxide of iron is present.

Alum is employed for a vast number of purposes. It is used in lake colors, dyeing, printing, and dressing, and by candle-makers to harden the tallow and render it white. It is an ingredient in making pyrophorics, as will be hereafter described; and in medicine it is employed as an antiperiodic.

At Hildesley, near Alkelfield, and Campsie near Glasgow, alum is manufactured from what appears to be slate clay, impregnated with bisulphuret of iron: it is obtained from old coal-pits, and having been long exposed to air and moisture, sulphate of iron and sulphate of alumina are formed, and crystallize so as completely to destroy the texture of the slate.

This double sulphate of iron and alumina occurs in the form of soft, delicate fibres, easily separable from each other; it is nearly colourless, of a silky lustre, and resembles asbestos in appearance. It is readily soluble in water, the solution yields crystals of sulphate of iron, and when potash salts are added to the remaining solution of sulphate of alumina, crystals of alum are immediately formed, and this is the process of making alum already described. According to the analysis of Phillips, this double sulphate or ferro-sulphate of alumina consists of:

<table>
<thead>
<tr>
<th>Component</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulphuric acid</td>
<td>30.9</td>
</tr>
<tr>
<td>Potassium of iron</td>
<td>20.7</td>
</tr>
<tr>
<td>Leaching for water</td>
<td>43.4</td>
</tr>
</tbody>
</table>

When this double salt has been dissolved, the remaining slate is exposed to heaps to air and moisture, and by their action upon the pyrites, further quantities of the salt are obtained.

ALUM STONE, a mineral which occurs in a secondary rock on the Lake Tofala in Italy, and is used in the preparation of alum: it is found in small masses and veins, and according to Corder it exists in most burning volcanoes. It is said to be met with also in Tuscany and Hungary.

This mineral is either massive or crystallized; the former is usually greyish-white, and sometimes red. It is translucent, easily frangible, and sometimes has a conchoidal, but more commonly a fibrous fracture. When heated by the blowpipe it decomposes, and by continuing the heat emits a sulphuret of iron smell.

The crystals are generally situated in the cavities of the massive substance; they are small, shining, sometimes externally brownish; their form is an oblong rhombial, variously modified.

Both varieties have been analyzed, the massive by Vauquelin, and the crystallized by Corder, and the results are:

<table>
<thead>
<tr>
<th>Component</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulphuric acid</td>
<td>33.0</td>
</tr>
<tr>
<td>Alumina</td>
<td>36.1</td>
</tr>
<tr>
<td>Potassium of iron</td>
<td>20.7</td>
</tr>
<tr>
<td>Water</td>
<td>0.2</td>
</tr>
</tbody>
</table>

ALUMINA. The earthy oxide of aluminium, sometimes called argil or the argilaceous earth; it constitutes the largest portion of all clays, and their plastic property is owing to it. The name of alumina is derived from alumen, the Latin for alum, the salt from which it is generally obtained in a pure state, by means which will presently be mentioned.

Alumina, when diffused throughout the earth, the admixtures of sand or peat, the ruby and sapphire, are alumina nearly pure and crystallized; these substances have not, however, any of the more obvious properties of common clay, for instead of being amorphous, soft, and readily decomposable, they are crystallized, are among the hardest substances in nature, and will not mix with water. The diaspore is a crystallized mineral, which consists almost entirely of alumina and water; and in North America another hydrate of alumina has been found, called isorhodon.

The following is the process recommended by Berzelius (Treaté de Chém., ii. 369) for procuring pure alum: esolve and crystallize alum repeatedly to deprive it of the peroxide of iron which it usually contains; when thus rendered pure, a portion of the alum dissolved in water is added to a solution of potash in excess, gives a precipitate at first, which is afterwards completely redissolved. To boil solution of the purified alum, add one of carbonates of potash, as long as precipitation takes place; then a slight excess of alum is boiled with a brisk flame, to decompose the subsulphate of alumina formed. Wash this carefully on a filter, and redissolve it in nitric acid; precipitate the clear solution with ammonia or the carbonate, and wash the precipitate, which, when dried with a warm current of dry air, is hydrate of alumina, employed as a dressing for wounds.

Wash the thoroughly dried alum with hot water, dissolve the hydrate in water, and evaporate the solution with a current of warm air; the deposit that forms is alumina.

According to Gay Lussac, pure alumina may be obtained by heating ammonia to redness in a platinum crucible; thus prepared it is insoluble in acids.

The properties of alumina are, that it is white, powdery, and light; it has neither taste nor smell, and it adheres to the tongue. Berzelius considers alumina to be composed of aluminium oxide, 13.716 x 2 = 27.432, with 3 atoms of oxygen, 8.613 x 3 = 24.639; its atomic weight is consequently 51.474. Dr. Thomson states its composition to be 4 atoms of oxygen + 14, with one atom of oxygen as giving 1 as its atomic weight.

Alumina is insoluble in water, but considerable affinity exists between them, as is shown by the high temperature required to separate the hydrous oxide. Berzelius (treaté de Phys., i. 101) found that 100 parts of water, at 15.5° of water from a dry atmosphere, and 33 from a humid one, which, on removal to a dry place, were reduced 15.3.

Alumina shrinks considerably by heat; and Mr. Welldon, wood, coal, and coke, and when exposed to the degree of contraction which would denote that of the heat producing it, invented a principle in this, but it is now ascertained that its indications are fallacious. When alumina is exposed to the heat obtained by a jet of oxygen directed on a spirit lamp, it decomposes into clear colourless glass.

Alumina produces no change in vegetable bodies or yolks, and consequently shows neither acid nor alkaline properties. When in a finely divided state, and especially when finely precipitated and moist, alumina is easily set on fire by alcohol or spirits; and when it has been strongly heated, it is rendered insoluble in that liquid, it dissolves easily in the solutions of potash and soda, and even those of barytes and strontia, but alumina takes it up very slowly: the results are

<table>
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<th>Component</th>
<th>Amount</th>
</tr>
</thead>
</table>
| Nitric and muriatic acids form salts with alumina, which dissolve in water in large quantities, but afford no crystals by evaporation: these acids are applied to no use. Acetic acid unites with alumina, and the resulting acetate is largely employed in calico printing as a mordant: it is generally prepared from alum by double decomposition, either with acetate of lead or of lime. Sulphate of alumina is important, except when considered as entering into the composition of alum.

It is principally from what has been stated with respect to alumina, that it is an exceedingly important substance, whether regarded as a constituent of soils or with respect to its extensive employment in the operations of the dyeing and printing art.
calsio-printer, or colour-maker. It is a necessary ingredient in all kinds of porcelain, chinaware, bricks, and tiles.

**ALUMINUM.** The base of alumina, and generally regarded as a metal, Davy reduced alumina by voltaic electricity, so that it makes a strong soldering paste. Alumina heated to redness. Further attempts were made by Cerated and Berzelius, but it was first obtained in a perfectly separate state by Wöhler in 1827, who procured it by acting with heat upon chloride of aluminum with potassium; the chlorine combining with the potassium, the chloride so formed was dissolved by water, and the aluminum was left. Aluminum thus obtained is a grey powder, resembling platinum in appearance; when burned it has the lustre of tin; it does not fuse at the temperature of melting cast-iron, and if a very small quantity be placed in the electroscope, it will attract iron with a finely divided state. When heated to redness in the air, it burns with great vividness, and is converted by the acquisition of oxygen into alumina: in pure oxygen it burns with so great splendor, that the eye can scarcely support it; but in order to produce this effect it must be previously heated to redness; the heat evolved is sufficiently great to fuse the alumina partially, and it is then as hard as corundum.

Aluminum does not decompose water until it is heated to redness, and then decomposition is slowly effected. Neither sulphuric, muriatic, nor nitric acid dissolve aluminum when cold, but when heated they act upon it quickly. It dissolves readily even in a weak solution of potash, with the evolution of hydrogen gas. Solution of ammonia also produces a considerable amount of alcohol, in his double oxide: aluminum forms alumina; combined with chlorine, the result is a deliquescent chlorides. Sulphur of aluminum may be procured by dropping sulphur upon heated aluminum; it is a black powder, which decomposes by exposure to the air into aluminium, water, deposits alumina and evolves sulphuric hydrogen.

**ALURED, ALRED, or ALFRED,** of Beverley, an English historian, who lived in the twelfth century. He is the author of an Epitome of British History, from the time of the creation of the world to the year fifty years after the reign of Henry I., which Thomas Hearne published at Oxford in 1716, under the title of The Annals of Alured of Beverley. It is written in a Latin style remarkable for its correctness, considering the age in which the author lived; and more attention appears to be paid in it to the dates of the events recorded than in most of our antient histories. It exhibits, however, in many places so strong a resemblance to the similar works which bear the name of Geoffrey of Monmouth, that Leland, and others after him, have charged him with plagiarism. The evidence is entirely against his work. On the other hand, it would rather seem that Alured's history was really published before that of Geoffrey, so that where they agree in expression, the plagiarism or copying ought probably to be charged upon the latter, Geoffrey adopting the material, and making alterations in it by being enclosed within four walls. So far were these measures of cruelty from having produced any reformation in the people, that the commission of outrages was continually on the increase; whereas, since the interference of the English authorities, the native people have been protected, and the consequent adoption of conciliatory measures, outrages are now of rare occurrence, which were before so frequent that no one could venture to travel from one part of the country to another without a military escort. (Rennell's *Memoir of a Map of Hindostan.*)

**ALVAR, a principality in the centre of Upper Hindostan, twenty-five miles south-west of Delhi, north-west of Agra, and between 27° and 28° of north latitude. Alvar is a well-wooded, hilly country, abounding with jungle and with natural fertility. Its climate and soil are such as to engage their services, in order the more effectually to ravage the country of their enemies. The principality is now under the dominion of the Rajah of Macherry, whose sway extends over about 3000 square miles. The chief town of Alvar is Rangapur, though Macherry gives the title to the chief, Alvar is the capital.**

In 1803, during the war with Scindiah and the Rajah of Berar, Lord Lake concluded a treaty with the Macherry who then undertook to carry on the war in behalf of the British government. Two years after that time, he received a considerable accession of territory at the expense of the Rajah of Bhurtpoor, who, contrary to his engagements, had assisted Holkar in his hostility to the Company's government.

If the inhabitants of this principality were not originally invited to their lawless courses by the oppression of the neighbouring chiefs, there is little doubt that they must have been confirmed in their bad habits by the harsh and cruel measures adopted towards them. Among other restrictions, they were prohibited from cultivating the land in any situation where adequate returns could be expected; their implements of husbandry in such cases were seized and destroyed, and themselves subjected to the most brutal punishments. The vagrants were similarly treated by being enclosed within four walls. So far were these measures of cruelty from having produced any reformation in the people, that the commission of outrages was continually on the increase; whereas, since the interference of the English authorities, the native people have been protected, and the consequent adoption of conciliatory measures, outrages are now of rare occurrence, which were before so frequent that no one could venture to travel from one part of the country to another without a military escort. (Rennell's *Memoir of a Map of Hindostan.*)

**ALVA, DUTCH.**

**ALY, OF.**

**ALVAR, D.**

**ALVARDE, D.**

**Alvarez, a Portuguese traveller, was born in the latter part of the fifteenth century, at the town of Coimbra. King Emanuel made him his chaplain. About the year 1512, David, the Emperor of Abyssinia, sent a certain Armenian, by name Mathio, to India, with a commission to be the guide and interpreter of his party, who was kindly received by Affonso de Albuquerque, who was then governor of the settlements in India. He was sent to Portugal, and at first considered as an impostor, and treated as such by those who conducted him. On his arrival at Lisbon, King Emanuel rendered him ample justice; and in 1515, he sent Edward Galvao an extraordinary embassy to the Emperor David, and Alvarez was appointed his secretary. After a long voyage, they arrived in Transylvania, in the eastern Carpathian mountains, about 46° 40' N. lat. Its course is at first due south for about 60 miles, when it makes a turn and runs nearly due north for about 20 miles. Its general course is then S.W., S.S.W., and S., till it reaches the Carpathian mountains, through which it runs 43° 42' lat., 24° 50' E. long. The whole length of its course is not less than 250 miles, and may be considerably more. The navigation of the river is said to be dangerous. It brings down particles of gold from the auriferous sands in the neighbourhood of the mountains.
at the Isle of Camaran, in the Red Sea, where Galvão died not long after his arrival. While Lope Suarez was governor of India, this mission was delayed: but Diego Lopez de Segueria, who succeeded him in the government, perfected what his predecessor had left incomplete. He appointed Rodrigo de Lima ambassador, and confirmed Alvarez in the office of secretary. He then by all the means he could send Alvarez with you, and not you with Alvarez; do nothing without first asking his advice, and follow it exactly.

The expedition landed at Aricekky on the Abyssinian coast, on the 7th of April, 1530; here they met with a Moor and a Christian. The latter informed them that the country was inhabited by Christians, but that they were subject to the deprivations of the Mohammedans. The Christian governor of the country came afterwards with a fine retinue to meet them. The monks of the monastery of Beiram also visited the travellers, and received them kindly in their house. Proceeding on their journey with much fatigue and privation, occasioned partly by the loss of their guide and interpreter, Matheo, who died shortly after entering the Abyssinian territory, they arrived at the emperor's residence in Amhara, after passing through the countries of Tigre and Angot. After some years' residence in that city and country, Alvarez returned to Lisbon on 24th July, 1527. The king rewarded him with a handsome benefice, and ordered him to print out of his travels published in Amsterdam, that work at Lisbon, in one volume folio, with the following title: 'Descripsum de Terras do Pronti Joam, segundo vio e escrev o Padre Francisco Alvarez, capellan do Rey nosso senhor, agora novamente, impresso por mandado do dito senhor, custa Luis Rodriguez, impresso em Lisboa, 1240.' A copy of this volume is in the British Museum.

Alvarez says in his dedication to the king, that he went to Paris purposely to purchase the type for the printing of his narrative.

In his relation, the traveller speaks more of the country than of himself. The simplicity and frankness with which it is written are admirable. It bears the stamp of truth in every page. It is unfortunate that the writer gives no exact names while Lope Suarez was governor of India, this mission was delayed: but Diego Lopez de Segueria, who succeeded him in the government, perfected what his predecessor had left incomplete as he traversed and visited the now almost unknown countries of Angot, Amhara, and Efat. Peter Covilham, [see Abyssinia, p. 58] who was in Abyssinia at the time of Alvarez arrival, informed him that the Nile (Bahr el Azrek) rises in the kingdom of Gomau, and has been sent there on a mission by the Queen Elena. The narrative of Alvarez is generally clear, and he is apparently an honest and trustworthy writer. A French translation appeared of it in 1558, at Antwerp, under the title of De

Abyssinia, translated into French by a Benedictine, and another in Spanish, by Fray Tomas de Padilla, (Antwerp, 1557,) and Ramusio published it in Italian, in his collection of Travels. We have not seen the latter of these translations; but of the two former, the Spanish is by far preferable. He is obliged to make many corrections, which are suggestive that a book of such a nature should not have been translated into English. A copy of the original, as well as of the Spanish and French translations, are in the library of the British Museum.

He died in 1540. He was not a man of very superior talents, but he was undoubtedly an accurate and, above all, an honest traveller. (See Nicolao Antonio, Mariana, book xxx, ch. 23-25.)

ALVERSTOKE. [See Gosport.]

As a king of Lydia, the father of Croesus; he died about B.C. 562, after a reign of fifty-seven years. Near the Lake Gygara, which is a few miles north of Sardis (now Sart) in Asia Minor, we still see the immense mound of earth which was raised to his memory. Herodotus, who gives the height of it (i.e. 593) says, that the base was 3800 Greek feet, and the width of the base? 2000 feet. The height is not given. The lower part of it was a substruction of stone, which is now covered by the earth that has fallen down; but the mound still retains its conical form, and rises up like a natural hill. Its dimensions are much greater than those of any similar monuments in Great Britain. The circuit of Sillery Hill, which forms so striking an object on the Bath road, is inconsiderable when compared with the mound of Alavates. Other mounds of various sizes and ages are doubtless raised in memory of the ancient kings of Lydia. (See Chandler's 'Travels in Asia Minor.')

In the reign of Alyattes a great eclipse took place where the Lydian and Median armies were fighting (Herod., I., 81.), and the place where the eclipse has been seen is not mentioned by Herodotus; but we may fairly conjecture it was in the upper latitudes of Asia Minor, and between the Halys and the higher waters of the Euphrates. This eclipse was noted by Thales of Miletus, but we are not informed from the work of Herodotus that he communicated the day and hour of the eclipse to the historian can be made to signify, that he preserved the year. But Herodotus knew so little of physical science that we must not interpret his words too strictly. Seider (De Sider.), says the eclipse took place, November 1, 538 B.C., February 3, 626. Mayer, May, 603. Costard, Phil. Trans. 1753, showed, by allowing for the moon's acceleration, that Mayer's eclipse was not seen at all in Asia Minor.

Baily has calculated (Phil. Transac. 1811) all the eclipses from B.C. 650 to 580, and has found only one of these total in or near any part of Asia Minor, viz. 30 Sept. 576. The centre of the moon's shadow passed in the forest on a right line over the north-eastern part of Asia Minor, through Armenia into Persia. It passed over the mouth of the river Halys. If the eclipse mentioned by Dodwell have taken place during the voyage of Agathocles, 5 B.C. 190, rightly given, a correction becomes necessary for the mean distance from her node, which being allowed for, 1/3 eclipse between B.C. 650 and 580 was central or total at one or more places on the earth; that is, on the day before the date of the eclipse of Agathocles or of Thales is false.

ALYTH, a town in Perthshire, in an extensive parish, which stretches into Forfarshire, includes the mountains of King's Seat (1398 feet high) and Mount Blair, and the river Alty (Alvis) rises near the town. It is a quiet and pleasant place, of Linen manufacture, and in the year the church is an ancient Gothic building, from its persons to members to parliament. It is 12 miles W. by S. from Forfar. The population of the parish in 1831 was 2888. There are the vestiges of a fortification on a hill near the town. A MADEUS I. was the son of Adelaide, Marchioness of Susa, and of Jago (Giovannini) of Susa, lord of Serre, called the 'White-handed;' some say he was the son of Oddo, Humbert's son. After his father's death, he governed conjointly with his mother the states of Savoy and Maurienne. This made him master of the greatest mass of country in the Alps, but he was one for which circumstance much of the subsequent importance of his family was derived. He married a daughter of Gerald, Count of Burgundy. Amadeus, as a feudatory of the empire, was attending the Emperor Henry III. at Vienna, but having come to Savoy, was recalled by the king to be present at the council of the empire. He died soon after, in 1078, and was buried in the cathedral of St. Jean de Maurienne.

A MADEUS II. styled by some III., as they suppose another Amadeus, either before or after the death of I. of whom, however, no certain account exists. He was deposed by his fidelity. Henry gave him the title of Count of Savo, and vicar perpetual of the empire. Amadeus also took the title of Marquis of Turin; and married the daughter of the Count or Dauphin, as he was called, of Vienna, the daughter of Louis VII., King of France, who was Amadeus' cousin by his mother's side, was settled by the mediation of St. Bernard, the famous Abbot of Clair
vaux, who persuaded Amadeus to take the cross, and accompanied the king to the Holy Land, which expedition, however, turned out unsuccessful. Amadeus distinguished himself at the siege of Damascus, and relieved Acre, which was besieged by the Turks. On his return from Syria, he landed in the island of Cyprus, where he died at Nicosa, of a fever, in 1148. The celebrated Abbey of Hautecombe, where are the sepulchres of the House of Savoy, was founded by him in 1125.

AMADEUS III. succeeded, in 1233, his father Thomas, as Count of Savoy, and his brother inherited Piedmont. Amadeus obliged the Count of Geneva to acknowledge himself his vassal: he also conquered the Chablais and the Lower Valsia; and sent troops over the Little St. Bernard into Burgundy. An insurrection of the Genevans, against the Emperor Frederick II., on his passage through Turin, was sumptuously entertained by Amadeus, to whose titles he added on this occasion those of Duke of Chablais and of Aosta. Amadeus died in 1246.

AMADEUS IV., called ' the Great,' succeeded his uncle Philip in 1285. By his marriage with Sybilla, Countess of Bugey and Bresse, these districts of ancient Burgundy were united to his states. He interfered in the disputes between the Counts of Geneva and the Bishop of Geneva, and participated against the Duke of Savoy, the latter of whom died in 1281. The town and district of Ivrea gave itself up to him by common consent of the citizens. He inherited the barony of Faucigny by the will of Beatrix, the last of her family, but he had to defend his claims by arms against the Dauphin of Viennois, and the latter of whom died in 1308. Amadeus afterwards embarked for the East, where he assisted in the defence of Rhodes against the Turks in 1315. It was on this occasion that he assumed the white cross on his arms and banner, which has ever since characterized the sign of Savoy. He died in 1293 at Avignon, where he had gone for the purpose of urging Pope John XXII. to proclaim a new crusade.

AMADEUS V. succeeded his brother Edward in 1299, continued the company Louis had founded in Savoy and Viennois, and died in 1349. He has been called Aymon by the same historians who have anticipated one number in the list of the former Amadeuses. They all agree in calling the following, Amadeus VI. The names of Aymon and Amadeus VI. are frequently confounded in the countries of ancient Burgundy.

AMADEUS VI., son and successor of the preceding, was called ' the Green Count,' from the colour of the dress in which he appeared, when only fourteen years of age, for the consecration of the church given by the Bishop of Turin. He won the prize. In 1349 Humbert, last Dauphin of Viennois, disgusted with the world in consequence of the death of an only son, gave up his title and principality to Charles, grandson of Philip of Valois, and retired into a Dominican convent.

From that epoch the eldest son of the King of France has been called Dauphin, and the province Dauphiny. Amadeus VI. was not pleased at this cession, which gave him a much more formidable neighbour than he had before; and in 1354 he defeated the French in the Fragnay. A treaty was concluded at Paris the following year, by which the Count of Savoy gave up to France the districts he possessed in Dauphiny beyond the rivers Rhone and Guier; and he, on his part, was acknowledged heir apparent of the foreign kingdom of the country of Gex, as well as successor lord over the Counties of Genoa, all which titles had been till then subjects of contention between the Count of Savoy and the Dauphins of Viennois. Amadeus was then an elderly man, a great spirit, who governed the courts of Burgundy, Barnabas and Galezio Visconti, who had attacked the Marquis of Montferrat. He marched to the assistance of the latter, and drove away the forces of the Visconti. He also obliged the Marquis of Saluzzo to pay him homage. He married his states to the sister of one of the Alp. Amadeus's alliance was chiefly by the courtly sovereigns of his time. John Palaeologus, Emperor of Constantinople, and Amadeus's cousin by his mother's side, being threatened by the Bulgarians and the Turks, who had taken Adrianople, implored the assistance of the western princes. The pope proclaimed a crusade, but the Count of Savoy alone answered the call. At his own expense he assembled a number of galleys in the port of Venice, where he embarked with a chosen band of his own knights, and a considerable number of archers and other infantry, all dressed in green. He arrived at Coron in the Mores, in July, 1366, and from thence he proceeded to Gallipoli, where Sultan Amurat had placed a garrison. The town was taken, and the white cross of Savoy hoisted on its ramparts. From Gallipoli he proceeded to Constantinople, where he found the people in great confusion, the Emperor Paleologus being a prisoner in the hands of the Bulgarians. Amadeus sailed again for the Black Sea, landed on the Bulgarian coast, took Mesembria by storm, and attacked Varna. The Turks were defeated, and as a first condition delivered Paleologus, who returned to Constantinople with Amadeus. The latter, however, soon after quarreled with the Greek emperor, whom he was endeavouring, but in vain, to restore to the bosom of the Roman or Western Church. An important subject of his reign was the cession of those jurisdictions to the ground before the emperor; but when the sixth banner came forth, which was that of the white cross, the Count of Savoy entertained the emperor not to let it be lowered, saying that it had never been lowered yet to the great Turk, and he would save it, so please God.' (Paradiso, Chronicque de Savoie.) Amadeus had now risen to great power and influence, and was looked upon as the arbiter of Italy. The Venetians and the Genoese had long questioned the title of Tenedos, in the Aegean Sea; but at last agreed to give it in full possession to the Count of Savoy. Amadeus in his old age was still thinking of another expedition against the Turks, but the Pope Clement VII. persuaded him first to settle the quarreled, and in 1388 he was reconciled to the court to which he was called by the adoption of Queen Joanna I. Amadeus went in 1382, and shared in the first successes of Louis, who conquered the Abruzzi and Apulia. A contagious disease, however, spread through the army, and the Count of Savoy died of it at Vasto, the same year. He was buried in the church of Santa Sofia, at Apulia, in 1383. He was the founder of the Order of the Annunciation.

AMADEUS VII., called ' the Red Count,' succeeded his father, Amadeus VI. He made the important acquisition of the dukedom of Burgundy, which was given to him by the citizens, in 1388, and the act was solemnly registered as a public document. He was killed by a fall from his horse while hunting in the forest of Lornes, near Thonon, in 1393.

AMADEUS VIII., son and successor of the preceding, was created first Duke of Savoy, in 1416, by the Emperor Sigismund, who declared the court of the duty to be independent of the imperial chamber. Amadeus waged war against Philip Maria Visconti, Duke of Milan, and took Vercelli, which he united to his dominions. He also annexed to them the county of Genevois, having purchased the rights of the various claimants after the extinction of the male line. Thus the whole of Savoy was finally united under one sovereign. He was also Prince of Piedmont, Baron of Vaud, Lord of Nizza, Mondovi, and Venalza, Duke of Aosta, &c. Amadeus gave his subjects a code of laws called Statuta Sabaudiae. Under him Savoy enjoyed profound peace, whilst the countries around were a prey to war and perpetual war. His son having lost his wife, Maria Beatriz of Burgundy, he retired, in 1434, to the hermitage of Ripaille, a delightful spot on the Lake of Geneva, with six of his nobles, whom he created Knights of St. Maurice. He entrusted the administration of Savoy to his marshal, and he went with his son to Ripaille, where he was consulted in matters of importance by his son as well as other sovereigns; and here he meditated the peace of Arras between France and England. The council assembled at Basie, having deposed Eugenius IV. in 1438, called Amadeus to the Papal council at Basie. Amadeus at first refused, but being persuaded by the Cardinal of Arles, he assumed the pontifical dignity with the name of Felix V. At the same time he definitively abdicated his temporal sovereignty to his son Louis. In June, 1440, the new pope proceeded to Basie, where he was solemnly crowned.
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hardness till it becomes of a darkish brown, and is as large as an apple. It afterwards takes a horizontal direction, forms a border and becomes covered with numerous closely-acked tubes on its under surface, which are exceedingly minute. When the plant is full grown the tubes are of a reddish brown colour, and of a hard woody texture; and the upper surface is of various colours disposed in grey, brown, or clouded concentric elevated circles. The plant is perennial, and increases yearly in size.

AMAGER, or AMÁK, a small island in the Baltic, lying opposite to Copenhagen, with which it is connected by two bridges. It is about nine miles long, and on an average three broad; quite level, and without wood or good water. The soil is fertile, and the island supplies Copenhagen with garden vegetables, milk, butter, and cheese. A Dutch colony from the Water-land in North Holland was invited here in 1516 by Christian II. Of the two parishes, that on the east side of the island, called Hollanderbye, is the proper settlement of the Dutch colony. The language of the people is a mixture of Dutch, German, and Danish. The inhabitants, in summer, send their cattle to pasture on the adjacent low island of Saltholm.

A part of Copenhagen, called Christianshafen, is on the island of Amager. (See Copenhagen.)

AMALARIC, the last Visigoth king of Spain, was the son of Alaric II. and grandson of Theodoric II. At the death of his father, a.d. 566, he was only five years of age; and Gensaleic, a bastard son of Alaric, was elected king of the Goths in Spain. Theodoric, who was then in Italy, sent his general Theudis with a powerful army to protect the rights of his grandson. Gensaleic was defeated, and Theudis was entrusted with the guardianship of the child and government of Spain. When Alaric became of age he was acknowledged king of the Goths both in Spain and in Gothic Gaul. In order to secure his French possessions he solicited and obtained the hand of Clotilda, daughter of Clovis, king of the Franks. But this marriage proved to be an unfortunate one. Amalaric was a violent Amalric, and Clotilda a zealous Catholic. At first each attempted to convert the other, but all their mutual endeavours having failed, Amalaric tried to obtain his object by violent means. He so ill-treated his unfortunate queen, that at last she was compelled to apply to her brothers for protection against her cruel husband. The French historians say, that she was so barbarously treated, that the violence offered to her by her husband frequently occasioned her blood to flow, and that she sent her brothers a handkerchief steeped in it as a testimony of her sufferings. But this statement is not confirmed by the contemporary writers. Her brother Childibert, or Childibert, king of Paris, mustered a large army and marched against his brother-in-law. The two armies met, according to some authors, in Gothic Gaul, and according to others in Catalonia. Both French and Spaniards fought with equal valour and obstinacy. At last the Spaniards were defeated, and Amalaric took refuge in a church, where he was killed in the year 531. The conqueror, after having plundered the Arian churches, returned to France with his sister.

Amalaric was the last of the Visigoth kings, and the first who established the court at Seville. On his death, Theudis, an Ostrogoth or eastern Goth, was elected king. (See Ma-
nana, book v. ch. 7. Procopius, De Bello Gothorum, lib. i.)

AMALEKITES, a nation who dwelt south-west of Palestine, between Edom and Egypt (Gen. xiv. 7; Exod. xvii. 8-16; i Sam. xv. 7). According to Josephus, Aschunta, 32, those who dwelt in Goboliths and Peters were called Amalekites, and were the most warlike among the surrounding nations. The Goboliths or Josephus is the Ge-

bala or Gebula of Stephanus Byzantinus, and the Gebalensc of Eusebius. Its inhabitants are called Gobalites and Gobaleni. According to Burekhard, the country between the Dead Sea and Wady Mouse is still called Jebil or Amalek. Goboliths means the high-land, especially the mountainous country near Petra. The following passage (Jos. Ant. II. 1, § 2.) will illustrate our statement. "Alphaz had five illegitimate sons, Theman, Omer, Ophus, Jotham, and Oza,

as, for Amalek was illegitimate, being born of a concubine whose name was Thamna. These inhabited that part of Idumeas which is called Goboliths, and that which, after Amalek, was called Amalekites. Josephus callsthe country Amalekites, and describes it as a part of Idumeas. (Ant. ii. 1.) Josephus also calls the country of Medan Amalekites, and says, that it was situated between Pelusium, on the borders of Egypt, and the Red Sea. (Ant. vi. 7: § 3, and
ch. 8.) It appears also that they occupied several places in Palestine among the Canaanites, just as some Scythian Wendish settlements are found among the Saxons in Germany. In the land of Ephraim we find a mountain of the Amalekites where Abdon, the son of Hillel, was buried in Pirathon. There dwelt also many Kenites among the Amalekites, whom Josephus names Σκαταξείς. (1 Sam. xv. 6; Ant. vi. 8; Judges xii. 15; compare v. 14.)

We read in Gen. xiv. 7, that Amraphel, king of Shinar, Arioch, king of Ellasar, Chedorlaomer, king of Elam, and Tidal, king of nations, came to En-mishpat (Fountain of Judgment), which is Kadesh, and smote all the country of the Amalekites. Kadesh is placed, in Asheton's Historical Map of Palestine, 177; and three minutes N.W. of En-mishpat; but Moses informs us, that Enamphoth is Kadesh. According to Rabbi Sh'lomo Ben Jarchi, 'the country of the Amalekites' means, in Gen. xiv. 7, the country which was afterwards inhabited by the Amalekites; as we might say that Caesar went into France, because he afterwards occupied by the Franks, or as Jacob set his face to Gilead, although this name of Gilead is of a later date. This opinion has been generally adopted: for Amalek, one of the dukes, that came of Ephraim, the son of Esau, in the land of Edom, was the Amalekite. (Gen. xxxvi. 1, 12, 16.) But the name of Amalek was, perhaps, given to two different nations. The Arabsians mention Ḡimil, Amalilik, or Amaleka among the aborigines of Arabia, the Sojets, and the most of the inhabitants of that country. According to Jostan and Adman, and become Mostarbb or Miscarpas, that is, Arabsians mixed with foreigners; and they give these names also to the Canaanites and Philistines, which nations were probably related to each other. According to Arabian writers, the Amalekites of North Africa, were descended from the Amalekites, who were expelled by Joshua. This assertion has probably some reference to the Carthaginians being a Phœnician colony. (D'Herbelot, Bibl. Or., art. Amalik; Avbuelfa in Pococke's Spec. Hist. Arabum, ed. Whiston, p. 16.)

Some Arabs make Amalek a descendant of Ham, and father of Aab; but Abulfeda (Historia Antestilcumica, ed. Pletcher, p. 16) makes it descend from Shen. Ebn Aralshah (in Vita Timuri, ed. Maneger, ii. 780) calls Amalek the descendant of Gibril, one of the posterity of Ham. (Comp. Relandi Palestina, p. 78-82; J. D. M. Michaelis, Spicilegium Geographicæ Hæb. Externæ, t. i. p. 170-177; Alb. Schultens's Monument. Ant. Hist. Arabum; Gesnioni in Ersch und Gruber's Lexic.) The first who opposed the Israelites on their march from Egypt. (Exod. xvii. 8-13; Jos. Ant. iii. 2.) They suffered great loss, but were afterwards assisted by the Canaanites, and obtained a great victory. (Num. xiv. 39-45.) During the time of the Judges, the Israelites were often troubled by the Amalekites and Midianites. (Judges iii. 12; vi. 3; Joseph. v. 7.) Saul gathered 200,000 footmen and 10,000 men of Judah, and came to the city of Amalek, (the name of which is unknown,) and laid waste the valley, and said to the Kenites, 'Go, depart, get you down from among the Amalekites, lest I destroy you with them; for ye showed kindness to all the children of Israel, when they came up out of Egypt;' or, as Josephus says, he spared them because they were related to Reuel, the father-in-law of Moses. So the Kenites departed from the Amalekites; and Saul smote the Amalekites from Havilah to Shur, that is over against Egypt. Saul took their king Agag alive, who was cut to pieces by the prophet Samuel. Saul was rejected from being king, unless he had spared Agag and the best of the Amalekites. (1 Sam. xv.; Jos. Ant. vi. 8.) David warred against them (1 Sam. xxvii. 8.) and therefore the Amalekites plundered the town of Ziklag and set it on fire, but David overtook them in the wilderness, and recovered all that they had carried away. (1 Sam. xxx. 18; Ant. vi. 15.)

At a latter period, David dedicated silver and gold unto the Lord, which he had taken from Amalek and other subdued nations. (2 Sam. xviii. 12.) The Amalekites were finally extirpated, as is evident from the fact, that in the time of the reign of Hezekiah, (1 Chron. iv. 43.) Thus, according to the direction of Moses, the remembrance of Amalek was blotted out from under heaven, because they slew the hindmost of the Israelites who fainted in the wilderness. (Deut. xv. 17, 19.) But it seems that some of them escaped to neighboring countries, where they continued to hate the Israelites, for we find that Haman, the Agagite, being, probably, a descendant of Agag, king of the Amalekites, endeavoured to destroy Israel in the time of Ahaseurus. (Esther x. 3.)

The name Amalek has been derived from Amalek, or Amaleki, and explained to be a people which licks up or taketh away everything, like Amalek, the locust; or, from Amalek, a people which beats down; or, more probably, from Amalek, a people which reigns, a royal nation, a nation of the king, a set of royalists. The name of the Amalekites may be descriptive of their prowess; and Balaam's saying, (Num. xxvi. 20.) 'Amalek was the first of the nations,' seems to express their haughtiness rather than antiquity, the most eminent of the nations.

AMALFI, a town in the kingdom of Naples, built on the steep declivity of a mountain overlooking the Gulf of Salerno, 40° 37' N. lat., 14° 39' E. long. In the early part of the middle ages, Amalfi was a republic for maritime enter- tory, but renowned for its trade with Egypt and the East. It took part in the crusades, and its citizens founded in Palestine the hospital of St. John of Jerusalem, from which the celebrated military order took its name. Amalfi was taken about the 13th year of the reign of King Louis IV. of France, by Guiscard, the Norman Conqueror, at the same time as Salerno, and was erected into a duchy. William of Apulia, the poet historian, describes Amalfi at that time as the great exchange for eastern goods, frequented by Arabs, Indians, Africans, and Sicilians. In the time of the Normans and Pope Innocent II., who was supported by the Emperor Lotharius, Amalfi was taken, in 1137, by the Pisan fleet, who were auxiliaries of the emperor. It was on this occasion that a solitary copy of the Pandects of Justinian, a work long lost to the world, is said to have been found by the Pisan conquerors amidst other plunder within the walls of Amalfi, and from that epoch the study of the Roman law was revived in Europe. Flavio Gioia, a citizen of Amalfi, is said to have been the first to publish its chemical history, at the beginning of the fourteenth century; he probably derived the first idea of it from some eastern trader, it having been used in a rude form in the Indian seas long before. The present town of Amalfi, though much fallen from its former splendour, is an ancient city of about 10,000 inhabitants, and its inhabitants are reckoned good mariners. It has a very ancient cathedral, and stands in a romantic position, thirteen miles W.S.W. of Salerno.

AMALGAM, a compound of two or more metals, of which one is always mercury, and this circumstance distinguishes an amalgam from a mere alloy. Nature presents us with only one amalgam, which is of silver, and is termed by mineralogists native amalgam: it occurs in Hungary, Sweden, &c., and is met with either semisolid, massive, or crystalline state. In the latter state, it consists of 64 parts of mercury and 36 of silver, out of 100 parts. Most metals may be amalgamated with mercury, and the combination appears to depend on chemical affinity. When the cohesion of a metal is slight, as in the cases of potas-sium and sodium, we find the mariner's compass absorbed by mercury, and its inhabitants are reckoned good mariners. It has a very antient cathedral, and stands in a romantic position, thirteen miles W.S.W. of Salerno.
be shaken together in a bottle containing atmospheric air, its oxygen is absorbed, and a black powder is formed which contains one metal. Thus amalgam is formed.

There are some metals, it has been already observed, which require heat in order to amalgamate them; of these, antimony offers an example. In order to effect combination, it must be melted, and while liquid mixed with hot mercury. More heat, however, causes nearly any action between iron and mercury. It has been stated, that they may be amalgamated by mixing the filings of the metal with powdered alum, and rubbing them together in a mortar with a little water: after triturating the alum, mercury is added to the mixture of tin or zinc, iron may be combined with mercury, and a double amalgam is formed. Plutina also unites with mercury by the intervention of the amalgam of potassium; but not by direct action.

Having stated some examples of the different modes in which amalgams may be formed, we shall notice their general properties. Amalgams are either liquid, soft, or hard; their form being dependent, in some cases, upon the quantity of mercury employed; and, in others, upon the nature of the metal amalgamated. An amalgam consists of 80 parts of mercury and 1 part of solid is sodium, whilst a compound of 15 parts of mercury and 1 part of tin is liquid. The liquid amalgams resemble mercury in appearance, except that the greater part of them flow less readily. As a rule in amalgams, the substances united and the solid and crystallized; the fluid portion may, however, be regarded as a solution of the definite compound in an indefinite excess of mercury. The amalgams of the more oxidizable metals of potassium and sodium, are decomposed by exposure to the air and absorbing oxygen, and they decompose water with the evolution of hydrogen gas; the double amalgam of iron and zinc does not rapidly undergo any change, and is not attracted by the magnet. All amalgams are decomposed by heat, the mercury is driven off, and the more fixed metals remaining. The process of amalgamation and decomposition is employed to separate gold and silver from their ores; the mercury obtained by decomposing the amalgams is distilled and repeatedly used for the same purpose, with comparatively little loss. The amalgams of gold and silver are employed in the processes of gilding and plating. The amalgam of tin is largely used in what is termed silversmiths' mirrors, and various amalgams of tin and zinc are employed for mixing with the lead in the machine. These compounds, as well as other amalgams, will be referred to when the tincture of the metal is considered.

Some curious effects result from the action of amalgams upon each other: if mercury be added to the liquid amalgam of potassium and sodium, an instant solidification occurs, resembling sugar when it is thrown into water. When, on the other hand, a solid amalgam of bismuth is put in contact with one of lead, they become fluid, and the thermometer sinks during their action. There is a curious compound called an amalgam of ammonia, the real nature of which has not been satisfactorily explained. When mercury is negatively electricity in a solution of ammonia, or an amalgam of mercury and potassium is placed upon moistened murattate of ammonia, the metal increases in volume and becomes of the consistency of butter; this appearance has been supposed to be due to the evolution of a metal, which Berzelius calls ammonium, with mercury. When thrown into water it effervesces copiously, hydrogen gas is given off, and ammonia remains in solution. Gay-Lussac and Thénard have maintained the opinion that the amalgam consists of mercury united to azote and hydogen; the latter being in larger proportion than in ammonia.

AMALIA, wife of the Duke of Saxe Weimar, lost her husband when she was hardly twenty years of age, and found herself head of her infatuated family during troubled times, during the wars between the two great German powers, Austria and Frederic of Prussia. The Duchess of Weimar, however, contrived to direct in safety the affairs of her state, and after the restoration of peace she turned all her thoughts to the internal improvement of her country. The city of Weimar became the resort of the most distinguished literary men of Germany, whom the Duchess encouraged by her liberal patronage to come and reside at her court. Wieland, Herder, Schiller, and Goethe, formed a constellation of genius of which any city might be proud. Wieland was appointed prior to the two of the Duchess, she also, induced to settle at Weimar, where he resided ever after, and filled a distinguished place in the ducal council. Herder was appointed court chaplain, consistorial councillor, and inspector of the schools. The Duchess Amalia withdrew from public life, and gave up the sovereign authority to her eldest son, then of age: she retired to her delightful country residence of Tiefurt, where she continued to surround herself with men of talent and learning. She travelled into Italy in 1788, and returned washed out with the keenest taste for the arts, especially for music. The Duchess was a sincere patroness of genius, which she delighted in discovering and raising from obscurity and poverty. She died in 1817, regretted by all who knew her.

AMAND L. RUYX, Sr., a town in France in the department of Nord, on the river Scarpe, and on the road from Lille to Valenciennes, about seven miles N.W. of the latter. The population amounts to about 9000; and the inhabitants carry on a considerable trade in oil, and in the breeding of horses, and ships. They are remarkable for the generosity with which they have painted their houses. There are manufactures of porcelain, of lace, and of leather. There are some mineral waters and baths about half a league from the town, in a marshy plain, and nearly surrounded by the wood of St. Amand. The town was ceded to France by the Treaty of Paris in 1795, and now contains an abbey with a considerable ecclesiastical establishment.

AMAND, a town in the province of Weimar, in the Duchy of Saxony, in the kingdom of Prussia.

AMANDUS, a chain of lofty mountains separating Ciclina from Syria. [See TAURUS.] The name Amanus was given by the Greek and Roman geographers, and is also sometimes applied by modern geographers to the range which begins at the mountain of Cape Himsyr on the Gulf of Alexandretta, and runs to the town of Ararat, on the border of Armenia and Mesopotamia.

AMARA, or AMARASINHA, an ancient Hindu gymnast, and author of one of the oldest and most esteemed original vocabularies of Sanskrit nouns, called after his name Amara Koosha, i.e. the Thesaurus of Amara, who compiled it under the title of Triparita. Owing to the almost total want of records on the internal history of India, the era at which Amara lived can only be ascertained by conjecture. Numerous authorities assert that he was a contemporary of King Vikramaditya; and his name is included in a memorial verse in the Nine Gems, or nine distinguished poets and scholars who adored the court of that prince. The exact date of this Vikramaditya's reign is, however, still subject to discussion, as in India the names of ancient kings are often assumed by the sovereigns of the first families of the dynasty, and some historians maintain that Amara and the Nine Gems generally under the first Vikramaditya, 56 years before our era. Mr. Bentley (Amiatic Re-Searches, vol. vii. p. 224-244) supposes the Vikramadityas under whose reign Amara lived, to be the successors of Raja-Deo, a sovereign of the same dynasty that was designated during the latter part of the eleventh century. Mr. Col-brooke, (Algebra from the Sanskrit, Introd. pp. 45-51) from astronomical data in the work of Varahamihira, (another of the Nine Gems,) has assumed the close of the Vikramaditya's reign in 452, and he assigns to Amara the year 472, as the date when that astronomer wrote, and Vikramaditya and the Nine Gems lived.

This opinion, with regard to Amara, is supported by the French reference made to his Dictionary as an authority in the classical work of standard authority, by numerous writers, to many of whom an antiquity of several centuries at least can be confidently attributed.

Of Amara's life little is known. He embraced the tenets of the Baudhidas, a heterodox sect; and all his compositions,
with the exception of his Dictionary, perished in the persecutions raised by the Brahmins against the persons and writings of the Buddhhas, which began in the third century, and reached their height during the fifth and sixth.

Like other original Sanskrit vocabularies, that of Amara is in metre, to aid the memory. The whole is divided into three books. In the first two words relating to kindred objects are collected in one or more verses, and placed in chapters. Thus the first book commences with words for heaven; next follow the names and attributes of the several deities; then come terms for space, the cardinal points of the compass, &c. The third book is supplementary: it contains epithets, a list of homonymous words, (arranged alphabetically like many Arabic Dictionaries, according to the final consonants,) particles, and adverbs, (considered as indeclinable nouns by the Hindu grammarians,) and remarks on the gender of substantives. The Sanskrit Dictionaries or Koshas, do not include the verbs of the language, the stems or roots being arranged and explained in separate lists. The Amara Kosha contains only about 10,000 different words. In a language so copious as the Sanskrit, this number appears small: but in consequence of the great regularity and consistency with which, in this language, compound nouns and derivatives are formed, very few of these require to be inserted and explained in a Dictionary. Real deficiencies in the list of Amara are supplied partly by commentaries on it, and partly by more recent Dictionaries, one of which, the Trikandasaha, by Purushottamadeva, is what its title implies, purposely compiled as a supplement to the tripartite work of Amara.

An excellent edition of the Amarakosha, with marginal explanations and notes in English, and an alphabetic index, was published by Mr. H. T. Colebrooke at Serampore, 1808, 4to.; reprinted, 1825, 8vo. An edition of the mere Sanskrit text, and table of contents likewise in Sanskrit, appeared at Calcutta in 1813, in a volume with three other original Sanskrit vocabularies. (Asiat. Res. vii. p. 214, seq. Wilson's Sanskrit Dictionary, Preface, p. 5, seq. first edit.)

AMARANTACEÆ, a natural order of apetalous dicotyle-

[Alstromeria polygamus.] 1. A calyx and bracts with stamens. 2. The same with the pistillum. 3. The pistillum opening. 4. A seed. 5. A seed cut down, showing the embryo. 6. The embryo—all magnified.

donous plants, remarkable for the dry coloured scales of which all their bracteal and floral envelopes are composed; a character by which they are principally known from Cheno-polae. Their essential distinction is briefly this: calyx, dry, coloured, not falling away; petals, wanting; stamens, five or more; ovarium, quite simple, superior; fruit, an utricule, containing a single seed, which has an embryo curved round a central farinaceous albumen; leaves, destitute of sti-
pule.

The species are found chiefly in tropical countries, where they are often troublesome weeds. The cock's-comb, the globe-amaranth, the prince's-feather, the low-lies-bleeding of our gardens belong to the order; which does not contain a single species in which any deleterious property has been found.

AMARAPURA, a city in the Burman empire, six miles east of Ava, in 97° 55' N. lat., and 96° 40' longitude. This city was founded in 1783, by the monarch then on the Burmese throne, and was declared the capital of the empire. The seat of government has since been removed, or rather has returned, to Ava.

Amarapura stands near the east bank of the Irawaddy, and at a short distance from a branch of the same river, which is to the east of Amarapura, and joins the main stream immediately below Ava. With very few exceptions, the houses are built of wood; many of the public buildings have a very striking appearance, owing to the splendour of the gilding with which their roofs are covered, both within and on the outside. From the nature of the material employed in building, there is great risk of accidents from fire. To guard against these, the better kind of houses are surrounded by enclosures, and are constructed with walls that are covered in. Many of the roofs of oldsmiths, who are found in every quarter of the city, are decorated with rows of towers filled with water, fixed on the ridge of the roof, so as to be ready in case a fire should break out. Notwithstanding these precautions, nearly the whole of the city, consisting of 20,000 or 30,000 houses, was destroyed by fire in March, 1810. The population at that time was estimated at more than 170,000; but owing partly to the calamity just mentioned, and partly also to the removal of the seat of government in 1819, the present estimate of its popula-
tion does not go beyond 30,000 persons.

The fortifications of Amarapura are equal in strength to most of the native fortresses in India. The fort is a square building with walls twenty feet high, which are faced with brick, and strongly built. Each angle of the fort contains a large square projecting bastion, and each side has a principal gate, besides smaller ones between it and the bastions, so that there are in all twelve gates. Each side of the fort is somewhat more than 7000 feet long, and the whole is surmounted by a broad ditch, faced with brick. The fort is built on the northern bank of the lake, the waters of which wash its walls whenever the lake is swelled during the rainy season.

The manufacture of jewellery was formerly carried on extensively in this city, an entire street having been filled with the houses of goldsmiths; most of these shops have now disappeared. The fort contains a royal library, the books composing which are contained in about one hundred large, well-filled wooden chests. The river Irawaddy offers the advantage of water-carriage to and from the city, which is situated near a fertile district, where abundance of wheat is raised of a good quality. (Captain Cox's Notes on the Burman Empire.—See also Berghaus' Asia, and his Atlas.)

AMARYLLIDÆ, or the narcissus tribe of plants, is a group of monocotyledonous genera, to which the daffodil, the belladonna and Guernsey lilies, and the showy Brunsvigias and blood-flowers (hemanthus) of the Cape of Good Hope belong. They are characterized by having six stamens, a highly-coloured flower, and an inferior ovarium. The beauty of their blossoms serves as a cloak to their poisonous properties, and shows how little the external appearances of plants are to be trusted in judging of their virtues. To form an opinion only from their aspect, these would be pro-
nounced the most harmless of plants, while in fact their bulbs are dangerous poisons; the juice of that of hemanthus toxicarius is insipidized by the Hottentots, who smear their arrow-heads with it; other kinds are not less fatal, and even the common daffodil contains within its bulbs an acid irritating principle which renders it a powerful emetic. Like many other poisonous families, this occasionally secretes a kind of fœcules, or flour, which, when separated from the juice that is naturally mixed with it, is an albuloma sphere of food: the arrow-root of Chili is yielded by an alstroemeria, which belongs to amaryllisidae.

The species, which are chiefly scattered over Brazil, Africa, and tropical Asia, are nearly all bulbous; a few only acquire a high degree of development and lose their bulbous character, as the doryanthus, of New Holland. No tribe is
more admired by cultivators, in consequence of the universal beauty of its flowers.

AMASIEH or AMASIA, a sanjak of Anatolia, and also the name of the principal town of the province, which is in 40° 28' N. lat., 36° 26' E. long. Amasiah was the birthplace of the Greek geographer Strabo, whose description of its situation corresponds, as far as we can understand it, with the modern appearance of the place. Its ancient name of Amasia or Amasiea can scarcely be said to have undergone any change at all. 'My city,' says Strabo (Casab., p. 561), 'stands in a deep and extensive gorge, through which the Iris (now the Jeshil-Ermak) flows. It is surprisingly favoured both by nature and art, being at once both a town and a garrison: a rock, lofty and precipitous, all round, descends with rapid slope to the river; one part has a wall close on the bank of the stream, where it joins on to the city; and in another part the wall runs up on each side of the hill to the summits, of which there are two, connected with one another and exceedingly well fortified. Within the enclosure made by the wall are the palace and the tombs of the kings. The summits are united by a very narrow neck, the ascent to which is five or six stadia on each side from the bank of the river and from the suburbs; and from the neck to the two summits is about another stadium of steep ascent, which is altogether impregnable. * * * On the tops also water is carried up under the rock; two narrow galleries (pipes, channels, στεφαλλυτες) being cut, one from the neck to the river, and the other from the summits to the neck. * * * There are two bridges on the river, one from the city to the suburbs, and another from the suburbs to the country; at this latter bridge terminates the mountain which overhangs the rock. The town was of course on both sides of the river: the castle with part of the surrounding walls still exists on the opposite side of the river to the town. The description of Strabo is not altogether intelligible without a better plan of the place than we can find.

A view of the mountain with the two tops may be seen in Jackson's Journey from India (London, 1799, p. 212). Jackson describes some of the mountains round the town as being almost half a mile in perpendicular height. They are all calcareous stone, susceptible of a polish. Often (ii. p. 534) also describes a long road cut with infinite pains in the rock, to bring, as he says, water from the mountains to Amasia; but this is not Strabo's channel. This city is now large and populous; the houses are chiefly of wood, but many are of stone, and are all covered with tiles. There is a large stone mosque, built by Sultan Bayazid, with two lofty minarets, also of stone; the dome of the mosque is covered with lead.

This town can only be approached by two narrow passes, one on the north, the other on the south, both of which can be defended by a small force. The river, which runs in a deep, narrow channel both above and below the town, is not suitable for navigation. The inhabitants procure from it their chief supply of water, which is raised by wheels furnished with buckets, and driven by the stream. Fontanier calls the river of Amasia the Toecula-sou, or river of Toest, and gives the name of Jeshil-Ermak to the current of the stream. In the numerous gardens about the town many fine fruits are grown, especially grapes, of which a strong wine resembling sherry is made. Silk forms the chief part of the commerce of Amasia, and also a great trade in the fur of the marten, which is caught in the Janik mountains, that extend from Amasieh to Trebisond. Many of the inhabitants are Christians, but the population is not known. Amasieh has an Armenian archbishop. Fontanier, a late traveller, states the number of houses at 10,000.

The antiquities of Amasieh are often spoken of, but so satisfactory account of its remains is yet published. Jackson describes some holes in one of the hills cut in the solid rock (see his plate) similar to a Hindu pagoda, which can only be approached by narrow passes cut through the rock. (Compare Morier, Journey through Persia, &c., p. 349.) The ruins of a temple also are mentioned by Fontanier.

We are not able fully to understand the passage from Strabo placed within asterisks; it either places the one person in the carriage, and the communication with the other was a communication under the surface, between the river and the castle, and the two summits, for the purpose of securing a supply of water from the river, or that the channels conveyed water from a spring on the mountain to the town; but it is impossible to say what is the precise meaning of Strabo. The two existing canals, which Fontanier speaks of as the canals or pipes (στεφαλλυτες) of Strabo, are certainly not those described by the Greek geographer. No modern traveller has yet given any account as will at all explain this obscure passage of Strabo. The name is written Amasseia on the earlier coins, and Amasia on those struck under the early Roman emperors. (See Racine, Lexicon Rom. Numarum.)

AMOS or AMOSIS, the eighth king, according to Africanus, of the twenty-sixth dynasty of Egyptian kings, reigned from B.C. 569 to B.C. 555. Amasis was a native of Siouph, in the nomos (district) of Sais, in the Delta. Being sent by Apries (the Pharaoh Hopisernes, Ptole. W. 11, p. 308) to stop a movable, he was proclaimed king by the rebels, and returning at the head of this army, he defeated his master, who was supported by a force of 30,000 Carians and Ionian Greeks. After the battle, Amasis became king of Egypt, and Apries, being surrendered to the Egyptians, was put to death.

Amasis married a Greek wife from Cyrene, and further prepared the way for great changes in the social condition of Egypt, by allowing Greek merchants to settle at Naucratis, and to build temples and bazaars. Solon is said to have visited Egypt in his reign. Amasis decorated Sais, the chief city of the nomos, in which he was born, with numerous great works of Egyptian art: these were, magnificent propylæa to the temple of Athene, enormous and large, and colossal. The architectural achievement was a monolith (one-stone) temple which be brought from the granite quarries of Syene, down the river, a distance of about 600 miles. The exterior dimensions of this stone were 34 feet long, 21 feet broad, and 13 feet high. (See British Museum. Egypt.) Sais, the royal residence of Amasis, where so many wonders of Egyptian art have been collected, is now a mass of rubbish called Sa el Hajer, or Sa el Rock; exhibiting only mounds of rubbish and pottery, and sun-dried bricks. Many remains of antiquity might probably be discovered by digging.

Amasis also made a colossal 75 Greek feet long, flanked by two smaller figures 30 feet high, which he placed in front of the great temple of Haphestos (Phi'ta) in Mem-
AMATHONTE, a small village of Cyprus, on the south coast of the island, near the sea, said to be on or near the site of the Greek city of Amathus, the home of his biographer and a few families from the modern Limassol. Amathus was a city of great antiquity, and possibly of remote Phoenician origin, though afterwards inhabited chiefly by Greeks. Amathus was worshipped there in a temple of great antiquity. [See ADONIS.]

In the nead that the year 526 B.C., the Persian Near Limassol there are still considerable remains, supposed to belong to the old town. [See Mannert, Syrien, p. 447.]

AMATI, HIERONYMUS, the name of a celebrated maker of violins, a native of Cremona in Italy, who lived about the year 1500. His son, Anthony, to Rome, his attendant, Nicolaus, (son of the latter,) were also excellent makers.

AMATO, or AMATUS, (JOANNES RODERICUS) often called Amatus Lusitanus, a very eminent physician of the sixteenth century. Most of the particulars that are known of his life are derived from his works, which have been carefully collected by Astruc, in his treatise De Morbis Venereis. (See vol. ii. pp. 735—740, 2nd edit. 4to, Paris, 1740.) Succeeding biographers have confused his name with that of several other men of the same name and place, but in no instance with respect to accuracy. Amato was of a Jewish family, and was born at Castel-Branco, in the province of Beira, in Portugal, in 1511. Like many of his nation, concealing his religious faith, he was educated at Salamanca; after leaving which he visited Spain, and took up residence, first in Granada, and then in Italy. He remained for some time both at Venice and Ferrara, giving lectures on the medical art; and, as Astruc adds, putting the statement in Italics, he superintended the dissection of twelve bodies in the year 1537. But it is evident from the contemned in a mistake, and that the year probably be 1547, a correction which may perhaps make the circumstance recorded not quite so remarkable. Before 1549, Amato had removed to Ancona, where he resided and practised his profession till 1554. While here, he had the honour of being called to the sick-bed of Pope, Julius III. Bread of the Inquisition, however, whose notice had been attracted to him as a concealed Jew, induced him, in 1555, to withdraw to Pescaro. It appears that on this occasion he found an enemy in the new pope, Paul IV., and that in his precipitate flight he left behind him his property, and lost the manuscript of an unfinished commentary on Avicenna, which he was preparing for the press. From Pescaro he some time after retired to Ragusa, and from thence, in 1556, to Thessalonica, where he made open profession of the religion of his forfathers. He is ascertained to have been alive in 1561, but no notice of him occurs after that date, and it is not known when he died. Amato is the author of two works, both of which lose their value with the most recent editions of them and in modern times. The one is entituled, in the first edition, printed in 4to, at Antwerp, in 1536, Exegematia in Prioris duo Dioscoridis de Matre Medicis Libros; and in subsequent editions, Exegematia in Dioscoridem. It was printed with this title in 4to, at Strasbourg, in 1541, and in 8vo. at Venice, in 1553, at Strasbourg in 1554, and at Lyons in 1557 and 1558; the last two editions have notes by Robert Constantin. Amato's other work is his Curationum Medicinalium Centuria Septem. Of this work, the first part was printed in 1550, the second in 1551, the third in 1552, and the fourth in 1553. It was printed in 8vo. at Florence, in 1551; the second, printed at Rome, in 1551, was published in 12mo. at Venice, in 1552; the third and fourth, written at Ancona, in 1552 and 1553, were, probably after having been printed separately in Italy, published together at Venice in 1556. The second was intended to complete the work by the addition of three other centuries, in which, and not, as has been commonly said, in a complete edition of Dioscorides, he proposed to make his reply to an attack that had been directed against him by Paul, whom he reviled. About 50 or 60 persons were engaged in a s. adversus Amatum, published in folio at Venice, in 1557. This design, however, he appears not to have lived to accomplish. Besides other reprints of portions of the work, the collected Centuries of Amatus appeared in 12mo. at Lyons, in 1559; in 4to. at Paris in 1613, and in 1620; at Bordeaux, in 1629; and in folio, at Frankfort, in 1646. In both these editions, the author is said to have shown an intimate acquaintance with the writings of the Greeks and Arabic physicians; and they are also stated to contain many curious notices both in medicine and in natural history. The edition is a translation into Spanish by Amato of The Roman History of Eutropius.

AMAUVOSIS, from ἀνάμωσις, (to darken or to make obscure), dimness of sight, blindness. [See GUTTA SERRA.]

AMAZIYAH, or AMAZIAHU, means literally, one strengthened by the Lord, and was the son of Amaziah, the King of Judah, who began to reign when he was twenty-five years old, about the year 838 B.C., after his father Joash had been murdered in the house of Millo by his own servants Joazar and Jehozabad. (2 Kings iv.) Amaziah reigned twenty-five years in Jerusalem; his mother's name was Jehoaddan of Jerusalem. He did what was right in the sight of the Lord, yet not with a perfect heart, and not like David; he did according to all things as Joash his father did. The people in his reign still sacrificed, and burnt incense to the high place. He slew his servants who had slain the king his father, but the children of the murderers he spared. Having resolved to attack the Amalekites, Idumæans, and Gbabitians, he collected an army of 8000 men in the fifth year of his reign, and paid 100 talents of silver to 100,000 auxiliaries of the kingdom of Israel, but according to the advice of a prophet, he dismissed the auxiliaries before the war commenced. The disbanded Israelites upon this ravaged the cities of Judah, slew 3000 men in the tenth year of his reign, and took and slew 10,000 of the Edomites in the Valley of Salt, and the children of Judah brought other 10,000 of the Edomites to the top of a rock, and cast them all down. Amaziah also took Seirah and called it Joktheel. The name of Seirah is translated Petra, rock, by the Greeks. The remains at this place in Arabia Petra, between the Dead Sea and the Elanitic Gulph, are described by Iby and Manghs (Travels, p. 336, &c.)

Amaziah, flushed with the victory over Edom, set the gods of Seir up in their own land; burnt incense unto them, and declared war against Jehoshah, the king of Israel. But Judah was worsted before Israel, and they fled every man to their tents. Jehoshah took Amaziah captive at Beth-shemesh, and broke down the wall of Jerusalem, from the gate of Ephraim unto the Corner-gate, four hundred cubits. He also took all the vessels that were found in the house of the Lord, and in the treasures of the king's house, and hostages, and returned to Samaria. It appears that about 20 years after this he, like Amaziah of Judah, went to the service of Syria, and was directed against him in Jerusalem; and he fled to Lachish; but they sent after him and slew him there, and brought him on horses, and buried him in Jerusalem with his father Amaziah. His two oldest sons, Joash and Amaziah, took Azariah, (Help of Jehovah,) or Uzziah, (Power of Jehovah,) who was sixteen years old, and made him king instead of his father Amaziah, 2 Kings xiv.; 2 Chron. xxv.; Compare Jos. Ant. ix. 9. 10. The Septuagint wrote for Amaziah, άμαθιος, άμαθιος, Josephus, άμαθιος, and the Vulgate Amasias.

AMAZON, or MARAÑON, or ORELLANA, is the name given to a river which traverses the equatorial regions of South America nearly in its whole extent, running chiefly from west to east, and stringing its banks with the most luxuriant vegetation the equator. It is the largest river on the globe, not only for the length of its course, but also for the extent of country which is watered by this noble stream, and its great tributaries.

Geographers do not agree as to the true sources of this river, though they agree in placing them in the highest ranges of the Cordilleras. Some think that they are found in an alpine lake, a little to the south of the tenth parallel, forming its main source, while others place it at Rio de la Plata, on the right bank of the equator. The river descends from the high valley of the mountains to the plains that are situated to the east of them, by the Pongo de Manseriche, which name is given to a long rapid of the
rivers, full of eddies and small cataracts, extending between the town of St. Jaen de Brancamoros, and the village of Chuchunga, for about twenty-four miles. The river above the Pongo runs down the mountain lake, forming rapids and cataracts to the increased breadth of 250 fathoms; below St. Jaen de Brancamoros it suddenly contracts to 25 fathoms, and rushes through a rent or crevice between mountains of tremendous height. This Pongo cannot be ascended by steams, because there would be broken pieces of the rocks which they experience when dashed against the rocks. Balasas, therefore, are used, a kind of rafts, made of a very light wood or rather cane, similar to the bamboo, the single pieces of which are fastened together by ropes, in such a manner that they never suffer the least moderate violence, and consequently are not subject to be separated even by the strongest. The rafts used in the surf of Coromandel in the East Indies, and called there catamarans, are constructed on the same principle. At some distance from the Pongo, 16 miles from the mouth, it branches into the Tunugurua, nearly due north, for about 350 miles.

Advancing farther to the east, between the 4th and 5th degree of southern lat., the waters of the river are increased by the tributaries from the rivers Tigre and Tigre, both of which rise in the Cordilleras, between 1° and 2° of southern latitude, and descend in a southeastern course to the Tunugurua. The course of the former is stated to be about 350, that of the latter nearly 400 miles.

Thus increased by the waters of three large rivers, the Tunugurua meets at St. Joaquin de Omgauzas, its rival, the Ucayali, which is considered as the true source of the Marabon by all those who think that the stream which rises farthest from the coast is to be considered as the best claim of being thought its source. Yet the sources of the Ucayali are not known. It was formerly conjectured that the principal source of this river was the Beni or Paro, which was supposed to be formed by the waters descending from the Cordilleras, and which the southern tributary, as Bpline, is called Pacarayma, a ridge of the mountain-mass called by Humboldt Pariame, and not far from the sources of the Paragua, a tributary of the Orinoco, falling into the river at this point. The upper part of the course of the Rio Branco is nearly parallel to the river, from west to east, for upwards of a hundred miles, till it suddenly turns to the south, and reaches the Rio Negro by a south-western course. Its whole course probably amounts to at least 78° of longitude, or 1800 miles; besides its course, its western tributary, the Paragua, and one other, the Pongo, descending from the Cordilleras, parallel to it, and this contributes to the formation of the head of the mouth. Southward it joins the Ucayali, where the course of the Tunugurua, meeting the mouth of the Pongo, is joined by the Tunugurua, which is a river of great size, and contains a quantity of sand, which makes it more difficult to navigate. The source of the Pongo is about 50° of latitude, and 63° of longitude, at 31° 31' of southern lat., the Tambo unites with the Paro, whose course has been nearly due north through nearly 4° of lat., and the river formed by their conjunction is called the Tunugurua. The Ucayali and the Tunugurua run nearly in an eastern direction. In all this extent it traverses only 4° of latitude, from the 4th parallel to the equator; and two of them it traverses near its embouchure, where it runs nearly north-east. In this part of its course it receives a great number of tributaries, some of them of such magnitude, as to surpass the largest rivers in Europe in their extent and the volume of their water.

From the north, there fall in the Amazon, the Napo, the Putumayo, the Yapura, and the Rio Negro. All these rivers rise in the eastern declivity of the Cordilleras, within the space of a small cone, forming rapids and cascades, and increased to the width of 250 fathoms; but as they meet the Amazon river at great distances from one another, the courses of those which join the main stream farthest to the east, are the longest. The Napo, the most southern of the group, would be the largest of all, but it is prevented from reaching its mouth by the volcano Cotopaxi, and runs first nearly due east, afterwards east-south-east till it reaches the Amazon river, after a course of about 700 and 800 miles. The Putumayo, which is also called Aca, rises on the eastern declivity of the snowy Cordilleras, between 7° and 8° of southern lat., and 3° and 4° of lat. (from 1° of southern lat. to 2° of northern), but as they meet the Amazon river at great distances from one another, the courses of those which join the main stream farthest to the east, are the longest. The Napo, the most southern of the group, would be the largest of all, but it is prevented from reaching its mouth by the volcano Cotopaxi, and runs first nearly due east, afterwards southeast till it reaches the Amazon river, after a course of about 900 miles. The Rio Negro is by far the largest of the northern tributaries of the Amazon river. Its unknown source lies between the 2nd parallel of northern latitude, and the 72nd degree of western longitude, and near the mouth of the Ucayali, and is reckoned by Humboldt to be about 5° of longitude, between 7° and 8° of long., (from 7° to 68°) is nearly due east, up to the place where the Casiguiri branches off to the north-northeast, to form a connexion between the Rio Negro and the Orinoco. At this point the Rio Negro changes its course, and continues north-east, and after it has passed the equator, where it unites with the Guayas, a river which likewise descends from the eastern declivity of the Cordilleras, and at its junction with the Rio Negro has already run upwards of 500 miles. The river forms the mouth of a large estuary, in which it continues for 5° more of longitude, at a distance of about 20′ to the south of the equator. It then gradually begins to approach the Amazon river by an east-south-eastern course, and here it receives another eastern tributary, as the Paragua, which runs in a mountainous region called Paraguan, and the course of the Marabon nearly parallel to the river, from west to east, for upwards of a hundred miles, till it suddenly turns to the south, and reaches the Rio Negro by a south-western course. Its whole course probably amounts to at least 78° of longitude, or 1800 miles; besides its course, its western tributary, the Paragua, and one other, the Pongo, descending from the Cordilleras, parallel to it, and this contributes to the formation of the mouth of the Napo. Southward it joins the Ucayali, where the course of the Tunugurua, meeting the mouth of the Pongo, is joined by the Tunugurua, which is a river of great size, and contains a quantity of sand, which makes it more difficult to navigate. The source of the Pongo is about 50° of latitude, and 63° of longitude, at 31° 31' of southern lat., the Tambo unites with the Paro, whose course has been nearly due north through nearly 4° of lat., and the river formed by their conjunction is called the Tunugurua. The Ucayali and the Tunugurua run nearly in an eastern direction. In all this extent it traverses only 4° of latitude, from the 4th parallel to the equator; and two of them it traverses near its embouchure, where it runs nearly north-east. In this part of its course it receives a great number of tributaries, some of them of such magnitude, as to surpass the largest rivers in Europe in their extent and the volume of their water.
such great distances. All the country between the rivers Paro-"lobi and Purus may be considered as unknown.

The Madeira, however, the largest of the tributaries of the Amazon river, is pretty well known, because it has been ascended even in its upper branches. Two large rivers are considered as its sources, the Magro, which rises to the Guaporé, but which descend from different places; the former is the channel for the waters that run down to the east from the high ground between the 14th and 20th degrees of latitude; the latter collects chiefly those that descend from the Cerro de la Caja. The eastern source of the Madeira is situated in the south of the mountain mass near Santa Cruz de la Sierra, a branch or offset of the Cordilleras projecting some distance to the east. Here the river formed by the waters descending from the north and west, is called Condurillo, and runs for three degrees of longitude to the east-south-east along the foot of the mountains: before it reaches the plains of Chiquiato, which separates the Cordilleras from the Campos Parecis, and turns to the north, the name of Condurillo is changed to that of Rio Grandes or Guaporé. Running in the plain it surrounds the western extremity of the Sierra de Santa Cruz, returning from the 64th meridian to the 66th. It then takes the name of Maróte, and runs to the north and east till it reaches the Guaporé, which joins it on the other branch of the Madeira. The Guaporé, which has its source in a very considerable lake, in about 16° S. lat., is increased by many considerable rivers, especially the Uyay, which joins it from the southeast. Its general course lies to the north-north-west, and only about 400 miles from its mouth. It then turns to the east, till it reaches the Amazon river at 3° 24' 18" of southern latitude, and about 59° west from Greenwich.

Though the course of this river is obstructed by some rapids and falls, it is navigable almost in its whole extent. The width of the river in some places, in proportion to the sources of the Condorillo amounts to upwards of 1800 miles.

The Topyos or Topayoso, its neighbour to the east, rises in about 14° of southern lat., and runs generally to the north-east, till it reaches the Amazon between 1° and 2° of southern lat. and 55° of western long. Its current is very rapid, and the number of its branches is considerable, especially in the upper part of its course, but not to be considered as numerous. Its whole length may amount to 900 miles. The last great tributary of the Maronion is the Xingui, which rises in the interior mountainous parts of Brazil, about 15° of southern lat., and 49° of western long., a river of great width, and north-north-west, approaching the Topayoso; it then runs parallel to it, but at some distance before its junction with the main stream it makes a great bend to the south-east, and then joins, with a north-eastern course, the Amazon. Its whole course amounts to about 1000 miles.

Towards its embouchure the Amazon divides into two branches, of which the northern is by far the broadest, and retains its name. The southern, called Tungurasga, runs south of the island called by the Portuguese Ilha dos Iaones, or Ilha do Marajo, and joins on the eastern side of the island the river Tocantins, which after this junction is called the river Pará. The width of the channel between the island and the current of the river is about eighteen miles, but towards its mouth it widens to thirty miles.

The width of the Amazon river is, of course, various. In the upper parts of its course it averages from one to two miles; but lower down it grows much wider, and after its junction with the Xingui it is hardly possible to distinguish its opposite banks.

From the sea to the mouth of the Rio Negro the depth of the main channel is nowhere less than thirty fathoms; higher up it varies from ten to twelve; and up to the basin of Guas- tura, between the rivers of the Turunca and the Tungurasga, there is depth of water for vessels of almost every description. Higher up, only vessels can proceed with safety which do not draw more than five or six feet water. Such vessels may enter the Tungurasga and proceed up to the Pongo de Man- srum. The Guassaga and Uayacoli too are navigable for such vessels to a considerable distance from their junction with the main stream.

The shoals of the river are very numerous; and the navigable channels in many places narrow, winding, and subject to continual changes. The banks of the river being low are subject to be under water, owing to the freshets and great swellings in the rainy season; when they happen, the country is inundated for many miles on each side of the river, the whole of the numerous islands are covered either with water, and new ones are formed. In the lower part of its course, the navigation is rendered somewhat difficult by the floating trees, which descend from the Madeira, as into the Missis- sippi from the Missouri.

The islands forming this river are almost innumerable, and of all sizes; many are twelve or fifteen miles in circumference, and some thirty or thirty-six. The most remark- able are the islands of Tupinambas, of dos Iaones, and of Curiana. The first is properly formed by the two branches by which the Madeira joins the Amazon; that of the river running parallel to the main land, is named Manus, and separates the island of Tupinambas from the Amazon. The island itself extends over two degrees and a half of longitude according to the statement of Lieut. Maw, but it seems to be very narrow. The Ilha dos Iaones, or its, is more regular, as we have already noticed, is enclosed by the two branches of the Amazon and the river Pará, extends from east to west about 130 miles, and not much less from north to south: its circumference is stated to be about 600 miles.

The island of Curiana, which lies where the Missouri river meets the Atlantic Ocean, is about 400 miles in length, and nearly 25 in breadth; it is said to be very fertile.

The rapidity of the stream is very great; according to Lieut. Maw, its average is about 8 or 12 miles an hour, in some places more, and in some less. That, however, is only the case in the rainy season, between April and October; in the dry season its rapidity is diminished. The tide which enters the river may be observed as far as the town of Oporto, 400 miles from its mouth. When the river begins to ebb, and the sea-water receding liberates the imprisoned current of the river, the Amazon pours out with increased force and velocity into the ocean, and as it here meets, at no great distance from the land, the current which from the north-west along the coast of Guatemala rises to the ocean, it gives rise to that phenomenon which is called by the Indians Pororocas. The river and the current, having both great rapidity, and meeting nearly at right angles, come into contact with great violence, and raise a mountain of foam, called sea-torment, which, as it increases, increases extravagantly, estimated. The shock of these two bodies of water is so dreadful, that it makes all the neighbouring islands tremble, and fishermen and navigators fly from it in the utmost terror. It may be said, that the river and its sea-torment are often the cause of shipwrecks, as it seems to them to come to a compromise: for the sea-current continues its way along the coast of Guyana to the island of Trinidad, and the current of the river is still observable in the ocean at a distance of 500 miles from the mouth, according to the statement of Sir James Yeo. (See Major Rennell's Investigation of the Currents of the Atlantic Ocean.)

According to the calculation of Baron Humboldt, the whole course of the Amazon river amounts to 7200 geographical miles, (at 15 to a degree,) or upwards of 3300 English statute miles; but he considers the Lake of Lauri- coche and the river Tungurasga as the true sources of the river. If the Apurimac is taken as the main stream instead of the Tungurasga, the course of it will be increased by 300 or 400 miles.

The last-mentioned traveller discovered and navigated the natural canal by which the river-system of the Amazon is united to that of the Orinoco. Some vague information of its existence is connected with the report that the Conquills of the time reached Europe, but it was strongly combated by geographers, and rejected. Now, however, it is no longer doubt- ful that a river, called the Cassiquiare, forms between the 2° and the 3° of northern latitude a navigable connexion between the Orinoco and the Amazon, which has its source about a hundred miles and upwards in a north-eastern direction. The country on its banks is nearly uninhabited.

Humboldt considers the country on the banks of the Amazon and Orinoco, of the nature of a plain, but it does not deserve such a name, when compared with the Llanos of the Orinoco and the Pampas of the Rio de la Plata. The country immediately on the banks of the Amazon, and also to a distance of many miles on each side, is very low, and therefore subject to be inundated, but...
further from the trees it rises and is much diversified with hills covered with tus trees. The full growth of these trees, the hardness of their wood, which often defies the attacks of iron and even the finest steel, and their vigorous and vegetable, give unequivocal testimony to the richness of the soil on which they grow, and would, perhaps, a hundred-fold repay the labour bestowed on it if it was cultivated. But it is almost entirely without culture, and, except a few spots here and there, it is inhabited only by the native savages, who roam about in the immense forests and live by hunting. Very few articles are brought thence to the markets of the world, and those are only gathered from the wild trees and plants, and the grasses and shrubs of the country. Doubles less these immense forests with their vigorous vegetation conceal many valuable treasures; but until our times access to them was shut up from political motives, and the time which has elapsed since the Spaniards came to this coast is such that one might be squired on any degree of attention and success.

The fish of the Amazon river itself are not much better known. Turtles of different kinds are in great abundance; alligators are frequently met with, but the most extraordinary of the fresh-water fishes of the Amazon is the called the sea-cow, though according to Baron Humboldt it never met with in salt-water. It is found also in the Esequibo.  [See Manatus.] It is observed as a very curious fact, that between San Francisco (15° 44' lat. and 76° 24' W. long.) and the mouth of the Rio Negro, a stone or a pebble is almost as rare as a diamond.

The first European who descended this river was Francisco Orellana, a Spaniard, and to preserve the memory of his bold enterprise the river is called the Orellan. This adventurer narrated, that its banks were inhabited by warlike nations; and that in some parts the women themselves went into battle, which gave rise to the name of Amazon, in reference to the ancient fable of the Amazons. In this respect they were conquered by the Spaniards, and the name of Orellana is derived. The most probable conjecture is, that a nation of this name inhabited a part of its banks.

Both the Spaniards and the Portuguese have created some settlements along its banks, but they have little importance. St. Juan de Brancos, the capital of the Tungurapanca is the most important settlement of the Spaniards, containing about 4000 inhabitants; St. Francisco de Borja, at the confluence of the Amazon and Pastaza, is much smaller. The most remarkable settlement of the Portuguese is Obido, where an excellent sort of eaca is gathered, and Santarem, at the mouth of the Topayas. Both contain only a few thousand inhabitants.

The effects of civilization cannot be better shown than by the increase of the people who live on the Amazon and its principal rivers, the Mississippi and the Yangtse-Kiang. Though the country traversed by the river-system of the Amazon is more extensive than those which belong to the two latter, and perhaps not inferior in fertility, the number of its inhabitants is far less. And the reason of this is, that the yearly increase is certainly less than those that pass in one month along the Mississippi, and probably not greater than the number of those which every day ascend and descend the Yangtse-Kiang. (See Travels of La Condamine, of Baron Alexander von Humboldt, and of Lieut. Maw; South America, History of Brazil; the Atlas to Humboldt’s Travels; Arrowsmith’s Map of America; and Journal of Lond. Geog. Soc., vol. ii. p. 650.)

AMAZONS, a fabulous nation of female warriors. Still it is probable that some of the wild and almost impossible as the stories relating to them for the most of them are contradictory. Many geographers of antiquity bear strong testimony to the general belief that such a nation existed. All appear to agree in assigning them a Sthyan origin. Two Sthyan princes, according to the Chinese tradition, which reports that they conquered Men, which is their own name, and reached the river Thermodon in Cappadocia with their followers, and settled there. The new comers in time provoked the anger of their neighbours, and, in a war which ensued, their male population was almost exterminated. The women then took up arms, and with so much better success, that in future they resolved to live without men, and put the remaining males to death. They elected two queens, who in turn commanded their armies in the field, and kept order at home. They are said to have extended their conquests far and near, and to have conquered many countries in Asia Minor, as Ephesus, Smyrna, Cynus, and others: and indeed they are placed by different authors in so many different parts of Asia Minor, that nothing certain can be made out respecting them. Their chief seat, however, was Thensyricra, on the river Thermodon, near the south-east coast of Egypt, and the nearest to the Phcenicians; but it is more probable that Thermodon, the name of Antiok, Hippolyta, (whom it was supposed by Megara in the time of the Pausanius,) Thessalians, will be familiar to the reader. It is a remarkable thing that the Spaniards are said to have been ware of Herculies (Hercules) and by Dionysus (Bacchus); to have invaded Attica in the time of Theseus, under the command of Hippolyta; and that the battle between the Amazons and the Greeks was fought, as we are told, near the Pucele (the painted). Priam fought for the Trojans against the Amazons after the death of Hector; yet the Amazons came to the assistance of the Trojans against the Greeks under the command of Penthesiles, who was slain by Achilles. The Greeks were also said to have fought against the Amazons, and defeated them, though it is probable they were not men, but other sorts of men, they did not neglect the care of continuing their race; but they only brought up female children, whom they educated in all the arts of war, seeming the right breast, that it might not interfere with the free use of the arm. They are said to have been originally a foreign word among the Greeks, and to have been short mantle, reaching to the knee, the left breast bare. By orator Lyias, they are said to have been the first who fought on horseback, and to have had iron weapons, which were not in use among their neighbors.

Though they have a semicircular, or crescent-shaped shield, bows and arrows, and the double-edged battle-axe, what was their peculiar and distinguishing weapon. In the latter time of the Amazons, and by the ancients of Greece, were holding a bow, one of the principal symbols, we still find rumours concerning these singular beings; for it is asserted by Diodorus and Curtius, that Thalastria, Queen of the Amazons, paid a visit to Alexander in Hyrcania; and by Plutarch, that certain Amazons fought with the Greeks, and that Amazons fighting against the Amazons of the Caspian Sea. Of their two derivations are given: one that they are so called from , females living together; the other as , without a breast. It is more likely that they were originally a foreign word among the Greeks, according to their custom, transmuted into a Greek form, and then proceded to invent a fitting etymology. There is said, in fact, to have existed, consisting of half a male, and half a female body, vertically united, and it has been suggested that this kind may have given rise to the story of the Amazons.

The story of a race of Amazons is not confined to Asia. Alvarez, who visited Abyssinia in 1526, speaks of a race of Amazons south of Dunot, who were warlike, and to whom the Latin authors ascribe the discovery of Abyssinia; in modern times, however, it may be the form of their government, ambassadors are, for the most part, named by the person intrusted with the...
supreme executive power. In the United States of North America, the President names an ambassador, but the appointment must be confirmed by the Senate. Sometimes, like other matters within the province of the executive sovereignty, the power of appointing and sending ambassadors has been vested in the subordinate executive, as it was to the viceroys of Naples and the Governor-Generals of the Spanish Governor-General of the Netherlands. It belongs to every power which has the right of making war and peace, and accordingly is possessed by the East India Company, and the provinces of the Dutch Republic. The several states which have previously risen to importance, although independent of one another, were yet bound together by numerous ties, and with the progress of commerce and civilization, the intercourse between them became so great, and their interests so complicated, that it was found expedient for them to keep up a more regular communication; and with this view it became customary for one power to have its ambassador residing constantly at the court of another.

Among the ordinary functions of an ambassador, the following are the most important: 1st, to conduct negotiations on behalf of his country;—the extent of his authority in this respect is marked and limited by the power which he has been invested with by his government. He has no authority to conclude any engagement definitively, the treaty which he has negotiated having no binding power, till it has been formally ratified by his government; 2ndly, to watch over the accomplishment of all existing engagements; and 3dly, to take care generally that nothing is done within the territories of the state, nor any treaty entered into with other powers, by which the honour or interests of his country can be affected, without informing his government of such measures.

Besides these public functions, an ambassador has certain duties to perform towards private individuals of his own nation: such as, to provide them with passports; to present them at court, if they produce the requisite testimonials; to protect them from violence and injustice; and if any wrong has been done, or if justice has been refused to them, to exert himself to obtain redress, and to secure for them the full benefit of the laws; and, lastly, to assist them in maintaining their rights in courts of justice, as well by certifying what is the law of his country upon the particular point, as by giving them the advice and assistance which is usually confined in practice to such as have been previously authenticated at the foreign-office of his own government, and thence transmitted to him.

The third privilege of ambassadors, arising out of the right of communicating by means of ambassadors, implies on the part of the state to which such communications are made, certain corresponding duties. [See Grotius on the Law of War and Peace, Book ii. c. 15.]

The first of these is that of receiving the ambassadors sent to it. This is a duty, however, which exists only between nations at peace with each; for, in time of war, a hostile power cannot claim to have its ambassadors received, unless they are provided with a safe-conduct or passport, to discharge them from the penalty of an unjust reception. And in order to claim the performance of this duty, it is, in all cases, requisite that the ambassador should be provided with the proofs of his authority; these are contained in an instrument, called his Letters of Credence, or Credentials, addressed to the head of the state to which he is sent. [See Credentials.]

A refusal to receive an ambassador properly accredited, if made without sufficient cause, is considered a gross insult to the person that he represents. But if one of several powers for the sovereigns of those countries, or if a province which has revolted and asserts its independence, claims to send an ambassador, a government, so far from being bound to receive the person so sent, cannot do so without thereby taking upon itself the responsibility and recognizing the competitor in the one case to be actually the sovereign, and the revolted province in the other to be actually independent. Though this may be the general principle, the practice is somewhat different. In such cases, consuls are generally first sent; and when a de facto power has been established for some time, governments think themselves justified in following up these consuls by ministers, even though the mother country, to which the revolted states belong, may not have recognised their independence. This was done by the British government and others in the case of the South American states, whose independence Spain has not yet recognised.

It is said that a government will be justified in refusing to receive an ambassador, if he is personally disagreeable to the state, or of a notoriously bad character. But it is generally done, in order to avoid such a refusal, to inform the court beforehand of the person intended to be sent. Every government, it is also said, has a right to make general rules respecting the class of persons whom it chooses to admit; but every court would itself aggrieve and insult the refusal of the ambassador it has appointed, except on specific and satisfactory grounds. There is nothing, for instance, in the general law of nations to prevent a man's being accredited by a foreign power to the government of his own country; and in this case he is clothed, so far as his character as an ambassador is concerned, with precisely the same rights as if he were a member of the state by which he is employed. But any government may, by a general regulation, refuse to admit, as France and Sweden, in fact, do, any of its own subjects as the representative of an independent state.

The next great duty of a state, with respect to ambassadors sent to it, is to protect them from every thing which may in any degree interfere with the due performance of their engagements. An ambassador is entitled to a certain privilege, which has, from the earliest ages, been considered a high offence against the rights of nations; whether proceeding from the sovereign power itself, or from the unauthorised acts of individuals.

The Porte used to violate this right, by confining the ministers of any power it went to war with, in the Seven Towers, under the pretence of protecting them from popular outrage. The last minister shut up in the 'Seven Towers' was M. Hufnif, the envoy of the French government. Since the establishment of the foreign-office in Turkey, but more from their weakness and fears, the practice has dropped, and is not likely to be renewed.

The second essential privilege of an ambassador is, that no legal process shall be brought against him in any country, so much of his property, at least, as is connected with his official character, such as his furniture, equipages, &c. [See Supemacreecho de jero Legatorum.] This privilege is analogous, and in some degree subsidiary to the former; for it would be of little avail to protect an ambassador from open outrage, if he were liable to be harassed by legal proceedings, which, if instituted (as it is always possible they should be) without foundation, would be only a cloak to violence, and even if well founded would interfere with the conduct of the state, for which he is sent, to which reason therefore, deemed not to be amenable for their conduct before any criminal tribunal of the country they reside in.

It must not, however, be supposed that they are at liberty to misconduct themselves with impunity. They are bound by the law of nations to respect the public order and safety of every country in which they reside; and if they commit any offence, the sovereign may claim of it to the government they represent; or, if the case is of a more serious nature, he may demand that they be recalled, or may, even in the case of the court, in case it requires that they be brought to trial in their own country. And if an ambassador is guilty of an offence which threatens the immediate safety of the state, not even the privilege of personal security will protect him from any degree of force which may be necessary to defeat his intentions: thus, if he engages in a conspiracy against the government, he may, if the circumstances require it, be put under arrest, in order to be sent home, and if he is found in arms joining in a rebellion, there is no doubt but that the principle of self-defence will justify his being treated as a rebel.
The same principle also extends to civil suits, and no claim can be enforced against an ambassador by any compulsory process whatever.

These privileges are not confined to the ambassador alone, but are extended to all his suite—his companions as they are sometimes called,—including not only the persons employed by him in diplomatic service, but his wife, chaplain, household, &c. The law of nations in this respect is fully recognized by the law of England. By the statute of 7 Anne, c. 12, all legal process against the person or goods of any ambassador, or of his domestic, or domestic servants, is declared to be void. The benefit of this Act may be claimed by any one who is actually in the domestic service of the ambassador, whether he is a British subject or a foreigner, provided the cause of action arises from the breach of the law; and it is not necessary that he should be resident in the ambassador's house. But if he takes a house, anew uses it for any other purpose besides that of residence—as if he lets part of it lodgings, his shop, or his house—to which end his goods are liable to be detained for parliamentary rates.

Whoever sues out or executes any process contrary to the provisions of the Act, is punishable at the discretion of the Lord Chancellor and the two chief justices, or any two of them, as a violation of the law of nations, and subject to the penalties of the public reprobation,—with this exception, however, that no one can be punished for arresting an ambassador's servant, unless the name of such servant be registered with the secretary of state, and by him transmitted to the sheriffs of the county or county in which he resides.

The third essential privilege of an ambassador is, that his residence enjoys a security similar to that of his person and property: it is not only protected from open outrage, but it is likewise exempted from being searched or ransacked, whether by law or by force, by any previous or inferior officer, under colour of legal process or of any description whatever.

This privilege has sometimes been construed to extend so far as to make the ambassador's residence an asylum to which any offender might flee and be out of the reach of the law. Such a construction has, in many cases, been in strict accordance with the spirit of the law, and is not only justifiable, but is necessary, in order to prevent the destruction of the composition of a new Ministry. If any of these three privileges are withdrawn, the ambassador can have recourse to a writ of habeas corpus, which is the ordinary remedy for a person held to answer for a public injury.

There are other privileges which, though not essential to the dignity of the ambassador, are yet generally enjoyed. The ambassadors of all nations are generally admitted to the public courts; and in many other cases the ambassador's privilege is considered as absolute. The ambassadors are, for instance, in all civilized countries allowed the free exercise of their religion; they are in general exempted from direct taxation; and they are usually allowed to import their goods without paying any custom-house duties; this last privilege, however, is extremely liable to abuse, and has sometimes been limited. At Madrid since the year 1814, and at St. Petersburg since 1817, ambassadors are allowed six months to import their goods free of customs, and after that time their exemption ceases. At Berlin, they are only allowed to import goods until the duties payable amount to a certain sum. If any violation has been offered to an ambassador, or any of his privileges have been infringed, although he may himself, if he chooses it, prosecute the offender, it is more usual for the demand to be made to the government, and it is their duty to bring the offender to punishment.

The title of ambassador, in the more limited sense of the word, as it is used in the public law of the present age, is confined to diplomatic ministers of the highest rank. Ambassadors are of several degrees; the rank of the several degrees is determined by the laws of the state to which the minister is accredited; their credentials are addressed immediately from their own sovereign to the sovereign to whom they are sent; with whom they are entitled to treat personally, without the intervention of his ministers,—in the same manner as if they were ministers of their own country. This is a right, however, which, at least in free states, where the ministers alone are responsible for the acts of the government, exists rather in name than in reality. The ambassadors, properly so called, are deemed to represent, not only the interests, but likewise the person and dignity of their master; but this representative character, as it is called, amounts in reality to little more than the enjoyment of certain marks of distinction; the principal of which is, that an ambassador is always styled Your Excellency, which was formerly the mode of addressing a sovereign prince; 2. That he has precedence next after Princes of the blood royal, &c.

Ambassadors are of two kinds—1. Those who reside regularly at the court at which they are accredited. In the United States, they are called Envoy Extraordinary and Minister Plenipotentiary, and are appointed on special occasions, either on missions of importance, as the negotiation of a treaty; or more frequently on some errand of state ceremony—such as to present a crown or a marriage: in which case the representatives of the several nations are of peculiar importance. The designation of Ambassadour Extraordinary was originally appropriated to those of the second kind (such as belonged to the first being styled Envoy or Ambassador), and leading up to the title of Envoy Extraordinary, being conferred more exalting, is usually bestowed even on those who are regularly resident. To the highest order of minister belong also the Legates and Nuncios of the Pope. [See Legate, Nuncio.]

The rank and dignity of the office of ambassador being attended with considerable expense, and having frequently occasioned embarrasments and disputes, it was found expedient to employ ministers under other denominations, who, though inferior in point of dignity, should be ennobled by equal power and authority. In many cases, all the lower orders of diplomatic agents are distinguished from ambassadors, properly so called, is, that they are representatives, not of the personal dignity of their sovereign, but only of his affairs and interests, in the same manner as a diplomatist in an ordinary country is principal. Diplomatic ministers of the second order receive their credentials (like ambassadors) immediately from their own sovereign. To this order belong envoy, ordinary and extraordinary, ministers plenipotentiary, the ministers who are accredited to the president of a republic, or a great or a little prince, who is styled interministerial, minister plenipotentiary. The distinction of ministers into those of the first and those of the second order began to prevail towards the end of the eighteenth century, and is said to have been originally invented by Louis XI. of France. [See Envoy, Minister.]

There is likewise a third order of diplomatic agents, which does not appear to have been recognized till toward the beginning of the eighteenth century. Those who belong to it are known by the title of Charge d'Affaires. They are generally accredited to resident ministers; but when a minister has not been appointed by his own country, the minister accredited is called, in the eyes of law, his representative, who is styled Charge d'Affaires to conduct in his absence the affairs of his mission. [See Charge d'Affaires.]

The third order may now be considered as subdivided into two: for at the Congress of Aix-la-Chapelle, in 1818, it was agreed between Austria, France, Great Britain, Prussia, and Russia, that their Resident Ministers at another courts should form, in respect of rank, an intermediate class between ministers of the second order and chargé d'affaires.

Considered in general reckoned among diplomatic ministers: in some particular cases, however, (such as that of the consuls-general sent to the semi-barbarous nations along some parts of the Mediterranean coast) having diplomatic duties to perform, they are accredited and treated as ministers, and hold an office in the government. It was long a disputed question, whether the smaller powers had a right to communicate by means of ministers of the highest order. It is now settled that this right belongs only to states enjoying royal honors,—with the exception of those, however, of whom it was deemed expedient to send ministers of the highest order to one another if they like it. But according to the practice of the present day it is only in the intercourse between the greater powers that such ministers are employed. The courts with which the minor government interchanges ambassadors, are those of Paris.
Vienne, St. Petersburg, Spain, Portugal, and Holland as it stood before the French revolution;—we also interchanged ambassadors with the kingdom of the Netherlands as long as it existed; and we are in the habit of sending ambassadors to Constantinople, but the sultan has no regular diplomatic minister resident in this country.

The rules relating to the ceremonial due to diplomatic ministers are laid down at great length by writers on the subject. The first thing to be done by a minister is to announce his arrival to the minister for foreign affairs. He is then endowed to an audience of the sovereign, either public or private. The right of demanding at all times, during his stay, a private audience, is the distinction and important privilege of an ambassador. Should his only chance of carrying a message depend on his having a private audience of the sovereign, it is sent in secret; and this might be thwarted by the sovereign's ministers, who would of right be present at the audience of any minister below the rank of ambassador. A minister plenipotentiary as well as an ambassador can claim a public audience. He then takes the southern coast of the Baltic Sea, where it is thrown up over to the minister for foreign affairs. Ministers and envoys also present their credentials to the sovereign in person.

After he has been presented to the sovereign, a minister visits the diplomatic body. The highest order pays his respects in person only to those of the same rank,—with ministers of a lower order he merely leaves his card. When an ambassador arrives at a court, all the diplomats there, who are not of his own rank, call on him.

Disputes have frequently arisen among ministers of the same rank about precedence. The rules by which it has at various times been endeavoured to settle the respective rank of the representatives of each state, being founded on no solid principle, and not sanctioned by general acceptancy, it is unnecessary to mention. A rule which has long been partially adopted, may now be considered fully established:—for at the congress of Vienna, in 1815, it was agreed by the eight powers which signed the treaty of Paris, that ministers in the highest order pay their respects in person only to those of the same rank,—with ministers of a lower order he merely leaves his card. When an ambassador arrives at a court, all the diplomats there, who are not of his own rank, call on him.

For further information on the subject of ambassador, he may consult Wicqufort, de L’Ambassadeur, Les Causes célèbres du droit des Genes, by C. De Martens, and the writers on the law of nations, particularly Vattel and G. F. Martens; and likewise the Cours de droit public by Pinelieu-Ferrera.

AMBER, a carbonaceous mineral which occurs in beds of lignite, in Greenland, Prussia, France, Switzerland, and some other countries. The greater part of it comes from the southern coast of the Baltic Sea, where it is thrown up between Königsberg and Memel. (Berzelius, Traité de Chimie, vi. 589.)

It is also stated (An. de Chimie, xvi. 215) that it is obtained by mining at a distance of 200 feet from the sea, and at a depth of about 15 feet, and is found in cavities. It is occasionally met with (Aikin’s Dict. of Chemistry, i. 57) in the gravel beds near London, in which case it is merely an alluvial product. Amber occurs generally in small pieces, which are sometimes colourless, but more frequently in a yellow, light-yellow, or deep-brown, and very commonly translucent; two large masses have, however, been found, one of them weighing upwards of thirteen pounds, and the other more than eighteen.

Amber is rather harder than common resins, which it resembles in several properties: it is susceptible of a good polish, and when rubbed becomes electrical; indeed the word electricity is derived from ἐλεκτρόος, the Greek name for amber. Its density varies from 1·003 to 1·070: when bruised it yields a loud, resonant sound; when heated to 446° Fahrenheit it melts, then inflames and burns with a bright flame, and emits a smell which is not disagreeable.

The subject of the origin of amber is one which has been much discussed. According to Berzelius (Chimie, vi. 589), it was originally a resin dissolved in a volatile oil or natural balsam; the proofs of this opinion are, he conceives, numerous; it has often the impression of the branches and bark upon which it has flowed and solidified; it often contains insects, some of which are so delicately formed, that they could not have occurred except in a very fluid mass. Dr. Brewster (Edinburgh Phil. Journal, iv. 332) concludes, from an examination of the optical properties of amber, that it is an indurated vegetable juice.

Of Amber consists of a mixture of several substances, which are, a volatile oil, two resins soluble in alcohol and in ether, succinic acid, and a bituminous body that resists the action of all solvents, and which is the principal part of amber.

Water does not act upon this substance; it does not even dissolve any of the succinic acid. Alcohol takes up a soft, yellow, limpid resin. Cold concentrated sulphuric acid dissolves amber; the solution has a brown colour, and when allowed to act, it liquefies the greater part of the amber is precipitated. Nitric acid converts it into a resinsous substance, and dissolves it totally.

When amber, in the state of fine powder, is boiled in a solution of potash or of the carbonate, a great quantity of succinic acid is obtained.

According to Dzierzys, the composition of amber is as follows:

<table>
<thead>
<tr>
<th>Substance</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon</td>
<td>80·59</td>
</tr>
<tr>
<td>Hydrogen</td>
<td>7·31</td>
</tr>
<tr>
<td>Oxygen</td>
<td>6·73</td>
</tr>
<tr>
<td>Ashes</td>
<td>3·27</td>
</tr>
<tr>
<td>Loss</td>
<td>2·10</td>
</tr>
</tbody>
</table>

The ashes consist of lime, silica, and alumina.

This analysis can only be considered as an approximation.

Amber is employed for ornamental purposes in the manufacture of necklaces, &c. It is used also for preparing ambre-essences, for obtaining a peculiar oil used in medicine, and it yields succinic acid employed in chemical investigations.

AMBERG, which derives its name from Stadt am Berge, or Town on the Mountain, is the capital of the circle of the Regen in Bavaria. It is a well-built and agreeable town, divided into two equal parts by the river Vils. Its public edifices consist of the handsome church of St. Martin, which is adorned with several fine monuments, a college once belonging to the Jesuits, an arsenal, guildhall, house of correction, court of appeal, lyceum, high school, seminary for the education of teachers, library, and cabinet of natural history. It has an extensive manufacture of arms, besides manufactures of earthenware, woollen cloth, tobacco, &c., and is the seat of a royal mint. The district contains mines in the neighbouring 'Iron-mountains,' which produce nearly 1400 tons of iron annually; and Amberg has some trade also in salt. It lies about forty miles east of Nuremberg; 11° 48' E. long. 49° 27' N. lat. The number of inhabitants is nearly 9000; in 1825 it was 7600.

AMBERGRIS, a substance of animal origin, found principally in warm climates, floating on the sea, or thrown on the coasts. The best comes from Madagascar, Surinam, and Java. It has been found in the intestinal canal of the baleen whales (Balaena macrophysa, see below), and is found in the intestines of various marine animals which have served it for food; on this account it has been supposed to be a morbid product, analogous to biliary calculus.

Ambergris of good quality is solid, opaque, of a bright grey colour, which is dark externally, and intermixed with yellow or reddish strite. When it is heated or rubbed, it exudes an odour which is agreeable to most persons. It is sufficiently soft to be flattened between the fingers. Its fracture is fine-grained, with traces of lamellar structure. The heat of the hand is sufficient to soften it. Its specific gravity varies from 0·908 to 0·920.

When ambergris is heated with boiling alcohol of specific gravity 0·933, until it is saturated, a peculiar substance, called ambrein, is obtained as the solution exists, grouped in lamellated, small, colourless crystals. The solution, by evaporation, yields a further portion of amberin, which may be rendered pure, by being.redissolved in alcohol, and then crystallized.

Ambrein, thus obtained, is brilliant, white, and insipid;
It has an agreeable odour, which appears, however, to be adventitious, because it is diminished by repeated crystallizations; by fusion or a long-continued gentle heat it acquires a resinous odour.

Rajpoot, in particular, as to its fusibility. Pelletier and Caventou found that it softened at 77° Fahrenheit, and melted at 86°; according to John it melts at about 100°, and at 112° flows like oil. When heated upon platinia foil it fuses, smokes, and is volatilized, leaving scarcely any residue; by dry distillation it becomes brown, leaves a little charcoal, but is collected in the receiver, without having suffered any other material change. It is very soluble in strong alcohol, either hot or cold, in ether, and in oils, both fixed and volatile. Nitric acid converts it into a peculiar acid, called ambroic acid; the caustic alkalies do not form soap with it.

According to Juch and Bouillon-Lagrange, benzoe acid exists in distilled ambergris; by the analysis of John, ambergris appears to be composed of ambrin 0°6, an extractive matter nearly equal to it, and benzoe acid 0°025; watery extract with benzoe acid and common salt 0°015; with 0°11 not accounted for.

Ambergris is used as a perfume; and as the alcoholic solution is the most odorous preparation of it, it is generally employed in that form.

AMBERT, a town in France, in the department of Puy de Dôme, on the river Dore, a feeder of the Allier. It is a place of considerable trade; the best cheesecakes of the province of Auvergne are exported from it, and it has considerable stores of wood destined for shipbuilding, especially of paper, which is considered to be among the best in France. The houses are built and the streets paved with the granite procured from the mountains to the east of the town. The population amounts to about 7000. The district, existing as a separate unit, the canton, is differently given, but it is probably about 31 or 32 miles.

It is the capital of an arrondissement containing a population of about 80,000, and comprising 486 square miles. A town, in the principality of the Juypoor in the Rajput states, in 28° 57' N. lat., and about 73° 40' E. long. This town was formerly the capital of the principality, but on the building of Jeypoor, by Mirza Raja Joyingshe, five miles south of Amherst, the seat of government was removed to the new city, which gave its name to the principality.

Amber is built on the margin of a small lake, and is surrounded on all sides by mountains, which give a considerable degree of romantic beauty to the spot. A palace built on the eastern precipice overlooking the town and the lake, is partly inhabited by the Rajahs, is in good preservation. It was furnished with fountains, balconies, and terraces, and contained numerous apartments of all dimensions, some of which are still exceedingly beautiful. It is remarkable that the most of the stains have been used by Rajahs for ornament. This palace is now employed as a state prison.

A small island in the lake is cultivated as a royal garden. A great part of what were once magnificent buildings within the city, are in a ruinous state, and Amherst is now near inhabited. Hence, and probably remains to know that it must once have been a splendid place. (Hamilton's East Indies Gazetteer.)

AMBOISE, a town in France, in the department of Indre et Loire, on the south or left bank of the Loire, between Tours and Orléans, is a place of historical recollections. In the castle of Amboise, built by Charles VII., Louis XI. instituted, in 1469, the order of St. Michael. Charles VIII., his successor, was born and died in the same edifice, and to Amboise, in 1560, the Duke of Guise removed Francis II., and defeated the plot which the Prince of Condé and the leading Huguenots had formed. Part of this castle remains; it is on a steep rock, washed by the Loire, which is here parted into two streams by a small island. From the top of one of the towers a view is had of the Loire, of the neighbouring rivers, and of the Garden of France. The town is surrounded by vineyards. It is ill-built, but has a good bridge over the Loire, finished in 1522. The inhabitants amount to between five and six thousand, and earn on some manufactures, particularly of steel and flax; the latter are in great request.

Amboise is 22 miles W.S.W. of Blois, 15 E. of Tours, and 127 S.W. of Paris.

AMBOISE, (CARDINAL GEORGES D.) an eminent architect, ecclesiastic, and statesman. He was born in 1486 at the chateau de Chaumont on the Loire, the seat of his family, which was one of the most illustrious in France. Being a younger son he was educated for the church, and was made Bishop of Montauban by the time he had attained the age of fifteen. He was afterwards consecrated by his uncle, Cardinal Louis, who made him his almoner. After the death of this prince, however, in 1483, having connected himself with the Duke of Orleans, who unsuccessfully disputed the regency with Anne of Beaujean, he shared the misfortunes of his party, and was along with the duke himself put to death. It is even said that some part of the finement, from which he was not released till six or seven years after, when the new king, Charles VIII., attained his majority. Soon after being restored to liberty he was promised to the archbishopric of Narbonne, which, in 1493, he espoused. Being charged for that of Rouen, the bishopric of Orleans, he held the office of governor of Normandy, and in that capacity introduced several valuable reforms into the administration of the province. In 1498 the duke became king by the loss of Louis XI., and from that time Amboise may be considered as prime minister of France. The memorable events of the reign of Louis XII. are connected with the assertion of his rights to the duchy of Milan, and the protracted war which he carried on in Italy to maintain that claim. In this matter Amboise was one of the ministers that Louis acted rather according to his own views than by the advice of his minister; but he seems to have intrusted to the latter almost the entire management of the domestic affairs of his kingdom. In this department D'Ambois displayed a most extraordinary activity, and besides presenting the king with the mountain of the Orsou, he was also engaged in introducing various regulations, with a view to diminish the length of processes in the former, and by his example as well as by his authority disinclining the seigneurial rapacity of the higher order of ecclesiastics. He never showed any such inclination to the archbishopric; and even the greater part of his episcopal revenue he distributed among the poor, or devoted to pious purposes. With all this moderation, however, it is evident that the more common objects of human nature were far from being without ambition. Very soon after the accession of Louis XII. he had obtained a cardinal's hat, and subsequently the pope appointed him to the high office of legate. But on the death of the infamous Alexander VI., in 1503, it appeared that the character of the archbishop, which he had desired to occupy. He failed, however, in the object through a piece of mismanagement, which made him at the time very much laughed at, though it was only discreditable to him as a politician. A large military force of the French and the Emperor being assembled with the object of placing his son on the throne, the cardinal, to the exposing attitude he might easily have controlled the election; but the Cardinal de la Ravère having suggested to him that such a mode of securing his object would both have a bad look, and was moreover quite unnecessary, insomuch as he would most certainly have been chosen, he left the matter to the free voices of the concave, followed this crafty advice, and withdrew the troops. The result was that in a few weeks the Cardinal de la Ravère was pope himself, with the title of Julius II. No other vacant succession was so happily filled; and D'Amboise, who died in the convent of the Celestines at Lyons, on the 25th of May, 1510. It is said that, on his death-bed, he expressed some of his vanity of the worldly honours which he had sought so anxiously during his life, saying, as his chamberlain, 'Brother John! ah, why have I not all my life been brother John?' He was buried in the cathedral of Rouen, where his mausoleum is still to be seen. Notwithstanding some faults and weaknesses, D'Amboise was undoubtedly a great minister, and the like of him would be hard to find. Francis I., called him 'Brother John!' not only because of his name, but because of his strong faith that they used affectionately to call him the people's father. Most of the accounts of his life that have appeared in France are written in the most passionate style. One, by an author who calls himself the Sinus des Montagnes, written in 1520, and printed in 1581, contains with the most honest avowal of a partial intention which we recollect to have met with in any historian; 'My design,' says this writer, 'is no other than, according to my custom, to take up the cause of the king, to defend his ministers, and throughout to pay re-
spect to those to whom we are naturally bound by their rank and dignity, in conformity with the commandment of God to reverence the superior powers. There is another work, entitled A History of the Administration of the Cardinal D'Amboise, by the Sieur Michel Baudier, historiographer to his majesty, published in 1600, at Paris in 1618. The character in which may be likewise judged of from its first sentence: 'Beloved country,' excludes the learned historiographer royal, 'mother of kingdoms, companion of the empire, vast and precious heritage of the greatest kings of the earth; beloved France, all her lofty spires, her verdant plains, her valiant men, whom you have preferred your glory to that of the monarchical circles which surround you, and have raised your praises as far above theirs as the height of the lofty pines surpasses the lowliness of the little shrub.' Mündler then proceeds to characterise the inhabitants of France, to whom you are allied and finally enters upon the proper subject of his book, by describing the cardinal as the first of Frenchmen. The letters of Louis XII and the Cardinal D'Amboise were published at Brussels in four volumes 8vo., by Jean Godfrey, in 1718.

AMBOOY, a neat and regularly built town of the Caramatic province, in the south of India, situated in 12° 49' N. lat., and 78° 46' E. longitude. It stands within a range of hills of moderate elevation. The river Palar, or Milk river, passes from south to east through the town, and falls into the bay of Bengal, about 50 miles S.W. of Madras.

Amboo was formerly a place of considerable strength, having a lofty isolated mountain at its side on which a fort was built, so difficult of approach as to be considered almost impregnable. In the year 1604, the company in possession of the East India Company, the works of this fort have been partially destroyed; the part which remains is now used as a place of confinement for criminals.

The neighbouring territory is very productive. It is watered by numerous small streams which run from the river Palar along the heights, and are employed for irrigating rice-fields, and tobacco-plantations. A great number of date trees are cultivated which yield a considerable quantity of coarse sugar. Many of the inhabitants are employed in tending and melting the sugar. It is a considerable sugar. Amboo is 108 miles W.S.W. from Madras. (Asiatic Researches.—Hamilton's East India Gazetteer.)

AMBOYNA is one of the Molucca, or spice Islands, in the eastern seas, lying off the south-west coast of the larger island of Ceram. The length of Amboyna is about thirty-two miles, and its average breadth ten miles. Its south-west coast is indented by a bay so deep, that the island is nearly divided by it into two unequal limbs, which are connected at the head of a strait. In the middle of this strait is an islet into which the island is thus divided, called Hitoe and Leytinor; the former lies to the north-west, and comprises full two-thirds of the surface of the island. In 1683 the Dutch governor attempted to cut through the isthmus, which is called with a contemptuous flout, 'the neck of the inscription' or 'the neck of the chain,' so as to secure a direct communication with the small islands of Ssapuru, Oma, and Harocha. Vessels which trade between the town of Amboyna and these islands are now obliged to pass down the bay of Amboyna and round one or other of the peninsulas. The construction of the necessary channel would have been much facilitated by the existence of a little river called Matta Passo, or the Eye of the Pass, and considerable progress had been made towards its completion, when it was stopped through the superstitious fears of the natives.

Bay of Amboyna is from 40 to 150 miles long from land to land ; its breadth varies considerably; in some parts it is not more than a Dutch mile across.

Amboyna is a mountainous place, abundantly furnished with trees and underwood. The coast on the northern part of the island is so considerable, that the great naturalist Rumphius is said to have possessed a cabinet inlaid with specimens of 400 different kinds. Notwithstanding this, the quantity of building timber is so small, that importation must be depended upon to supply the deficiency. The timber commonly known as Amboyna wood, is principally procured from Ceram. The soil is for the most part a reddish clay; in the valleys it is of a darker colour, and mixed with sand. Sulphur is produced among the hills, some of which are en-closed in cavities in the surface of the island, and which are considered healthy, notwithstanding the great heat of the climate. It is remarkable that to the eastward of the 180th degree of longitude, the monsoons are directly the reverse of what are experienced to the westward of that line, so that the weather is fine and dry on the east-coast of Celebes, in the Moluccas and the adjacent islands, when the contrary state prevails at Sumbawa, Lombok, Java, and Borneo. On the other hand, it is dry in these islands, while the Moluccas are deluged with rain, which at those seasons is heaviest in Amboyna, the nearest rivulet of which swells into mighty torrents, which overflow their channels, and beat down every thing that opposes their progress. It is only at such seasons that Amboyna can be said to have any rivers: at other times the streams are not deserving of the name. In 1620, it was the custom of A. J. Brahe, the East-Indian Gedin, or Elephant's River, which rises in the mountains of Leytinor and discharge themselves into the sea near the town, are not more than from two to three feet deep during the dry season.

The earliest visit made to Amboyna by any European was in 1611, when the Portuguese viceroy, Albuquerque, despatched a squadron from Malacca, which returned with a lading of spices, having been received with kindness by the natives. Ten years afterwards a squadron of Portuguese renunciation made from Retimo to cast its first rays on the island in the name of the King of Portugal. The commander established himself in the Island of Ternate as his headquarters, and the dominion of the Portuguese over the Moluccas continued for sixty years, during which time the natives endured from them every species of tyranny and cruelty.

At the commencement of the seventeenth century, these islands were taken from the Portuguese by the Dutch, their conquest being facilitated by the inactivity and decay of their rivals. The first English expedition under Sir Thomas Cavendish in 1590, obtained a small share of the trade. Unhappily, the change of masters brought with it no change for the better in the condition of the people, who were subjected to every kind of injustice which the capricious Dutch rulers could suggest. At a later period, the two or three hundred inhabitants of Amboyna were continually in arms, and the country became the constant scene of strife and desolation.

At a very early period after its first formation, the English East India Company endeavoured to appropriate to itself a share of the trade in the spices, and in 1649, the Company sent out a second expedition, consisting of four ships, under the command of Sir Henry Middleton, one of which ships obtained a lading of cloves at Amboyna. In 1612, the Company formed a settlement at Cambeilo in this island, from which the settlers were forced to retire by the exception of Amboyna. The attempt was made to accommodate the dispute between the English Company and the Dutch, relative to the right of trading with the Spice Islands, and a treaty for this purpose was concluded in London, in July, 1619. But many disagreements arose out of the terms of this treaty; it was found, that the grounds of contention appear to have been multiplied rather than reduced, and at length reached such a point, that under the accusation of conspiring to surprise the garrison, and expel the Dutch from the island, Jervoise, the Company's captain, and nine men more, the Japanese, and a Portuguese sailor, were seized at Amboyna, tried, pronounced guilty, and executed. This event, known as 'the massacre of Amboyna,' excited the greatest indignation in England, and became the subject of the most formal representations on the part of the British government.

During the war with Holland, in 1796, Amboyna was captured by a British force under Admiral Rainer. It was restored at the peace in 1801, was taken again by the English in 1808, and given back to the French in 1814. While the English retained possession of the island, the East India Company was not unmindful of the moral improvement of the natives. It furnished the means for establishing upwards of forty schools, and granting 15,000 rupees to assist in publishing a version of the Bible in the Malay language.

The main object of the different European powers, who endeavoured to possess themselves of the Moluccas, was to gain a footing in the spice trade, on the cultivation of which spice forms the principal object of industry with the natives. With the desire of keeping the cultivation of the clove-tree completely within their power, the Dutch caused it to be exterminated from every island on which they produced, as a sufficient production of the spice, by obliging every native family to rear a certain number of clove-trees. In the prosecution of their plans, the island was divided into 4000 allotments, each of which was expected to support 166 trees, and a law was passed in 1786,
rendering it compulsory upon the natives to make up the full complement. The number of trees upon the island accordingly amounted to 500,000, the average produce of which exceeded one million of pounds of cotton annually. The wild pear, whence the medicinal oil of that name is procured, grows in Ambonya, which also produces all the vegetables and fruits commonly found in that quarter of the globe. The woods contain great numbers of deer and wild hogs, and those of which forms the principal article of food with the natives. Buffaloes, cows, horses, sheep, and goats, have been introduced by the Portuguese and Dutch from Java and Celebes. The Bay of Ambonya formerly abounded with fish of all the kinds usually found in the eastern seas; but it is said that since the earthquake which occurred in 1754, their number has been very greatly diminished.

Ambonya is inhabited by four different races of people, the Aborigines, the Ambonyen, Chinese, and Europeans. The first of these races, called Hororobis, are, according to some accounts, a wild and savage race, possessing a great deal of muscular strength, and every disposition to use it to the annoyance of the other inhabitants. Their numbers are now much reduced. The Ambonyen are of Melanesian origin, on the island when the Portuguese first landed there. At present the Ambonyen are an indolent inefficient race: the greater part of them profess the religion of Mohammed; a few have been converted to the Christian faith, partly by the Portuguese, partly by the Dutch. The Chinese settled at Ambonya are not numerous; but they are very industrious and enterprising traders. Still fewer are the European race of inhabitants. They are principally Dutch, and the descendents of Dutchmen, many of them being the offspring of Ambonyen mothers.

The town of Ambonya, which is in 3° 40' S. lat., and 128° 15' E. long., is built within the bay, in the peninsula of Leytorn. It is clean, neat, and built with regularity. The houses are of brick, mostly high, and the streets are covered with intersected branches and leaves of palm trees. The town contains an hospital, a town-house, and two churches, in one of which service is performed in the Malay language. The western quarter of the town is inhabited immediately by the Europeans, who occupy the street near which is the burial-place of Rumphius. Fort Victoria in the front of the town is, in form, an irregular hexagon, with a ditch and covered way on the land-side, and a horn-work towards the sea. (Crawford's History of the Indian Archipelago; Mill's History of British India; Porter's Tropical Agriculturist; and Reports of the House of Commons on the Affairs of India. Wilcock's Translation of Stavolinius's Voyages. For the rest of the islands of this group, see next article.)

AMBROSE (SAINT) was born, some of his biographers state, in the year 333, but more probably about 340. His family had long been one of distinction in Rome; and his father, whose name was also Ambrosius, held the high office of Satrius, and was hence entitled by his birth and name, and probably in the town of Trier or Treves, then called Augusta Treverorum, which was the principal seat of the prefecture. He was educated at Rome under the ablest masters; after which, he and his brother Saturus proceeded, with the view of following the legal profession, to Milan, then the residence of the court, and as such considered the capital of the western empire. Ambrose soon acquired distinction at the bar; and this, with the interest of his family, introduced him to civil honors. While he was young and unmarried, he was appointed governor of Ligeria, the province to which the city of Milan then belonged. In this office he conducted himself in such a manner, as to secure at once the approbation of the superior and of the town, and attach to him an army of the people. Thus situated, he had reached his thirty-fourth year, when suddenly changed the entire course of his life. In A.D. 374, died Auxentius, the Archbishop of Milan, on which, a violent contest and contention ensued between the two great parties which thus distracted the church—the Orthodoxy and the Arians. On the day when the election was to take place, the ferment was so violent, that Ambrose was induced to try what could be done to allay it by his influence with the people; and having accordingly presented himself before them, he addressed them in a speech, recommending the observance of greater order and decorum. His speech was well received, for Ambrose excelled in the art of popular persuasion; and as he himself had concluded, a little by little, of the crowd, called aloud, Ambrosius Episcopus! (Ambrose Bishop.) In that age, and especially in such a state of excitement, these words were deemed a direct intimation from heaven; and, being instantly taken up by a thousand other voices, the unanimous resolution that Ambrose should be placed in the vacant office. From the subsequent conduct of Ambrose, some suspicion arises that the whole was partly a scheme of his own. He professed the utmost reluctance to accept a dignity which he considered a profane and sacrilegious thing; but, being resolved, as related on the unexceptionable authority of his secretary Paulinus, with the view of making it appear that he wished the people to alter their choice, were not a little extraordinary. He even ran away for a time, as is said; having walked, for some hours, he found to his surprise that he had only got back again to one of the city gates. He was, however, at last prevailed upon, by the express command of the emperor, to mount the episcopal throne. As he was about to do so, he suddenly recollected his baptism, and resolved never to take place; and he was actually consecrated on the eighth day after undergoing that rite.

The extraordinary piety and zeal of the new archbishop soon rendered him the wonder of the church. Females, in accounts, and sold, actuated by the fanaticism of the age, used to come in great numbers from every quarter of the Christian world to receive the veil from his hands. But, in addition to his pastoral and other sacred labors, he frequently acted in the capacities of a writer of the times. For a tolerably full, and, upon the whole, not an unfair account of this part of his career, the reader may consult the twenty-seventh and twenty-eighth chapters of Gibbon. While he lived, he was consulted on great emergencies, both by Theodosius, the last of the Emperors of the East, by Valentinian II., the western emperor, and even by the mother of the latter, the empress Justina, notwithstanding her attachment to the Arian heresy, of which Ambrose was the most determined opponent. The emperor particularly wished that Ambrose should be consecrated two, or at least one, of the Milan churches to the use of the Arians; but this demand the bishop pertinaciously resisted; and as he was supported in his opposition by the people, whose violence, he remarked, he had not excites, but could. As Governor of the church, he has also been retained in the church of England liturgy. But it is now allowed by the Roman Catholic critics themselves, that the Te Deum Laudamus is of an age considerably later than that of Ambrose. Ambrose, in his thirty-seventh year, was consecrated by the name of Justina, on an embassy to the rebel Maximus, who disputed the empire with the sons of Valentinian; the first time, soon after the murder of Gratian at Lyons, on the 23rd of August, 383, when, after remaining at Treves for above a year, he prevailed upon Maximus to forego his intention of invading Italy. The second attempt of the same kind, made some years later, was not attended with the same success; but the career of Maximus was soon after terminated by the victorious arms of Theodosius. This celebrated emperor of the East, which he was, on the death of his successor, between the two great parties which then distracted the church—the Orthodoxy and the Arians. On the day when the election was to take place, the ferment was so violent, that Ambrose was induced to try what could be done to allay it by his influence with the people; and having accordingly presented himself before them, he addressed them in a speech, recommending the observance of
direct or powerfully influence the affairs of the time. To a knowledge and skill in the practice of the arts by which the common mind is won, such a one might have united great energy, unfaltering devotion to their objects, and very frequently not much scrupulosity as to the means of attaining them. Of this last-mentioned qualification, as well as of the others, Ambrose possessed far from an inconsiderable share, as might be easily shown by a more minute examination of his life than it has here been possible to attempt. Persons of this description, however, being usually distinguished by greater vigour of the active than of the speculative faculties, have seldom left much behind them, of which we believe they would have been able to avail themselves during influence over the opinions and conduct of mankind. And so it was with the subject of the present article. Ambrose, says Gibbon, "could act better than he could write." Ambrosian Libraries have destined to taste or genius; without the spirit of Tertullian, the copious elegance of Lactantius, the lively wit of Jerom, or the grave energy of Augustin." The best edition of the works of St. Ambrose is that published in two volumes folio, Paris, 1846 and 1847, by the Bibliothèque de l'Institut, and contains the works of the brothers J. Frische and N. Le Noury were the editors. The first piece in this collection is a treatise in six books, entitled Hexaemeron, being an account of the creation. It is said to be in the greater part translated or pillaged from a work of St. Eucher of Lyons, whose authorship was by no means certain. Things from Pliny and other sources, and some that are either the author's own, or have been taken from older works that are now lost. It is rather a curious production, considered as illustrative of the state of natural knowledge in the fourth century. The influence of the influence of the performances is reputed to be his treatise in three books, De Officiis Ministrorum. Of his other treatises many are written in recommendation of his favourite moral virtue, celerity. Upon the history of the Benedictine collection containing the De Virginitate, one De Vidae, one De Virginitate, one De Institutione Virginis, one entitled Euhoritatis Virginis, and one De Lapes Virginis Consecratae. Many of Ambrose's letters have also been preserved; and the life of St. Ambrose is that of secret and private interest. He is in the Ambrosian Library, and is still among savage nations; in modern times it does not appear to be thought much of, for we do not find any particular stress laid upon it in works upon the military art.

AMBROSIAN LIBRARY at Milan. The Ambrosian Library owes its existence to the munificence of Amadeus, bishop of Milan. He laid the foundation of it in 1602, and it was opened to the public in 1609. Its name was given in memory of St. Ambrose, archbishop and patron saint of Milan. Frederick Borromeo not only placed his books and library at the disposal of Ambrose, Anthony Oggiati, into different countries to purchase additions. Montfaucon assures us that numerous manuscripts were obtained for it from Thessaly, Chios, Corcyra, and Magna Græca; the founder added to it a considerable number of valuable manuscripts of the monastery of Bobbio (anciently Bobium), in the northernmost Apennines, together with a considerable assemblage of manuscripts from the Pinelli collection; the latter cost no less than three thousand four hundred ducats. It was first preserved by the memory of Ambrose, and then by his library a college of sixteen learned men; but the want of funds reduced the number to four; of these, one translated Greek, a second taught Hebrew, a third Arabic, and a fourth was to make collections of whatever was valuable in authors of the Ambrosian Library. One volume of this collection was returned to the library after the Peace of Paris in 1814, but the remaining volumes, having been sent to the library of the Institute and not to the Bibliothèque du Roi, it was not at the time of the declaration known were they, and it is supposed that they have since then been removed, or destroyed during influence over the opinions and conduct of mankind. And so it was with the subject of the present article. Ambrose, says Gibbon, "could act better than he could write." Ambrosian Libraries have destined to taste or genius; without the spirit of Tertullian, the copious elegance of Lactantius, the lively wit of Jerom, or the grave energy of Augustin." The best edition of the works of St. Ambrose is that published in two volumes folio, Paris, 1846 and 1847, by the Bibliothèque de l'Institut, and contains the works of the brothers J. Frische and N. Le Noury were the editors. The first piece in this collection is a treatise in six books, entitled Hexaemeron, being an account of the creation. It is said to be in the greater part translated or pillaged from a work of St. Eucher of Lyons, whose authorship was by no means certain. Things from Pliny and other sources, and some that are either the author's own, or have been taken from older works that are now lost. It is rather a curious production, considered as illustrative of the state of natural knowledge in the fourth century. The influence of the influence of the performances is reputed to be his treatise in three books, De Officiis Ministrorum. Of his other treatises many are written in recommendation of his favourite moral virtue, celerity. Upon the history of the Benedictine collection containing the De Virginitate, one De Vidae, one De Virginitate, one De Institutione Virginis, one entitled Euhoritatis Virginis, and one De Lapes Virginis Consecratae. Many of Ambrose's letters have also been preserved; and the life of St. Ambrose is that of secret and private interest. He is in the Ambrosian Library, and is still among savage nations; in modern times it does not appear to be thought much of, for we do not find any particular stress laid upon it in works upon the military art.

AMBSCADE, a military term, derived from the Italian imboscata, something hidden in a wood. The older English word ambushe, is the same word, the analogy of which would lead to the conclusion that it is more correctly rendered with, as imboup, as in impound, immerse, impress, &c. It signifies one who is to lie in wait for and attack an enemy, without his perceiving the intention until he is attacked. In antient times before the art of war was so complicated as at present, this manœuvre was only considered as a common sort of ambush, and is so still among savage nations; in modern times it does not appear to be thought much of, for we do not find any particular stress laid upon it in works upon the military art.

AMBULANCE (from ambulare, to walk or march), a French word applied to the moving hospitals, which are attached to every French army or division of an army, for the purpose of rendering immediate assistance to sick or wounded soldiers. In every European army surgical and medical aid has long been provided with more or less care, but is chiefly furnished by officers and the surgeons. In France, (especially the celebrated Largy,) during the wars of Napoleon, that great improvements have been generally introduced into this important department; and that the wounded and exhausted, instead of being neglected or left to chance relief, are sought out with the utmost promptitude, and carefully removed to the ambulance, which is placed out of the reach of the enemy's fire.

AMBULATORY, in a substantive sense, a place to walk in. With reference to its use in the cathedral church, it may be said to be enclosed by a colonnade or an arcade. In the peripteral temple of the Greeks, the lateral or flanking porches are properly termed ambulatores; the cloister of a monastery is surrounded by an ambulatory or ambulatores. In the cathedral church, from the colonnades of the terrace of the Bourse or Exchange at Paris afford a modern exemplification; and of the latter, or internal arcade ambulatory, there can be no better than that afforded by the Royal Exchange in London, or, more generally, any of those which are attached to later architectural works, the cathedral, or other large church, are sometimes called ambulatores.

In an adjectival sense, ambulatory may be applied to any thing, the functions of which require to be taken place at once. Formerly the Parliament and the Court of King's Bench in this country were termed ambulatory courts, because they were held sometimes in one place, and sometimes in another; indeed, wherever the king happened to be.

No. 54.—Supplement.

Ambulatory is formed from the Latin word signifying to walk.

AMEL, or KARA AMID, (Black Amid,) a town of Mesopotamia, called Diarrheer by the Arabs.

AMELAND, a small island belonging to the Dutch province of Friesland; it is 15 miles long, and is about twelve miles wide. It contains some good pasture land; some of the inhabitants make lime of the sea-shells found on the coast, and many of them are fishermen. The population is about 3000.

AMEL is one of that series of islands which extend along the coast from the extreme point of North Holland, and once formed a part of the main land from which they have been detached by the violence of the wave. (See Zuider-See.)

The passage between Ameland and the Frisian islands is dangerous from its shoals. The channel is called a saette or ford.

AMELOT DE LA HOUSAYE, (ABRAHAM NICOLAS,) a political writer, was born at Orleans, in 1634. He accompanied the President of St. Andre, appointed ambassa dor of France at Venice, in 1669, as secretary. A stay of several years in that city having enabled him to become acquainted with its history and politics, probably induced him to translate Vellerus's History of the Government of Venice, and to add historical and political notes, which, at the request of the government, were inserted. The book, rendered such offence, that, it is said, a formal complaint was made to Louis XIV., who sent Amelot to the Bastille. No other particulars of Amelot's life are recorded; all that is known is that he was executed, if ever he existed, on the 10th of June, 1706. He died at Paris in 1706.

He left the following works:—Sarpis's History of the Council of Trent, translated from Newton's Latin version;—The Courtier, translated from the Spanish—The Prince, translated from Machiavelli; he endeavoured also to vindicate the author, by maintaining that he had only described what princes do, and not what they ought to do—a translation of Tucitus, with historical and political notes; he did not complete this work; the six last volumes are styled by the translator, Historical, the second volume, Critical, and Literary: this work is also incomplete; it is arranged alphabetically, but does not go beyond half the letters. There are also some other works of no great interest, of which a list is given in Memoires de Meneon, vol. x.

AMEN, a Hebrew word, properly signifying 'firmness,' and hence 'truth,' which has been adopted without alteration in various languages.

Its most frequent use is at the conclusion of prayers; to which it is sometimes annexed, where it is understood to express belief, assent, and concurrence in what has been expressed. Examples of its use in all these cases are numerous in the Bible. When the priest has declared to the woman suspected of adultery the effect of the water of jugh, if she still answers, 'Amen,' v. 22. When curses are pronounced against the wicked in Deut. xxvii. 15, all the people are ordered to repeat amen.

The word amen concludes all the gospels, and almost all the epistles; it is repeated at the end of four of the five sections of the Psalms according to the division of the Jews; namely, the 41st, the 72nd, the 89th, and the 106th Psalms; in this last Psalm it is followed by hallelujah, which word concludes the last section.

In many churches in England, the word amen is pronounced after every prayer: this was the ancient practice of the Christian world, and St. Jerome relates, that when the congregated people at Rome pronounced amen, the sound was like that of a clap of thunder. They possibly attributed greater force to the loudness of the Amen, after the example of the Jews, who imagined that this word, shouted forth with great force, had power to open the gates of heaven.

Amen is often used by our Saviour at the beginning of a discourse, as an expressive particle, which in our version is rendered 'verily.' In the Gospel of St. John the word is always repeated.

In one instance this word is used as an adjective, meaning certain, fixed. 'For all the promises of God in him are yea, and in him amen,' 2 Cor. i. 20. In one other instance the word denotes our Saviour. 'These things saith the Amev.' Rev. iii. 14.

AMENDE HONORABLE. Amende in French is a penalty, so called from being regarded as a compensation for, or rectification and amendment of, the offence. Accord ing to the old laws of France, persons guilty of crimes coming under the head of public scandal, such as sedition, sacrilege, fraudulent bankruptcy, &c., used often to be con demned, sometimes as their whole punishment, and some times only as part of it, to negligence of their profession and guilt. This was called making the amende honorable, which was either simple, or in firmitis, in which last case the culprit was conducted by the public executioner into court open in court, with a rope about his neck, and a lighted torch in his hand, and in that state must stand until the rope. The amende honorable was accounted an infamous punishment, and appears to have been so called as consisting altogether in the disgrace, and not in any fine or other actual suffering. It was considered a more honorary penalty, and called honor of the Latin nuclidean, and were also sometimes wont to order a person by whom the reputation or honour of another had been injured to make a public acknowledgment of the wrong; and such a sentence carried no infamy with it. It is from this latter reason that the expression of the punishment has been bawed, according to which we say that a person makes the amende honorable when he publicly admits any wrong which he feels that he has done to another person.

AMENDMENT, in Law, this word is frequently used in the written records of judicial proceedings. In early periods of the history of English law, the pleadings between the parties were conducted orally, or or tenus, as it was technically called, at the bar of the court by their respective advocates, and amends. If, in a suit, in the pleadings of either party, it was corrected at once upon a suggestion made to the court. Subsequently, when pleading or tenus was superseded by the present practice of delivering written pleadings from one contending party or his attorney to the other, it was considered reasonable and convenient to continue the same indulgence to amendments. Hence it has been usual at all times for the courts, upon application made by either party, to amend the interlocutory proceedings in a cause; and at the present day, the courts will often amend the pleadings of a party, or his attorney, upon suggestion made to the court. Hence the judges of the different courts have always considered that they had no authority by the common law to alter them in any respect, either for the correction of mistakes in the Latin, of supplying a word, syllable, or letter accidentally omitted, or of removing any other clerical error. The consequence of which was, that after a suit was decided in favour of a party, it frequently happened that his adversary discovered in the pleadings a blunder, and was himself making up the record; and by bringing a writ of error, he deprived the successful party of all benefit from the judgment which he had obtained. This inconvenient rule appears to have arisen out of a rigid observance of the words of a solemn promise, amen. "Amen is necessary to record the pleas pleaded before them, but forbid them to make their records a warrant for their own misdoings, or to erase or amend them, or to record anything against their previous enrolments." (Britton, p. 2.) Those words obviously imply nothing more than a necessary restriction upon the alteration of the records of courts of justice clandestinely and for sinister purposes, and certainly do not justify the absurdly strict interpretation afterwards applied to them.

To the rule, however, thus established there were many exceptions. All errors which have been commented upon the rolls, whether by the clerks, or by the judges, or by both, were set aside, and if the mistake was an omission, it was amended during the same term in which they were made, because it was said, that in consideration of the law the record is in the breast of the judges during the term, and not on the roll. In an esse as it, or excuse by a defendant for not appearing to a writ in proper time, or any other reason, a new writ, which is an entry on the record showing the continuation of a cause from one term to another, might be amended so as to make it correspond to the proceedings previously recorded. It is peculiar that these ingenuous exceptions must have been afforded but little relief from the oppressive strictness of the rule; and in cases which did not fall directly within them, the judges always held that they were bound by the ordinance of Edward I., and refused so to rectify the most
plicable errors after the expiration of the term to which the record belonged. It is probable that the judges may have adhered thus closely to their interpretation of the ordinance from a reasonable regard to their own safety; for in the seventeenth year of the reign of Edward I. (1288) we find that king instituting a prosecution of enormous severity against the judges, and imposing upon them fines amounting to the value of 1000 marks for imputed offences, connected for the most part with the ease and alteration of the records. With the fear of this formidable infliction before their eyes, which it might be very convenient to a monarch engaged in expensive wars, for the avoidance of his errors, the judges of those days were perfectly just in erring on the side of caution, by adhering to the strict letter of the ordinance.

But this rigid abstinenence of the judges from all alteration of the ancient was necessarily a great inconvenience in the administration of justice, and led in course of time to a series of legislative enactments, called statutes of Amendment and statutes of Jeofails, (joo fail or jas fail), by the former of which, express authority was given to amend certain specified errors in the records; and by the latter, the judges were empowered to proceed to judgment notwithstanding such errors. The first statute of amendment was the 14th Edw. III. c. 6, (1340) which enacted that no person should be tried by a jury or assize for 'being one syllable or letter too much or too little; but that as soon as the thing was perceived by the objection of the party, or in other manner, it should be hastily amended in due form, without giving any advantage to the party who objected extended to trials by the common law. Still the reluctance to depart from the letter of the statute, and much doubt and discussion arose in the courts, whether the statute, though it authorized the amendment of a letter or syllable, extended to the case of a total omission of a word. In a case in which this point was raised some years after the statute had been passed, the judges resolved to incur no personal danger by deciding it, but formally consulted the law-makers upon the meaning of the act. 'I went,' says Chief Justice Thorpe, who describes this conference, 'as a just action of the Year Book, (40 Edw. III. c. 34), 'together with Sir Hugh Green, to the parliament, and there were twenty-four of the bishops and ears; and we demanded of them who made the statute, if the record might be amended; and the archbishop or metropolitan said, that it was a wise and good statute, and a question of law, if it might be amended or not; for he said that it might as well be amended in this case as if it were but one letter, for if a letter or syllable fail in a word, it is no word; whereas, if all the word fail, it may be amended as well as if it fail. The parliament allowed the difference in the one case than in the other.' Upon this sensible advice and reproof of the archbishop, the judges admitted the amendment of a word.

In consequence of the indisposition of the judges to give the relief not to derive it from the legislation, of which the above black-letter anecdote is an instance, it proved in a great measure ineffectual; for though the terms of it appear to extend to every part of civil or criminal proceedings in which a clerical mistake has been made, they construed the word 'process' in the act of parliament strictly, and confined amendments to civil suits, and in them to errors in the entry of the processes for the defendant's appearance and for summoning the jury. If, therefore, a mistake were made, for example, of a part of a defendant's name, which was wholly immaterial, it was amended; but if a mistake of a word, syllable, or even a letter, was made by the clerk in drawing up the plea-roll or body of the record, the whole proceedings might be annulled by a writ of error. To remedｙ this inconvenience of the judges to amend, and the power of amendments, the statutes 8 Henry VI. c. 12 and c. 15 (1430) were made, by which the judges were authorized, 'in any record, process, word, plea, warrant of attorney, writ, pannel, or return, to amend all that which to them seemed to be the misprision of the clerk;' and also the misprisions of sheriffs, coroners, bailiffs of franchises, or other officers in their returns.' Appeals, indictments of treason and felony, and outlawries for treason and felony, were, however, expressly excepted from the operation of the statute of amendment.

But these latter enactments, which were, properly speaking, the only statutes of amendment in ancient times—those which followed being statutes of Jeofails—though they con siderably enlarged the power of the judges in making amendments, proved but an insufficient relief to the courts; for they extended only to the amendment of what the judges should interpret to be the misprision of their clerks, and upon this point subtle doubts and nice distinctions were suggested by the acuteness of legal criticism, and multiplied the course of the century; in consequence of which, just and lawful judgments were continually overthrown by formal objections, founded on errors which the courts did not consider to be strictly clerical misprisions.

In the next legislative provision upon this subject was a statute of Jeofails which was passed in 1540, (32 Henr VIII. c. 30) by which it was enacted, that 'where the jury have given their verdict for either party in any court of record, and a jeofail or mistake is afterwards discovered, the amendment of the record shall not be stayed, without reversall.' This was followed by the statute 18 Eliz. c. 14, (1572) which declares, 'that after verdict given in any court of record, judgment shall not be stayed or reversed for false Latin or other faults in form in original and judic平e writing, except in such cases as are mentioned, or by reason of the imperfect return of any sheriff, or for want of any warrant of attorney.' The 21st Jac. I. c. 13, (1623) specifies several other formal defects not mentioned in the previous statutes, and declares, that on account of such defects, when discovered after verdict, judgment shall not be stayed or reversed. The next statute of Jeofails, in chronological order, was the 16th and 17th Car. II. c. 8, (1665) called by Mr. Justice Twisdric 'the Omnimonit Act,' which amended and extended the former laws, as to the distinction between matters of form and matters of substance, and also specified a great variety of minute technical defects, which after verdict were not to arrest or stay the judgment of the court. The statutes which have been above mentioned, were in consequence calculated to aid imperfections in form after the verdict of a jury had passed upon the facts. This limitation was extremely unreasonable and prejudicial, as it enabled a party who made no defence, and had no substantial defence to make, to convert the form of the record into an arrest of judgment, or upon a writ of error, of which he could not have availed himself after a verdict. To remedy this inconsistency, the celebrated statute for the amendment of the law, introduced by Lord Somers, after his retirement from the office of chancellor, in 1709, (4 Anne, c. 16) extended the operation of the statutes of Jeofails to all cases of judgment by confession or default.

From this summary view of the older statutes of Amendment and Jeofails, it appears that since the time of Henry V., the legislative power of the court of common law was at first unemployed in obviating the errors which attended the proceedings; and it was only the necessity of some mode of obviating the evil by allowing the judges to amend formal errors in their records where justice required it, and adopted a more circuitous and uncertain course, by specifically enumerating certain errors and mistakes which were not to be amended, and authorizing the court, upon a di jury, to reverse the verdict of a jury. Perhaps the extreme caution of the judges in former times, in adhering rigidly to the letter of the power delegated to them, may have suggested to the legislature this variation from their original course; but however, almost universally, there can be no doubt that the authority to amend under certain restrictions was the more efficient remedy. The statutes of Jeofails have only given imperfect relief to suitors; for professional ingenuity has never failed to discover new arguments in this class of cases, in which it is almost impossible to apply the statute. Indeed it is common practice to bring prosecutions for the purpose of disturbing these judgments which have been reversed. In such cases, the court, on the authority of the statute, will set aside the former judgment, and proceed to consider the case further, as if it were a new suit. Thus, a most important improvement was introduced into the administration of justice by the statute of 9 Geo. IV. c. 15; which enabled 'any court of record in civil actions, any judge at nisi prius, and any court of Oyer and Terminer, and gaol delivery, on the complaint of the defendant of misnomer, or of a want of addition, or of a wrong addition, to amend the indictment or information.
according to the truth, and then to proceed with the trial upon the merits of the case, as if no such dilatory plea had been pleaded.

It has been noticed above, that in one of the early statutes of Amendment (2 Henry VI. c. 12) indictment and criminal prosecutions are expressly excepted from its operation; and though there is no such exception in the other statutes of Amendment, or in the statutes of Justices, it was fully esta-
ing those statutes, criminal pleadings stand upon the same principles with respect to amendment, as those to which all pleadings were subject at common law. With respect to indictments, it was formerly considered that, as they are founded on the information of a jury, they could not be amended improperly in making any alteration without their consent; hence it became a common practice, which is continued to the present day, from very ancient times, to ask the grand jury formally, at the time of their returning their panel, and so to put the charge, shall amend matters of form in the bills they have found, altering no matter of substance without their privy. But it is believed that instances of such amendments are extremely rare, and are almost unknown in modern practice. In the 12th Charles law, that criminal informations, which do not depend upon the oath of a jury, may be amended by the court at any time before trial; though this was considered so late as the time of Lord Holt, to be a very questionable and improper fault, and by the 12th Car. 2, all minute objections was the consequence of this exclusion of criminal cases from the beneficial operation of the statutes, and became a great reproach to the administration of the criminal law: to remove this evil, a kind of general statute of Justices, dated Feb. 11th, 1695, was made in 1695, in order, as the preamble states, 'that the punish-ment of offenders might be less frequently intercrossed in consequence of technical niceties.' This statute (2 Geo. IV. c. 64, s. 290) provides that no judgment upon any indictment, information, or complaint, or any objection founded on the appearance of such defects upon the record shall not have the effect of staying or reversing the judgment of the court.

AMENDMENT, in parliamentary proceedings, is an alteration proposed to be made in the draught of any bill, or in the terms of any motion, under discussion. Although no member (except when the House is in committee) is allowed to speak more than once upon the same question, he may speak again upon the amendment, which is consid-ered a standing order. Some instances are the House moved, the effect of which is entirely to reverse the sense of the original motion: but when this is the object, it is more usual to move a negative. It not unfrequently happens, however, that a motion proposes to leave out all the words of the original motion except the word, 'That, which it commenced, and to substitute others in their place. When a motion for the adjournment of the House is made, it is always in the words, 'That the House do now adjourn: and, if the motion be carried, the House will adjourn to the next sitting-day, unless a resolution shall have been come to in a previous part of the evening that at its rising it will adjourn to some other particular day. It is not competent, therefore, upon the motion for adjournment to move an amendment at present, except the words of the original motion, it was long a matter of dispute whether, when an amendment was proposed to a motion after the previous question had been also proposed, it was necessary to with- draw the previous question before the amendment could be placed on the table. By a vote of the House, on the 16th March, 1726, it was necessary first to withdraw the motion for the previous question. An amend-ment may be proposed upon an amendment, as well as upon an original motion. It is commonly said that the rule is, when an amendment has been proposed, that the amend-ment is first put to the vote and then the main question: but this, although the mode commonly observed at public meetings, is not exactly the practice of Parliament. There-fore general rule, that the motion which has been put and seconded, shall be put to the vote, and, accordingly, when an amendment has been proposed, instead of the question that it shall be adopted being directly put, a vote is taken upon the question, 'That the words proposed to be left out stand part of the question.' If the motion is carried in the affirmative, the main question is really the same thing, is next put, and, of course, agreed to. But if the motion, 'That the words proposed to be left out stand part of the question,' is negatived, the words that were proposed in the amendment are substituted, as if the amendment were carried, and the main question thus altered is then put, and, if that, in point of fact, the amendment separately is never put at all.

When amendments are made in either House upon a bill which has passed the other, the bill, as amended,.must pass the other House, and the differences between the Houses in the case of such amendments, accord-ing to Mr. Halsell, are as follows: 1st. Either House, disagreeing to amendments made by the other should also reason, and all reasons must be delivered in a form which the House acting alone cannot be sufficient by the other House, that House answers by mes-sage that they do not insist; 2ndly. If held insufficient, the House at a conference say, that they insist, or adhere, and give reasons for so doing. It may be added, that the usual uniform practice in both Houses, when it is intended not to insist upon the amendments, has been to move affirmatively to insist, and then to negative that question. (See Halsell's Proced. ed. 175, vol. ii. pp. 166-163, and 179.)

AMERCEMENT, a name sometimes given to a number of forest trees found chiefly in the north of Europe, Asia, and America: the flowers of which are arranged in a dense cylindrical deciduous spike, called by botanists an annu-ent. Such are the poplar, the birch, the elm, the willow, oak, and many others. But as their genera are in fact con-structed in very different manners, amercements are more cor-rectly separated, by modern botanists, into several different orders, for which see Cupuliferæ, Salicinæ, Betulæ, and Platanæ. The term amercement is, therefore, curb to be considered abolished, or as a collective name of all these.

AMERCMENT, Where courts of justice impose a pecuniary punishment on offenders, the sum to be awarded is to be determined by reference to the nature of the offence and the authority of the court. The difference between these is not merely nominal, though perhaps at the present day it is not of much practical importance. The remedy for the recovery of the amercement is by action, where in other cases the person aggrieved has the right of proceeding to recover the amount, for a fine, the law has provided a process for securing pay-ment, by arresting the person of the delinquent.

Where the offence amounts to a breach of the peace, or to a contempt of the king's courts, or other similar modes of administra- tion, or is in the nature of a charge against the court itself, which is in the direct discretion of the judge: where the of-fence is of a lighter character, or is the subject of a proceeding in certain inferior courts, the party is punished by having his penalty remitted, or if said to be unpaid, the court may of course pass upon the person of the offender: but for a fine, the law has provided a process for securing pay-ment, by arresting the person of the delinquent. Where the offence amounts to a breach of the peace, or to a contempt of the king's courts, or other similar modes of administra- tion, or is in the nature of a charge against the court itself, which is in the direct discretion of the judge: where the of-fence is of a lighter character, or is the subject of a proceeding in certain inferior courts, the party is punished by having his penalty remitted, or if said to be unpaid, the court may of course pass upon the person of the offender: but for a fine, the law has provided a process for securing pay-ment, by arresting the person of the delinquent. Where the offence amounts to a breach of the peace, or to a contempt of the king's courts, or other similar modes of administra- tion, or is in the nature of a charge against the court itself, which is in the direct discretion of the judge: where the of-fence is of a lighter character, or is the subject of a proceeding in certain inferior courts, the party is punished by having his penalty remitted, or if said to be unpaid, the court may of course pass upon the person of the offender: but for a fine, the law has provided a process for securing pay-ment, by arresting the person of the delinquent. Where the offence amounts to a breach of the peace, or to a contempt of the king's courts, or other similar modes of administra- tion, or is in the nature of a charge against the court itself, which is in the direct discretion of the judge: where the of-fence is of a lighter character, or is the subject of a proceeding in certain inferior courts, the party is punished by having his penalty remitted, or if said to be unpaid, the court may of course pass upon the person of the offender: but for a fine, the law has provided a process for securing pay-ment, by arresting the person of the delinquent.

The following examples may be selected to illustrate this subject:—

The sum of money ordered by the superior judges to be paid by way of penalty for the commission of any criminal delin-qence, or breach, is called a fine. A fine is a sum, and is sometimes also called a remon, because it is imposed in lieu of corporal punishment.

So where the defendant in a civil action had a verdict against him for the commission of a trespass, or any other civil injury, upon the house of God, or any sacred or profane, he is usually awarded that he should pay a fine to the king over and above the damages which he was liable to pay to the injured party. But where there was a verdict in an action against the defendant for a breach of contract, or other similar injury wholly moral, as in the case of breach of the peace, the court awarded, and still awards, that he shall be amerced. (In addition to the usual judgments of damages, &c. payable to the plaintiff,) and the proper person to assess the amount is the coroner of the county in which the act was done.
the right, a similar amercement is imposed on him as the penalty of his false claim; and this is in addition to the costs which he has to pay to the successful party.

It should be observed, however, that although the records of our legal proceedings still carry on their face the formal evidence of these antient usages, and the defeated plaintiff is to this day nominally amerced for his failure, and the suit unsuccessfully defended, the modern courts are not disposed or minded to interfere for his benefit, or any other penal fines or amercements are now known in our courts, except those which are imposed in the execution of criminal justice.

The subject of amercements was formerly of sufficient importance to have been placed in the preamble of the Act of the GREAT CHARTER, which enacts that they shall be equitably proportioned to the magnitude of the offence, and shall in no case be so excessive as to deprive the offender of the means of livelihood. It is by analogy to the case of amercement that fines, although not expressly named in Magna Charta, are deemed to be constitutionally within its spirit, so as to restrain within moderate and reasonable limits the discretion of the judges in imposing them. (See the Bili of Rights, 1 William and Mary; Bacon's Advant, ed. Kit. Fines and Amercements, 2d ed. Corn, bom. 29.)

AMERICA. The general description of this continent will be given under the following heads:—

I. Discovery.
II. Description of the names of what coasts have been surveyed.

IV. Man.
V. Zoology of America.
VI. Agriculture of America.
VII. Chief Political Divisions and Foreign Settlements.

I. During the latter part of the fifteenth century there was an ardent spirit of discovery in Europe, the principal object of which was to find a passage by sea to the East Indies, or China, by the Canaries, the Azores, and parts of the Western coast of Africa, and the Cape of Good Hope, were successively discovered by the Portuguese, and the probability of reaching India by sea was gradually becoming stronger. The states of Venice and Genoa concentrated the coast three of Italy, but the overplus named with India was engrossed by Venice. In this state of things a project was formed by Christopher Columb, or Columbus, a citizen of the rival state of Genoa, to sail westward to the Indies,—an idea which shows Columbus's knowledge of the figure of the earth to have been very remarkable. For his part he offered his services for this purpose to the governments of Genoa, France, England, and Portugal, by whom the proposal was successively rejected; but after eight years, his offer was accepted by Ferdinand and Isabella, the king and queen of the united kingdoms of Castile and Aragon. The expenses of the expedition were defrayed by the crown of Castile, the property of Isabella, and it was to the influence of this princess that the furtherance of Columbus's views appears to have been mainly owing. The expedition, consisting of three vessels, sailed from Spain on the 3d of August, 1492; and on Friday, the 12th October following, an island was discovered, upon which Columbus landed on the same day. The island was named by him San Salvador, and is now officially St. Christopher. Before he had reached Cuba and Hayti, to which latter he gave the name of Espaola. Here he left a few of his companions as the groundwork of a colony, and returned to Spain to procure reinforcements. In 1493, he again made an expedition into the entrance of Columbus, with some of the natives, and the gold, the arms, and utensils, of the discovered islands, was a triumph at once more striking and more truly glorious than that of any conqueror. In this voyage he had acquired a general knowledge of the islands in the sea between North and South America, but he had no notion that there was an ocean between them and China; they were considered as part of India, from whence arose the appellation of West Indies, as well as that of Indians, the firstcriptors of the whole continent of America. The success of Columbus now rendered the court of Spain eager to forward his designs, and he sailed, on his second voyage for Espaola, with a fleet of seventeen sail, accompanied by several persons of rank and fortune. In this voyage the principal discovery was the island of Jamaica. Guyana was soon called back to Spain to answer accusations which had been made against him by his enemies. A third expedition followed, in which the island of Trinidad was found, and the admiral descended the great river Orinoco and landed on the coast of South America which is now called Colombia, before reaching Espaola. After having thus discovered the continent of America, and made settlements in the islands, it was the hard fate of Columbus to be sent out to the Indies with dignity, owing to the machinations of his enemies. He, notwithstanding, took a fourth voyage, and returning to Spain, died at Valladolid in 1506, having had the glory of making one-half of the world known to the other—a glory untainted by cruelty or rapacity on his part, though the search of gold which he pursued by the Spaniards with most unscrupulous avidity.

The success of Columbus soon gave encouragement to private adventurers to the new world, one of the first of whom was Alonzo de Ojeda, who, in 1499, followed the course of Columbus to the continent of America, and, standing to the west, ranged along a considerable extent of coast beyond that on which Columbus had touched, and thus ascertained that this country was part of the continent. Amerigo Vespucci, a Florentine gentleman, accompanied Ojeda in this voyage, and having published an account of his discoveries and having published an account of his on his return, the country of which he was supposed to be the discoverer came gradually to be called by his name, and by universal usage the name received which has received the sanction of time.

The finding of a new world in the west was an event at once extraordinary and unexpected; it was accidental, because the exploring of Columbus was merely to India; nor are there any reasons for believing that the inhabitants of the old world had, at any previous time, the slightest approach to a knowledge of the western continent, unless the alleged discovery of Greenland, by the Norsemen, be excepted; but the latter, he and his companions having gradually reached the Shetland and Feroe Islands, and advanced to Iceland, in which he had planted colonies, and they certainly arrived either at Greenland, or some other part of the north latitudes of the North American continent, and, if cities or settlements there also; but it does not appear that this gave the Europeans any notion or suspicion of the existence of a new continent stretching so far from north to south, and this Norwegian discovery is a very different thing from discovery in the south; Eastern ministers of His Majesty's government also constituted the earth known to the antients; to this world alone all antient traditions and writings have reference; and to it were confined all enterprises of gain or ambition. It was all philosophy and poetic imagination that made the world, and America, therefore, was the opening of a new field to wealth, glory, and knowledge. Its influence upon the old world has been, perhaps, scarcely less important than that of the old world upon the new, and the memory of the immortal Columbus will be held in permanent honour alike by the old continent which gave him birth, and by the new one, which ought to have borne his name. (See Robertson's America, and Washington Irving's Columbus.)

Although the island of St. Salvador was discovered, as already stated, in 1492, the coast of South America was not ascertained by Columbus until 30th May, 1498. Now, almost a year before, viz., on 24th June, 1497, the coast of North America had been reached by an English vessel, commanded by Giovanni Gaboto, or Cabot, of Genoa, making his voyage in company with his son Sebastian, and explored a long line of the North American coast. (For the discoveries of the two Cabots, and as to their comparative age, see the article CABOT.) Sebastian, of course, visited Newfoundland. In 1501, Gaspar Cortereal, a Portuguese, touched at Labrador; and Brazil was accidentally discovered by a Portuguese fleet under Cabral, which had been fitted out for purposes of trade and conquest. In 1503, the Governor of the island of Gama, who had recently accomplished the passage to the East Indies by the Cape of Good Hope. (See Africa; GAMA.) The coast of the province of Tierra Firme, from
Cape de Veia to the Gulf of Darien, was first visited by Bastidas, a Spaniard, in 1501. Its recurrence was discovered by De Solis, in 1567, and that of Florida by Ponce de Leon in 1512. In the same year, Sebastian Cabot reached the bay, since called Hudson's Bay. The Pacific, or Southern Ocean, was first seen from the mountain tops near Panama, by Balboa, in 1513; and, two years after, landing was effected on the coast of South America, about the mouth of the Rio de la Plata, by De Solis, who, as well as several of his crew, was killed, roasted, and eaten by the natives. The Spanish government, for the present, was disappointed, and he turned his thoughts to his first also to make conquests in America, early in the sixteenth century. Fernando Cortez was dispatched to subdue Mexico, the most powerful state in the new continent, and very rich and extensive. Notwithstanding the efforts of its chief, Montezuma, it soon fell under the dominion of Spain, and this conquest was followed by another almost equally valuable—that of Peru, whose subjugation to the Spanish yoke was effected by Pizarro. The French now began to participate in the real for adventure, and in 1824, an expedition was dispatched to survey the whole coast of the north-west passage, under Governor Verazano, a Florentine, who surveyed a line of coast of seven hundred leagues, comprising the United States and part of British America. But in 1708, Aubert, a Frenchman, had already discovered the St. Lawrence river. Jacques Cartier, in 1534, and the first of the Captain of Newfoundland, and entered the Gulf of St. Lawrence. In his second voyage, the next year, Cartier sailed up the St. Lawrence, to the habitation of Hochelaga, near the site of Montreal, and deeded the land to the King of France. The coast of California, on the west side of the northern division of the continent, was discovered by Ximenes, a pilot, who had murdered Mendoza, a captain, dispatched by Cortez on a voyage of discovery; the gulf of California, the first part of the coast of the Pacific, was discovered by Ulloa, another captain sent out by Cortez, in 1539. The Spaniards subsequently undertook several unsuccessful voyages, but they did not abandon their hopes, and at the close of the sixteenth century, Sebastian Viscaino advanced as far as Cape San Jose in South California, and Columbia River. During the reign of Henry VIII., attempts were made by the English to find the north-west passage to India, without success; and in the next reign, Sir Henry Willoughby failed in a search of a north-east passage. Three successive voyages in search of the north-west passage were made in the next reign, by Martin Frobisher, who, in 1576, and the two following years, explored Labrador and Greenland, but without any further result. Among our early north-west discoveries, may be mentioned that of Hudson, in 1608; of Knight, in 1610; of Hudson, in 1610 from whom is named the great inland sea called Hudson's Bay and the river of New York); of Button, in 1612; and of Sylart and Baffin, in 1616, to whom Baffin's Bay has been named. After this year, there seems apause in the progress of northern discovery; but, in the mean time, colonization in North America had been begun by England. Sir Humphry Gilbert was the first to attempt it, though he merely took formal possession of Newfoundland, in 1583; his half-brother, the celebrated Sir Walter Raleigh, in 1584, dispatched an expedition which discovered the country then called Virginia, and he made several attempts to colonize it, without effect. The colonies of Virginia and New England were respectively established in 1607 and 1620, and it is not a little remarkable that one hundred and six years elapsed after North America was first visited by Cabot, before a single Englishman had effectually settled in the country.

The discovery on the north-west shores of America, the English accounts of Cooke, Clarke, Meares, and Vancouver, and the narratives of the Russians, Behring and Tashirkov, may be referred to. The journey of Samuel Hearne, to the Copper-mine River, from Hudson's Bay to the Arctic Ocean, in the year 1772, was important in showing the fallacy of the supposition that was entertained of the extension of the continent in an unbroken mass towards the Pole, Hearne having been the first to reach the shore of the Arctic Ocean. In 1793, Alexander Mennie reached the Arctic Ocean, latitude 69°, and in another expedition crossed to the Pacific by land, being the first person who had penetrated from sea to sea across the mass of the continent. After this, there was another pause in the annals of discovery, until, in 1818, the British government dispatched Captain Ross in search of the north-west passage, who entered Lancaster Sound, and reached latitude 78° north, the limit of his progress, and did not return. In 1819, the Admiralty dispatched Lieutenant Parry in the same direction, and his success was so brilliant that he reached 80° of west longitude beyond any former navigator, discovered the North American shores of Baffin and Abyssinian islands, and by and by completely established the fact of the existence of the Polar Sea. Captains Parry and Lyon undertook another voyage in 1821, and wintered in Melville Island, without further success. Captain Parry made a third expedition in 1825, wintered another season, and discovered the northeast passage, a route to Asia, through the Strait of Behring, which was not effectuated; he returned without further discovery than the addition by survey of a new and extensive line of coast to the geography of the Polar Regions. It only remains to refer to the Polar voyages, particularly those of Scoresby, between 1816 and 1819, who alone, in the whaling interests, was in the latitude of 84° 40' north. The private expedition of Captain Ross left England in 1818, and has not been heard of since. All the discoveries, either in the Polar regions or in the north-west, have been made in the progress of their voyages by either fixed or moveable ice, and the question of navigation on the north-west passage is still unsettled. There is an account of a pretended voyage round the northern extremities, written by L. Ferrer Maldonado, and alleged to have been performed by himself in 1588, but it is considered unworthy of credit; the fact at present is that no one has ever sailed round America on the north, nor, if the passage were discovered, could it be of any commercial utility.

For an account of discoveries made by the Danes on the east coast of America, see Journal of the Royal Geographical Society, for 1830-31.

II. The following are the parts of the American coast that have been surveyed.

The river and Gulf of St. Lawrence are now in the course of being surveyed in a very elaborate manner by Captain Bayfield.

Newfoundland was surveyed by Cook, and the east side has since been accurately laid down by Captain Bullock.

Nova Scotia has been surveyed by Mr. Des Barres and Mr. Lockwood.

The West Indies are now in course of being surveyed by Captain R. Owen.

There has been no complete survey of the coast of the United States.

The survey of the coast of Brazil has been ably executed by Admiral Rossouin.

The Rio de la Plata has been surveyed by sundry English officers, Heywood, Fostor, &c.

The coast to the south of that river is now undergoing a survey by Captain Fitzroy.

The coasts of the river of the Fuegians, the Strait of Magalhães, and the coasts of the continent north of the strait, on the east side as far as about 56° S. lat., and on the west side as far as about 51° 30' S. lat., have been lately surveyed by Captain Philip Parker King.

The west coast, from the part opposite to the north of Mexico downwards, was all long ago surveyed by the Spaniards, but wants re-examining. Cook, in his third voyage, passed from Cape Gregory and Juan Fernandez to Cape Otway, where he placed in 70° 44' N. lat.; and Vancouver afterwards surveyed from 38° 18' N. lat. to 45° 46' N. lat.

The portion of Behring's Straits from 63° 50' N. lat. to 66° N. lat. has been terminated by Captain Ross, who placed in 64° 35' N. lat., and Captain Vancouver afterwards surveyed from 38° 18' N. lat. to 45° 46' N. lat.

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The external form of America presents, in many respects, a contrast to that of the old continent. Viewed as an entire region, it has a lengthened figure, of which the greater diameter is inclined to the equator: the whole continent is the longest continuous mass of land that the
The globe presents, stretching from the northern icy ocean into the cold regions of the south. This continent is composed of two great peninsulas united by a long isthmus, which, whether we consider its form, or the primitive rocks of which it is composed, bears no resemblance to the isthmus between Africa and Asia. The expression 'New Continent,' which is often applied to America, does not refer to the comparative ages of the two continents, or the time of their supposed appearance above the ocean, but to the chronological order of our knowledge.

The northern extremities of America, as already stated, have been but partially ascertained, and when we reflect on the nature of the Icy Sea, it is difficult to believe that navigators can ever explore its full extent. On the east, America is washed by the Atlantic, and on the west by the Pacific ocean. Its length from the northern latitude of 70° to 56° south latitude, may be considered as exceeding 9000 miles, though it cannot be accurately stated; its breadth upon an average is about 2000 miles; its widest part extends from about the 55th to the 168th degree of west longitude from Greenwich. The extent of surface has been variously stated. Hassel has given it at 17,303,000, and Halh at 14,622,000 square miles, but in every estimate allowance must be made for the uncertainty of the northern limits, and our still imperfect acquaintance with the form and position of some coasts. Berghaus makes the area about 14,219,967 square miles, not reckoning the islands, to which he assigns an area of about 98,660 square miles, which is certainly too little. The most southern point is Cape Horn, near the island of Tierra del Fuego. The two great portions which are called North and South America are divided by the great Mediterranean Sea sometimes called the Columbian Archipelago, and united in 9° N. lat. by the isthmus of Panama, which in the narrowest place is not more than thirty miles wide. North America comprehends all that part of the New World which lies north of the isthmus of
Panama, and extends to the Polar Regions. Its eastern extremity on the coast of Labrador is in 55°, and its western, on Behring's Straits, in about 160° W. longitude.

The form of North America has sometimes been compared to that of a triangle, with the vertex terminating at the isthmus of Panama, and the base determined by the shores of the Frozen Ocean. It may be more to the purpose, as a general fact, that the breadth of the continent diminishes southwards to the isthmus of Panama from the latitude of 50° north. The extent of coast is very great, owing to its form: the length of coast from Hudson's Straits to the Florida Channel is about 4500 miles; and the breadth of the Florida Straits to the base of the isthmus of Panama, about 4500. The whole length on the Pacific side to Behring's Straits (including the Gulf of California) has been roughly given at 10,500 miles. The extreme north and north-eastern coasts we do not attempt to give. The area of this region is stated to be rather greater than that of South America.

The coast of North America is more indented by seas and large inlets on the eastern than on the western side. On the east side proceeding from north to south, we have Baffin's Bay and Hudson's Bay, the latter smaller than a sea; and the extreme northern point of the peninsula of Nova Scotia, with Cape Cod, the termination of the most eastern projection of the State of Massachusetts, may be considered as marking the opening and the limits of a great gulf, of which the Bay of Fundy is the fullest and most extensive indentation. The coast, between the Bay of Fundy and the Gulf of Mexico, is not marked by any very considerable indentation, except the Chesapeake Bay, which runs from south to north about 180 miles, with an average breadth of about thirteen miles. Cape Hatteras in North Carolina may be considered, in connection with Cape Florida to the south, and Cape Cod and the southern point of Nova Scotia, as dividing the Atlantic coast south of the St. Lawrence into three great divisions. The more particular description of the Atlantic coast south of the Bay of Fundy belongs to the regions of the Gulf of Mexico.

If the islands that in an irregular line lie stretched in front of the Gulf of Mexico and the Caribbean Sea were united with one another and with the main land—a state of the case it is almost impossible to imagine—then if we should have a large body of water in the central part of the Gulf, about 800 miles in length, and the Mediterranean. If it be doubted if this sea was ever closed like the Mediterranean, we cannot doubt that the islands which now line its eastern limits have been hinged and broken into smaller pieces by the action of the ocean. Between the tenth degree of north latitude, which is near the island of Trinidad, and the twenty-fifth of north latitude, (the southern extremity of Florida,) we find the eastern limits of this great inland sea; but as we advance into it, we find it divided into basins, each of which, with their winds and currents, will require a separate description. The Gulf of Mexico is on the N.W.; and on the south, the Gulf of Honduras, and what is sometimes called the Caribbean Gulf or Sea, comprehend in it the peninsula of South America and the islands of the northern coast of South America. The Archipelago, which the great inland sea of the Americas presents, is one of the most extensive and interesting in the world. The Gulf of Mexico, hemmed in by the peninsulas of Florida and Yucatan, and by the western side of the island of Cuba, is the most important part of this inland sea.

The western coast of North America presents no very deep and extensive indentations of the coast as we advance northwards from the Bay of Panama, till we come to the immense Gulf of California, about 800 miles in length, and from sixty to eighty miles in average width, formed by the main land and the long narrow peninsula of California. Between the latitudes of 47° and 69°, the west coast of North America is exceedingly irregular, presenting a great sum of islands, one of considerable extent, and forming with the main land numerous bays and coves. Farther north we find between Cook's Inlet and Prince William's Sound an extensive peninsula running about 200 miles from north-east to south-west; and west of this the still more irregular coast of Alaska, running in a similar direction for about double the distance. Both these peninsulas have steep rocky coasts lined with islands and rocks. The straits which take their name from the navigator Behring separate Asia from America by a narrow strait, which is about a mile wide, running in a similar direction for about double the distance, and forming two continental masses as separate parts of the North American continent. They have the same characteristics in common. South America has the form of an irregular triangle, of which we may name as the three points, the isthmus of Panama, Cape St. Roque (not strictly the most eastern point), 5° 28' S. lat., 35° 40' W. long., and short distance from the coast. (See 4° 29' W. long.)

The great extent of its sea-coast is determined by its peninsular form, and in this, as well as in the absence of all very great indentations of the ocean, it presents some resemblance to Africa; but it has, also, a coast of many elevated mountain-chains, and a more complete development of its water system. The extent of coast that it offers to the inland sea and the Atlantic, is roughly estimated at about 10,000 miles; the coast of the South America, however, by the entrance of the great southern parts of South America, and the southern coast on the Pacific, bear some analogy to the north-west coast of North America in their irregular outline, and the number of islands that line it. Tierra del Fuego, though separated from the mainland by a mountain range, is regarded as a separate arm of the sea, must be considered, with its appendages of barren islands and rocks, as the real termination of the continent. From this point advancing northwards along the coast of the Pacific, we find it studded with almost innumerable short islands, and marked by countless channels. (See Charts of Capt. King's late Survey.) This island coast extends as far north as the Chiloé Archipelago, 42° S. lat. South of the lat. of 40°, it is remarked that the mountains press close on the shore, instead of leaving a space between their base and the ocean, as is the case in the parallels north of 40°. The sea thus insinuates itself within the mountains, detaches island masses, and makes many deep creeks, somewhat resembling the fjords on the coast of Norway. The rest of the coast of South America is, in the main, but the改装 of the Andes for the most part. (For the general sketch, except the great bend that takes place about the latitude of the lake Titicaca, corresponding to a change in the direction of the Andes; with the Gulf of Guayaquil and the Bay of Panama.

The principal mountain system of the Americas is remarkable for presenting the longest line of elevated surface in the world. The Andes which may be traced from the extreme rocky islands, forming part of the system of Tierra del Fuego, run along the western side of the continent at a comparative height. Though this chain experiences two depressions, as we have stated, in the isthmus of Panama, another chain, perhaps a continuation, immediately rises again, and continues its course between the inland sea and the Pacific, spreading out into several branches, forming the lofty table-lands crowned with volcanic peaks. (Oriaba and Popocatetel are about 16,000 feet high.) and continuing in its main line a general course N.W., at a much greater distance from the Pacific than the Andes of South America. If the limit of the Pacific, which is within the limits of the United States, is known by the name of the Rocky mountains, and in the north-west territory is sometimes called the Chippewa range. The termination of this range is at the Frozen Ocean on the west side of the McKenzie River; after the fifteenth parallel of latitude the elevation is not considerable. The whole length is not less than 8700 miles. The chain which extends from the table land of Mexico does not run northward in a line so regular as the Andes of the eastern continent. About the lat. of 22° N. it divides into several branches. The most easterly branch, which is but of inconsiderable elevation, is in its northern course broken through...
by the Rio del Norte; it then takes a north-eastern direction, forming the northern part of the province of Texas; in this part of its course, it acts as the water-shed between the Sabine with other small rivers that enter the Gulf of Mexico, and the minor affluents of the Rio Roxo, (Red River,) a tributary to the Mississippi. This is the range of hills which crosses the Arkansas, and appears in the state of Missouiri under the name of the Ozark mountains, running towards the confluent of the Missouiri and Missouippi; and contains several parallel chains of mountains, forming longitudinal valleys like that in which the Rio del Norte runs. This mountain system, in its further course, separate, a slight slope, and its affluents drain off the waters that flow into the Gulf of California and the Pacific. Of these western streams, the almost unknown Rio Colordao, which enters the Bay of California, and the Oregon, or great Columbia River, are the chief. From the headwaters of the inferior streams, as we advance towards the great dividing line, the country rises in irregular terraces, and in planes of small inclinations, so that the main mass of the Rocky Mountains does not present to the spectator any remarkable features of grandeur, at least not in the direct lines of vision. Between 36° and 42°, there are several points of the Rocky Mountains always covered with snow, and the mean temperature of these elevated regions within the territory of the United States is very low. The Big Horn, Spanish Peak, and the Peack are estimated to be about 11,000 feet above the level of the sea.

Of the connexion and character of the mountain-masses in North America, which lie west of the main mass, we have but very incorrect information. The greatest mountains, some called the Cordillera of Sonora, stretches from the plateau of Guanaxuerto towards the northern point of the Gulf of California, about 33° N. lat.; the long narrow peninsula of California has also a chain of hills or mountains, which, from its extraordinary height, is supposed to be attached to some part of the Sierra Madre. Some are of opinion that the mountains of the Sierra Madre terminate about latitude 33°, (though it is certain that even north of that point there is a high table-land,) and that the Missouire River, as well as the Columbia and its branch, are to be considered as a continuation of the Californian range. But it is, perhaps, more probable, that the range which is traversed by the Columbia River in the lower part of its course, is the continuation of the mountains of California; in which case, the contrary latitude of the Gulf of California to the termination of the coast at the Icy Sea, we are only imperfectly acquainted with these high lands that are often seen at no great distance from the shore, and sometimes rising up from it like Alpine masses. There is, probably, a continuation of the mountains of California, following the windings of the coast into the peninsula of Alyaska; which, in a proper point of view, will admit of a better comparison with the Andes than the chain of the Rocky Mountains. In some part of the north-west coast, these Ocean Ais rise to the height of 14,000 and 16,000 feet. Mount Fairweather and Mount Elias, near the parallel of 60° north, rise respectively to the height of 13,824 and 16,938 feet. The mountain system of the eastern side of the North American continent, called the Appalachian, stretches from about the 34° of latitude northwards to the banks of the St. Lawrence. As far north as the Hudson, its direction is pretty nearly from S.W. to N.E. In its southern parts, in the state of New York, the general direction of the chain is towards the Atlantic, but continually approaches nearer as it runs north, till it is traversed by the Hudson River, where it is also reached by the tide-water. Here it takes a turn more to the north through Vermont and New Hampshire, in which latter state it acquires its greatest elevation. In the White mountains of the state of New Hampshire, Mount Washington, about N. lat. 44° 15', is 6200 feet high, though it does not appear to belong to the main branch, but looks rather like a detached group. The Appalachian range, considered in its full extent, does not consist of a single chain, but we frequently find several chains running parallel to one another, and forming extensive longitudinal valleys such as that of Shenandoah in Virginia. [See APPALACHIAN MOUNTAINS.] This mountain system, which is about 1200 miles long, forms the most remarkable characteristic of the Atlantic portion of the United States, containing the sources of numerous rivers, which on the one side contribute their waters to the Mississippi, and on the other find their way to the Atlantic, sometimes breaking through the most eastern chains of the Appala-chian system, by passing down the electric lightning. Though the height of the range south of the Hudson is considerable, rarely exceeding the elevation of 3000 feet, yet, from its continuity, and the surface which it covers, this mountain system is a most important element in the climate of the United States. For a more detailed view of this portion of the continent, see APPALACHIAN MOUNTAINS AND UNITED STATES.

The great valley of the Mississippi drains a surface perhaps inferior to that of no river on the globe. The sources of the main stream, the Missouri, are ascended to be in the Rocky Mountains, about 44° N. lat.; but the Yellow-stone, which is really the main branch of the Missouri, rises in 42° N. lat. The sources of the Mississippi, though not yet ascertained, lie at least very near the Missouri. Mr. Schoolcraft, in the year 1832, found that the Missis-sippi originates in a lake, at the elevation of about 1500 feet above the Atlantic, and computed to be 3160 miles from the ocean, following the windings of the stream. We are not able to state the length and magnitude of the Missouri, but the Yellow-stone runs into the great ocean. East of the Rocky Mountains lies the great central valley of the Mississippi, perhaps the largest, and certainly the most interesting valley in the world. If its eastern boundary, the Appalachian mountains, its southern boundary is the Gulf of Mexico, and its northern limit is the level of the great lakes. From the Rocky Mountains to the bed of the Mississippi we have a slope, which, as to length, bears a similar proportion to the breadth and elevation of the sea. For a great distance from the Alleghany system to the Mississippi bears to the height of its mountains. The slope from the Appalachian to the Atlantic is, according to the same law, shorter than that from the Rocky Mountains to the Pacific. Thus we have three important water systems south of the line of the Canadian lakes.

On the Pacific, the chief rivers are the—

<table>
<thead>
<tr>
<th>Length</th>
<th>Miles</th>
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<tbody>
<tr>
<td>Oregon, with numerous large tributaries</td>
<td>1000</td>
</tr>
<tr>
<td>The Rio Colorado</td>
<td>1265</td>
</tr>
</tbody>
</table>

In the great central valley we have the great Missouri, with its affluent the Mississippi, and numerous other streams of great length:—

<table>
<thead>
<tr>
<th>Miles</th>
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<tr>
<td>Missouri to its confluence with the Mississippi</td>
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<tr>
<td>Mississippi to its confluence with Missouri</td>
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<tr>
<td>Mississippi from the confluence of the Missouri to its mouth</td>
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Entering on the west side—

<table>
<thead>
<tr>
<th>Miles</th>
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<tbody>
<tr>
<td>The Arkansas</td>
</tr>
<tr>
<td>Rio Roxo (Red River)</td>
</tr>
<tr>
<td>On the east</td>
</tr>
<tr>
<td>Ohio to the junction of the Mississippi</td>
</tr>
<tr>
<td>Missouri to the outlet of the Gulf of Mexico</td>
</tr>
</tbody>
</table>

These lengths are given according to Darby. It will be observed that the length of the Mississippi, as here given, falls very far short of what is stated above.

Such are a few of the mighty rivers that water this extensive valley, which presents perhaps one of the most striking features of the continent. From the sources of the Mississippi, south its length is not less than 1200 miles, stretching from regions of almost perpetual cold to the tropical warmth of Louisiana. We see from an American paper that the Mississippi has been navigated this full extent, and engaged in the north-western trade, from the mouth of the Yellow-stone River to St. Louis.

When America was discovered, one continuous forest spread from west to east, from the shores of the Atlantic over the Appalachian system, and descended into the valley of the Mississippi. From the Gulf of St. Lawrence and the region of the great lakes, this uninterrupted mass of
vegetation reached to the shores of the Gulf of Mexico, and extended west of the main stream of the Mississippi. * This ocean of woods, still in the far greater part existing, may be considered as about 2000 miles in length, with a mean breadth of 1000, and comprising 2,000,000 of square miles, and limited either by the Atlantic Ocean, the Gulf of Mexico, or by naked interior plains. Darby’s *View of the United States*, p. 357.) These naked interior plains are found west of the Mississippi on the high lands as we advance westward. Here we come to extensive steeppraced by trees, parched in summer by scorching heat, and covered in winter with snow, after the winds that sweep with an intensity of cold almost beyond belief. The spacious and dry plains of the Texas and the upper regions of Arkansas present a character analogous to the high plains of the Atlantic states, and the vegetation here which adopts those pastoral habits which are the only mode of life suited to the regions which he occupies. Stretching along the base of the Rocky Mountains, with an average width of five or six hundred miles, we find a country, which is emphatically called the desert of the west. Here exist both on the east and west side of the channel of the river; prairies are found in the State of Alabama. They are extensive, elevated, and generally irregular tracts, without trees, though sometimes capable of producing them, covered in the spring with a fine, white sand, and long grasses, with a deep rich soil. Sometimes on the west side of the Mississippi they exhibit on their surface a salt efflorescence; incrustations of pure salt, covering the ground like ice, and seen in the upper valley of the Canadian river, one of the tributaries of the great Atlantic Ocean.

The rivers that enter the Atlantic along the eastern slope of the Appalachian, though in themselves of great importance, are inconceivable when compared with the great rivers of the western slope, and the eastern valley of the Mississippi. The lower part of the basin of the Mississippi and the valleys of the eastern United States are divided entirely by their drainage. The basin of the Mississippi is the highest of these inland seas, being 641 feet above the level of the Atlantic: Lakes Huron, Michigan, Erie, and Ontario, collectively covering a surface of about 73,000 square miles, a space equal to the area of Great Britain. These lakes have the outer margin of the lakes in which they lie at no very great distance from their shores, as we may infer from the size of the estuaries of the streams which they receive. Lake Superior is the highest of these inland seas, being 641 feet above the level of the Atlantic: Lakes Huron and Michigan form a separate and somewhat lower basin; Erie a third; and 333 feet below Erie lies Ontario, doubtless once at a much higher level than it now is. The great fate of Niagara, in the narrow channel that connects lakes Erie and Ontario, show at once the great difference between the level of these two lakes. The course of the St. Lawrence, it has been remarked, is of singular conformity to that of the opposite Atlantic coast, having a general north-east direction. After its exit from Ontario it receives near Montreal the great river Ottawa from the north-west, and, increased by numerous smaller streams, forms the St. Lawrence Gulf, the Atlantic bay. This is the nearest approach of the great lakes, in which many respects is the most interesting in the world, will require a separate notice. [See St. Lawrence.]

The upper branches of the Mississippi proper and the St. Lawrence are on a high level, but not in a region of mountains. North of the basin of the Canadian seas we find that the cold regions of the north-west territory have also their great rivers. The Portage de la Prairie, about 100 feet above the level of lakes Winnipeg and Superior, is a high, dry, shallow district, which, at this point, forms the dividing line between the waters that flow to the St. Lawrence basin, and those that belong to the basin of Winnipeg, the receptacle of numerous streams. The southern branch of the Saskatchewan rises in the Rocky Mountains near the sources of the branch of the Columbia river and the Missouri, traverses 15° of longitude, and falls into the great lake Winnipesaukee, in 53° north lat.: this lake is connected with Hudson’s Bay by the Severn and Port Nelson rivers. The course of the Saskatchewan, as far as Winnipeg, is at least 900 miles. In 56° 41’ N. lat. and 109° 32’ W. long, a Methy Portage, formed by the flood and range running sub-west which separates the rivers flowing north from those that flow south or east. On the north side is a valley 1000 feet deep, and a water passage is open, with some interruptions, to the great lakes. This lake is called the Methy Portage. The Mackenzie is one of the large rivers of our globe; but such is the complicated water system of this region, with its endless lakes communicating with one another, that it is almost impossible to form a complete idea of the character of this river. If we consider the Athabasca river as its remote branch, the Mackenzie flows through about 18° of latitude into the Icy Ocean. The sources of the Peace river are much further to the north; but if we follow the Mackenzie, and the Muncho, which we shall find the whole course of the stream as long as we traced it from the more southern branch. East of the Mackenzie, and flowing into the Arctic Ocean, are the Copper-mine and Fish rivers. It is impossible not to recognize a curious and important feature in the water system of these northern parts of North America. The elevated table-land in which the Mississippi and the affluents of Lake Superior rise, divides the continent east of the Rocky Mountains into two parts. The basin of Winnipeg may be considered as formed by a great basin, containing the waters of the peninsula, divided into two portions. Down the southern slope, the Mississippi flows to the warm regions of the Gulf of Mexico; and down the northern, the river Mackenzie runs to the Icy Ocean. The St. Lawrence, and the other streams which enter the west side of Hudson’s Bay are the great channels that carry off the collected waters of this elevated region of lakes into the Atlantic. The peculiar nature of this north-west territory, and infinite assemblage of fresh-water basins, make a separate discussion. It may be well to observe, that, independent of geographical position and the consequent difference of climate, the numerous lakes that belong to the northern portion of this continent and to the system of the St. Lawrence give it a peculiar character. The Mackenzie, and we shall find the whole course of the stream as long as we traced it from the more southern branch. East of the Mackenzie, and flowing into the Arctic Ocean, are the Copper-mine and Fish rivers. It is impossible not to recognize a curious and important feature in the water system of these northern parts of North America. The elevated table-land in which the Mississippi and the affluents of Lake Superior rise, divides the continent east of the Rocky Mountains into two parts. The basin of Winnipeg may be considered as formed by a great basin, containing the waters of the peninsula, divided into two portions. Down the southern slope, the Mississippi flows to the warm regions of the Gulf of Mexico; and down the northern, the river Mackenzie runs to the Icy Ocean. The St. Lawrence, and the other streams which enter the west side of Hudson’s Bay are the great channels that carry off the collected waters of this elevated region of lakes into the Atlantic. The peculiar nature of this north-west territory, and infinite assemblage of fresh-water basins, make a separate discussion. It may be well to observe, that, independent of geographical position and the consequent difference of climate, the numerous lakes that belong to the northern portion of this continent and to the system of the St. Lawrence give it a peculiar character. The Mackenzie, and
a. Since the acquisition of Louisiana by the United States in 1803, the government have sent out several expeditions to explore part of the extensive regions between the Mississippi and the Ocean. The first was that at the head of which was Captain Meriwether Lewis, with Captain Clarke. The party entered the Missouri at St. Louis, where it joins the Mississippi, on the 14th of May, 1804, and by the 1st of November they had reached the settlement at Neversink, from St. Louis, in latitude 47° 21' 47" N., and longitude 99° 24' 45" W. from Greenwich. Here they remained till the 7th of April, and during their stay completed, from the information of the Indians, a map of the country they were making and began to explore the latitude 34° to 54° N. They then continued the ascent of the Missouri, till, on the 15th of August, 1805, they reached its extreme navigable point, about 2500 miles from its junction with the Mississippi. Here, leaving the river, they made their way on horseback across the monta-

mains, when they reached a navigable stream, which led them into Lewis river, from which they were carried into the main branch, the Columbia, and proceeded down it till, on the 15th November, they reached the Pacific. They remained on this coast till the 27th Nov. 1806, when they set out on their return, and reached St. Louis on the 23d of September. Meanwhile, in the latter part of 1804, Mr. Dunbar, of Natchez, accompanied by Dr. Hunter, had established a fort in the latest wilderness, in the streams on the intake Red River, a few miles above its junction with the Mississippi, as far as to the hot-springs in its vicinity, in latitude 31° 31' 4" N., longitude 92° 50' 43" W. A considerable portion of the Red River itself had been explored by Major Long, of the United States, in 1805, Lieutenant, afterwards General, Zebulon Montgomery Pike was despatched by the government on an expedition to explore the upper portion of the Mississippi. He sailed from Fort St. Louis on the 9th of August, and after making his way into what were then considered the sources of the river, returned to the same place on the 30th of April, 1806. Soon after his return, Pike was despatched on a second expedi-
tion, to explore the country to the south of the Missouri. He left St. Louis on the 15th of July, 1806, and having pro-

ceeded as far as he returned to the Great Osage River, he entered the latter, and explored it nearly to its source. The course of the Great Osage had been before this very imperfectly known. He then crossed the country to the Arkansas, which he explored from about latitude 36° to 38° N., and from its western boundaries in latitude 94° 20' W., with which no account had been previously given. The lower part of the Arkansas was, at the same time, explored by a detachment from the main party, conducted by Lieutenant Wilkinson. He went from the mouth of the Arkansas to Scesa and his progress to the westward till he came upon the Rio del Norte, in New Mexico, where he was taken prisoner by the Spaniards, and detained for some months. He was, how-

ever, at length released, and effected his return to St. Louis by the 1st of Jan. 1807, after the celebrated expedition of Captain Meriwether Lewis, by which the Rocky mountains, besides the results we have already mentioned, the sources of the River Platte, which falls into the Missouri, were discovered, a part of the River Kansas and the Platte was explored, and the general course of the Rio del Norte was ascertained.

In 1819, another expedition was sent out in the same di-

rection, under the conduct of Major Long. This gentleman and his party left Pittsburgh, in Pennsylvania, on the 5th of May, and sailing down the Ohio to its junction with the Mississippi, and thence the Mississippi, Lake Winni-

tac, Lake Michigan, Lake Superior, the Red River, and Win-

nibago, by Captains Lewis and Clarke, Doctor Sibley, and William Dunbar, Esq. 8vo., Natchez, 1806; Travels to the Source of the Missouri, in 1804, 1805, and 1806, by Captains Lewis and Clarke, 4to., Lond., 1814; Simpson, who furnished him with an order on the Com-

pany's establishments along the whole line of communica-
tion to the Great Slave Lake, for whatever he might want during three years.
b. The Andes, as we have already remarked, is the great mountain-system of South America, presenting the longest unbroken range of lofty summits on the globe. Its description will be found under the article Andes. There is a certain analogy between North and South America as to its mountain-chains. The axis of the two continents, in each case, approaches the western shore much more closely than the eastern, though, as already observed, the Rocky Mountains, which are the true axis of the North American continent, are far removed from the Pacific, compared with the chain of the Andes. The consequence of this is, that North America possesses an extensive water-system on the Pacific slope, including the great Colorado, the Columbia, and other large rivers; but no considerable stream from the Andes enters the western ocean.

The Rio de la Plata flows in a great central valley, running from north to south, which may be compared with the valley of the Mississippi, while the Amazon is the great drain of the low lands that stretch from the Andes to the Atlantic, and may be compared with the St. Lawrence of...
North America. Besides the offsets that shoot out from the Andes, we find in South America several distinct mountain-systems. That which runs along the coast of Venezuela is, however, an offset from the eastern Cordillera of Cuenca, which runs down to the Caribbean Sea along the east side of the Lake Maracaibo. To this system the Venezuelan chain strikes off at right angles, in two parallel chains, running due east, of which the northern keeps close to the sea, and may be traced into the Island of Trinidad, and the Desguardo or Mouth of the Orinoco. The highest point of this chain is the Silla de Caracas, which has an elevation of about 8000 feet. Besides this northern chain, which runs along the Island of Trinidad, terminating in Point Galera on the north-east shore, we find a chain parallel with the Andes, and between the Gulf of Paria and Coro, which, considered a large river in any other part of the world. Its numerous tributaries, which descend from remote parts of Guiana, run through almost impervious tropical forests, and, entering in one main channel, enter the sea in about 5° N. lat. The Gulf of Paria has an east-west extent of 100 miles. Between the Andes and the high lands of Brazil lies the extensive plain drained by the Plata; and between the mountains of Guiana and those of Brazil, lies spread the immense level that belongs to the lower course of the Amazon.

The main mountain mass of the Brazilian system lies between 18° and 25° S. lat., and consists of several parallel chains with a length of about 700, and a breadth of 400 miles. The Sierra nearest the sea is called the Sierra do Mar. Its most prominent point is Mount Parahy, which rises to about 22° 30' S. lat., we find the central chain, which, running as far north as about 16° S. lat., contains the highest points of the Brazilian system; some of these have probably an elevation of 5000 feet. This chain is also at a smaller elevation to 10° S. lat. The western chain, which is of small elevation, separates the affluents of the Parana and Francisco from those of the Aragua and Tocantin, which unite to form the Pará. It does not appear that any mountain-system stretches across, and connects these high lands of Brazil with the Andes, and consequently the waters of the Paraguay are separated from the southern tributaries of the great Amazon by a water-shed of no great elevation. In no part of the world do we find three such basins as those of the Amazon, Orinoco, Plata. A part of this chain is drained by the Pará, and separated by such slight elevations. The mountains of Guiana, indeed, hardly can be said to separate the Amazon and Orinoco: they form an almost insalubrious mass, and only fill up the space between the lower courses of the two rivers, while the fall different from 8000 to 12,000 feet above the level of the sea, to the low flats of the Orinoco, the Essequibo, and the Amazon, covered with forests which almost exclude the light of day, adorned with all the magnificent foliage of a tropical climate, and swarming with almost endless forms of animal life from those of the Pará. The Amazon, Orinoco, Plata. A part of this chain is drained by the Pará, and separated by such slight elevations. 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appears to the eye like one dead level, without wood, without a stone, almost without water, in parts covered, during summer, with thistles taller than a man, in other parts clothed with rich grass, which furnishes food for innumerable herds of wild cattle. The enormous pampas of Patagonia, Buenos Ayres, and the most northern province of Tucuman, have been stated, at a guess, to be four times the area of France; and, perhaps, the estimate is not excessive. From the mouth of the Rio de la Plata, the continent of America narrows southward through 20° of latitude, the greater part of the eastern edge being little known to Europeans. From about 40° of S. latitude, the country called Patagonia commences on the east coast; though not without some rivers, it appears to have none that run far into the interior; and it is hardly probable that it will offer many inducements for the white man to attempt to establish himself among a warlike race, whose climate and whose soil afford no great encouragement to European settlement. This mighty peninsula of South America, whose northern limits are warped by the perpetual breezes of the tropics,ominates, like the northern parts of the continent, through a immense stretch of latitude, in a region generally represented as cold and barren. In summer, however, when the north winds blow, the temperature of the island of Tierra del Fuego is moderate; nor is it so the coast from them, though the northern parts of the country, from the Rio de la Plata to the entrance of Magdalena's Strait, is comparatively low, and, as far as we know, it bears the general character of the pampean region. That the range of the mountains, and the scale of intellectual power is somewhat analogous to the ungenial nature of the southern parts of their islands.

It appears from Captain King's brief remarks on the geography of the Patagonian regions, (Journal Land Int, Arg. Soc.) that the immense pampas of Buenos Ayres probably extend south to the eastern banks of the Aconcagua, and the northern shores of the Otway and Skying waters. From the Aconcagua to the Skying and Otway, there are no hills seen the general nature of the Patagonian coast, from the Rio de la Plata to the entrance of Magdalena's Strait, is comparatively low, and, as far as we know, it bears the general character of the pampas region. That the range of the mountains, and the scale of intellectual power is somewhat analogous to the ungenial nature of the southern parts of their islands.

The phenomenon of earthquakes is now exhibited in South America with more activity than in any other quarter of the world; nor is this North America, the source of them, from whence they are spread out almost everywhere in the world. Their sphere of action appears to be, perhaps, more limited, and their effects less terrible. The great earthquake which, on March 26, 1812, laid Caracas and La Guairna in ruins, was felt near New Madrid on the Mississippi, where its effects were only less disastrous because the place was less populous. The forest near New Madrid presented, for some years afterward, 'a singular scene of confusion; the trees standing inclined in every direction, and many having their trunks and branches broken. (Long's Exp, to the Red River of De la Par.) These declinations, which are very common about New Madrid, are felt, it is said, from New Orleans to the mouth of the Missouri, and from the settlements on the Red River and the Washita to the Falls of the Ohio, felt also in the Appalachian system and on the Atlantic slope, though we know of no mischief in any damage has been done. But in South America, earthquakes are matters of ordinary occurrence, though, we believe, they are always within the more immediate sphere of their origin. From Cordilleras, along the northern coast of Venezuela. On the eastern coast of America they seldom occur. It is asserted, that where thunder and lightning are common in South America, earthquakes are unknown; while at Lima, where thunder and lightning seldom occur, earthquakes are an ordinary occurrence. Whether this generalization is really a safe one may perhaps be deducted, till it is confirmed by further observation.

The climate of South America necessarily varies with the extent of latitude which the continent traverses. The latitude, however, is only one of the causes of the varieties of temperature. The extensive and lofty mountain-ridge, the highest peaks of which are covered with eternal snow, and the great height of the plateaus, added to the steep descents and great depths of the valleys that bring the system of the Andes, necessarily produce a great variety of temperature within small distances. The Andes have a curious effect on the distribution of rain in South America. The wide plains on the east are deluged, with the winds by the heavy perennial rains from November to May. The mountainous valleys to the west, receiving the narrow belts of maritime air, are almost entirely without rain, at least within the tropics. It is said, however, that this phenomenon is confined to those parts where the mountains come near to the Sea. In Chili, the north-west winds bring abundance of rain. As to temperature, that of Caracas is in winter, an average of Fahrenheit 70°, minimum 52°; in summer, maximum 85°, minimum 68°.

Chili, also, though bearing upon the torrid zone, never feels the extremity of heat. At Lima, the thermometer, in the warm part of the continent, viz. Buenos Ayres and M. Video, the weather is wetter, and in the winter months often boisterous and the air cool, whilst in summer the heat is very great and the thunder-storms often terrific. The climate of Quito is very suitable for agriculture, the autumnal period of February, March, and April, 42°; and for the three following months, the winter part of the year, it is 31°. The extensive pampas produce in the dry season an effect not unlike that of the kamsin in the arid regions of Egypt. Reputable missionaries, in the province of the same name, a hot wind has felt in the southern month of December, which blisters the skin and face, seizes the leaves, and shrivels the wild trees. (See Temple's Travels in Peru, p. 481.)

The western coast of North America, and the eastern coast of South America, were explored by the Spanish navigators, in 1555, 1573, and 1586, the former, as far as Humboldt's work, and the latter, as far as the Rio Negro, with a few notices of what lies along the coast of Blessed Ayres, and near it, as far as the Rio Negro, with a few notices of what lies along the coast of Blessed Ayres, and near it.
and Bonpland, whose examination of this part of South America began in 1799, and did not terminate till 1804. In these five years they examined and travelled from Cevdar to Caracas, and made various excursions in the neighbourhood of both towns, they penetrated across the great plains to the Rio Apure, down which they sailed to its junction with the Orinoco. They then ascended the Orinoco by its principal tributaries, and reached the mouth of San Fernando de Atabapo, at its confluence with the Atabapo and the Guaviare, near lat. 4° N. From this point they sailed up the Atabapo to the mouth of the Rio Temi, which latter they ascended as far as to its junction with the Tuamani, and then to the village of San Antonio de Davita. Here they were detained for some days till their boat was carried across the land to the Pimichin, a tributary of the Rio Negro. Entering the Pimichin, they descended it till it brought them into the Rio Negro, down which they sailed till they reached the mouth of Cassius quarri channel, by which the Orinoco communicates with the Rio Negro, and through that, as has just been mentioned, with the Amazonas. They afterwards returned up the river to the mouth of the Cassiusquro, along which, on their return, they traced the whole of its junction with the Orinoco at Esmeralda, having for the first time completely traced the connexion between the Amazonas and the latter. From Esmeralda they sailed down the Orinoco to Angostura, thus retracing part of their former voyage, but also following the great western portion of its course. Angostura they proceeded across the country to New Barceloia on the coast. After a visit to Cuba they again returned to the continent, and having landed at the town of Carthagena, proceeded to the mouth of the Magdalena, which they ascended as far as it was navigable. On leaving the Magdalena they pursued their route to Popayan and Quito, and penetrated southwards as far as Lima, in the course of their journey crossing the Cordillera of the Andes no fewer than five times, and obtaining much new information respecting the upper portions of the river of the Amazonas, a part of one of the branches of which they ascended, having entered it at a point considerably higher than that where De la Condamine had begun his voyage. From Lima they went by sea to Cartagena, and thence, in the same manner as to Pipo New Spain, the examination of the town and vicinity of Mexico and the other parts of that interesting region concluded their researches in America, in the course of which, besides large and important accessions to natural history, antiquities, and the part of its junction with the Orinoco at Esmeralda, having for the first time completely traced the connexion between the Amazonas and the latter. 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From Lima they went by sea to Cartagena, and thence, in the same manner as to Pipo New Spain, the examination of the town and vicinity of Mexico and the other parts of that interesting region concluded their researches in America, in the course of which, besides large and important accessions to natural history, antiquities, and the part of its junction with the Orinoco at Esmeralda, having for the first time completely traced the connexion between the Amazonas and the latter.

Still further additions to the geography of South America may soon be expected from M. Bonpland, who, having gone out to Buenos Ayres in 1818, two years prior to the publication of Spix, embarked on a journey to Paraguay, where he was seized and detained by orders of France, who had acquired an absolute authority in the province. He has recently, however, obtained his liberty, and is said to have now returned to France. From the few opportunities of observation which he has had, his researches may expect a large addition to our knowledge of the hydrography of the Rio de la Plata, and the natural history of this portion of South America.

In 1817, when the Archduchess of Austria was married to Don Pedro, then the Prince of Brazil, Dr. John Bapt. Von Spix, and Dr. C. F. Phil. Von Martius, were sent out in the train of the princess by the King of Bavaria, with instructions to explore some portion of that region of South America. Having landed at Rio de Janeiro, these travellers proceeded to the interior, and afterwards to Villa Rica, where they remained for some time. From this point they travelled along the river of the Amazonas, which they ascended as far as to Puaxe, five hundred miles up the country, from whence pursuing their route in the same direction, they at length reached the mouth of the Rio Negro. Martius then proceeded up the Juruá, but Spix, following the main stream, crossed successively the Jurua, the Jatunay, and the Ica, and penetrated to Tatuatiba, the last Portuguese settlement, at the mouth of the Jupary. On meeting again, the former and the latter part of the expedition were united, and sailed down the Amazonas to Pará, where they landed and continued their voyage on the other side the river, extending along the coast of Brazil, and making observations that have greatly increased our knowledge of its length, breadth, and depth. This great and important work is now in the press, and will, it is to be hoped, speedily appear. In addition to the preceding geographical description of the lands of South America, an account is given of the plants and animals that were observed, and of the different customs and manners of the several tribes of the inhabitants.

A great part of the precious metals used in the world are brought from America, and, with the exception of the Mexican mines, almost all from the southern continent. Gold is found in New Granada, Peru, Chili, La Plata, and Brazil, and in North Carolina; and diamonds have been found in some parts of British Guiana, in Brazil, and in the mouth of the Amazonas to the frontiers of Peru. Spix and Martius brought home extensive and valuable collections in natural history, which have been deposited in a building at Munich, called the Brazilian Museum, erected expressly for their reception.

The following statement, from a parliamentary paper, exhibits a remarkable decrease in the supply of the precious metals drawn from America.

Gold and Silver Mines.—Statement of the value sterling of gold and silver raised in each of the several mining provinces of America from 1810 to the present year, exclusive of twenty years from 1790 to 1810 inclusive, and from 1810 to 1829 inclusive; derived from the returns of British consular agents.

<table>
<thead>
<tr>
<th>Country</th>
<th>Gold</th>
<th>Silver</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexico</td>
<td>£1,913,075</td>
<td>£633,872</td>
<td>£2,546,947</td>
</tr>
<tr>
<td>Panama</td>
<td>23,603</td>
<td></td>
<td>23,603</td>
</tr>
<tr>
<td>Chili</td>
<td>1,904,514</td>
<td>875,188</td>
<td>2,779,692</td>
</tr>
<tr>
<td>Buenos Ayres</td>
<td>2,161,940</td>
<td>7,893,942</td>
<td>10,055,882</td>
</tr>
<tr>
<td>Total of America</td>
<td>6,003,132</td>
<td>54,162,725</td>
<td>60,165,891</td>
</tr>
</tbody>
</table>

The following statement shows the value of the productions of other countries, exclusive of wool, for the year 1829:

<table>
<thead>
<tr>
<th>Country</th>
<th>Gold</th>
<th>Silver</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexico</td>
<td>9,706,875</td>
<td>55,665,740</td>
<td>65,372,615</td>
</tr>
</tbody>
</table>

V. THE MAN OF AMERICA. The native Americans constitute, at the present day, by their physical characters, not less than by their languages, a race different from those known before the discovery of America. The following description of them has been given. The natives of this part of the world are, in general, of a robust frame and a well-proportioned figure. Their complexion is of a chestnut-brown color, with reddish or reddish-copper hues, the cheeks are well rounded, the hair is black, long, coarse, and shining, but not thickly set on the head. Their beard is thin, and grows in tufts. Their foreheads are low, and their eyes are lengthened out, with the outer angles turned up towards the nose. The eyebrows are not unlike those of the negro, the nose a little flattened, but well marked; the lips extended, and their teeth closely set and pointed. In their mouth there is an expression of sweetness, which forms a contrast with the harsh character of their countenances. Their head is a square form, without a forelock, and tapers towards the chin. Their features, viewed in profile, are prominent, and deeply sculptured. They have a high chest, massy
thighs, and arched legs; their feet are generally large, though some have been noticed to have small feet and hands, and their whole body is squat and thick-set. Though the shape of the face, and of the vertex, frequently depend on physical means, yet, independently of the custom which prevails amongst them of disfiguring the heads of infants, there is no other people in the world in whom the frontal bone is so much flattened above; and, generally speaking, the form of the body is so different from the general characters of all the nations of America, with the exception, perhaps, of those who occupy its two extremities. The northern Eskimaux, for instance, are below the middle stature; the Abipones, it is said, and still more, especially the Patagonians, are of extraordinary height. This muscular constitution, with a tall figure, is in some degree met with among the natives of Chili, as well as the Caribbeans on the banks of the Caroni, a tributary of the Orinoco, and amongst the Arkansas, who are esteemed the handsomest natives of this continent.

The copper or bronze hue of the skin is, with some slight exceptions, common to almost all the nations of America; upon which the climate, the situation, or the mode of living, appear not to exert the slightest influence. Some of the tribes in Guiana are described as nearly black, though easily distinguished from the negro. The colour of the natives of Brazil and of California is deep, although the latter inhabit the temperate zone, and the former live near the tropical sea. Such are the general characters of the Indians of Quito and New Granada, who inhabit a precisely analogous climate. The nations dispersed to the north of the Rio Gola, are darker than those that border on the kingdom of Guatemala. The Indians who, in the tropical regions of the west coast of the Cordilleras of the Andes, have a complexion as much copper-coloured as those who cultivate the banana under a burning sun, in the narrowest and deepest valleys of the equinoctial regions. The Indians who reside between the sources of the Rio Gola, have perhaps been long before the conquest, while the Arabinates that wander on the plains of South America are perfectly or nearly naked, and consequently are always exposed to the vertical rays of the sun. These facts show that the colour of an American does vary very little, from locality to locality, which he actually occupies; and never, in the same individual, are those parts of the body that are constantly covered, of a fairer colour than those in contact with the air; the infants, moreover, are never white when they are born.

It was formerly supposed that the Americans were without beards, and certainly there are many among them who have neither beard nor hair on any part of their person, except the head. But the Indians who inhabit the torrid zone of America, have an extremely small head, which becomes longer by shaving, and among the Patagonians there are many who have beards. A late traveller (Temple) asserts that the Chiriguano Indians of the province of Tarija are beardless, without stating any opinion as to this language among so many others, and that of the Patagonians, which has been described by the missionaries, is of a singular character, to which, no one has given a classification.

Almost all the Indians in Mexico, and some on the north-west coast, wear moustaches. An inference has been drawn that the Indians have a larger proportion of beard to their height, than the whites. The deficiency of beard does not exclusively belong to the Americans, nor is it by any means a certain sign of degeneracy, for some beardless races, such as the negroes of Congo, are more robust, and of colossal size.

The other characters, according to some opinions, appear to establish an affinity between the Americans and the Mongol race of Asia, as well as the Malays, and others; but the resemblance does not extend beyond mere colour, and cannot apply to the more essential parts—the cranium, the face, and the hands and fingers. The great number of separate languages proves that a considerable portion of the American tribes have long existed in that savage solitude in which they are still plunged. Dr. Von Martius (London Geographical Journal, vol. ii.) has ascertained the names of more than two hundred and fifty tribes, some of them consisting of very small numbers, in the interior of Brazil: many of these numerous subdivisions are, no doubt, closely related to one another, but the present splitting up of the Brazilian Indians is a curious phenomenon. The want of a common language among so many tribes can be the effect of some great political convulsion, and it is, at the same time, a cause of gradual decay and extinction of races. Traditions, monuments, manners, and customs, seem to indicate some affinity with Asia, but the communications, if any, must have been anterior to the development of the state of things prevailing in the present day.

In regard to the origin of the Americans, numerous conjectures have been formed. It has been supposed by one writer, that America was peopled from the dispersion of the Israelites—by another, that the Egyptians were the ancestors of the Mexicans; the Mayas, the descendants of the ancient Carthagins and others, that the ancient Celts, made expeditions to America. Indeed, what theory is there, however absurd, that will not meet with supporters, as long as facts are few and doubtful? But the most curious and curious is that, which appears to the Norwegians, and the theory of the purely Asiatic origin of the Americans has met with numerous supporters, among whom Vouter of Berlin, in his discourse on the Languages of America, inserted in Adelung's Mithridates, book 3, the following passage: 'It is a demonstrable fact, that the people of America, in Greenland, and on the coast of Labrador, as also to the west of it, in the vicinity of the Asiatic coast, there dwells a people which is one and the same race with the inhabitants of the north-east coast of Asia, and of the thing rather difficult to brooch. It is not probable enough, but what does it prove as to the great mass of the American population? In fact, the state of our knowledge is not such as to warrant us in coming to any certain conclusion on the subject. What the real affinity? Is this rather a question of the pure family of mankind, is a question involved in obscurity; and speculation on this subject without a larger collection of facts is not likely to forward the discovery of truth.'

America presents, both in the northern and southern continenets, the Table Land of India, and no race that inhabited the continent at the time of its European discovery. In the valley of the Ohio, and indeed in numerous other parts of the United States, are found mounds of earth, and fortifications undoubtedly of high antiquity; the pyramids of Mexico, the remains and the bas-reliefs of the ancient cities, the recesses of the Usumacinta, the ruins of the Peruvian Indians, are, according to some opinions, the work of races anterior to any now existing; but how a more civilized race was compelled to yield to one less advanced, so as to leave no traces but what we see, is a thing rather difficult to brooch. It is not probable enough, but what does it prove as to the great mass of the American population? In fact, the state of our knowledge is not such as to warrant us in coming to any certain conclusion on the subject. What the real affinity? Is this rather a question of the pure family of mankind, is a question involved in obscurity; and speculation on this subject without a larger collection of facts is not likely to forward the discovery of truth.
Europe, and the same process has taken place in the New World, and is now taking place in Van Diemen's land. The white man covets the fertile lands which the native only roams over in pursuit of prey, or partially cultivates; and the process of the occupancy of the soil by the white man began by the European colonist, especially those of the Teutonic stock, is only limited by the nature of the soil and the climate. The native gradually recedes and disappears till the white man has reached the boundaries of agricultural occupation, when he俨然 arrests his progress. Thus in North America, where the exclusive habits of the white colonist are intolerant of all modes of life but that which he prescribes, the Indian and he are mutual enemies; and the disappearance of the aborigines has regularly continued, with the reduction of the Algonquian system, scarcely a vestige of the primitive races worth noticing is found; from the Appalachian to the borders of the lower Mississippi the same history is rapidly in progress, and the western limits of the white man's rule must be the rude plains which he cannot cultivate. The Indian has only been preserved in the two Americas where he has mingled with the white man, and partly adopted his habits; or where impenetrable uninhabited forests, or cold inhospitable regions, have allowed him to roam free, as he does the canyons of Chili, his own courage has saved him from extermination. The islands of the Columbian Archipelago present the singular spectacle of a whole race of people that has disappeared within the limits of recent and authentic history, as the last occupied by the white man of Europe as the master, and the black man of Africa as the slave; and who can say what may be the future revolutions in the history of these new occupants?

The European settlers have been, in North America, principally the British, with a considerable number of French and Spaniards, some Dutch, Swedes, and, especially in the state of Pennsylvania, U. S., a considerable number of Germans; in South America, the Spaniards and Portuguese have been the chief settlers, with some Dutch and English. The peculiar characters of the various settlements are found under the heads of the countries to which they refer.

The population of the western hemisphere has thus been distributed:

| Indians | 6,800,000 |
| Latinos | 33,647,000 |
| Portuguese | 3,174,000 |
| French | 1,242,000 |
| Dutch, German, Danish, Swedish, and Russian | 216,000 |
| Indian languages | 7,645,000 |

But these estimates are necessarily very loose, nor is it easy to distinguish exactly the possession of the native tribes. They predominate, in North America, in the territories west of the Mississippi, and possess the vast regions north of the United States, and west of the St. Lawrence: native tribes are also found in Mexico and Guatemala. In South America, they occupy chiefly Patagonia, Tierra del Fuego, Guiana, Brazil, and many parts of the basins of the Orinoco, Amazon, and La Plata.

V. ZOOLOGY OF AMERICA. The southern portion of this vast continent contains an animal population which is, in a great measure, peculiar, and some of its mammals particularly, offer a large variety of forms and characters to which we find no corresponding types among the productions of any other country. In North America, the case is different; a great portion of it is placed under the same parallel, is subject in soil and climate to the corresponding parts of Asia and Europe. It is not surprising, therefore, that it should likewise resemble these continents in its zoological characters; more especially when it is remembered that the opposite shores of Asia and America approach within a short distance of one another at Behring's Strait. All animals which are capable of enduring the rigour of these high latitudes, may probably pass from one continent to the other, either by means of the ice, or by swimming to the different islands interposed between the opposite shores. Thus the common bear, the wolf, the fox, the glutton, the badger, the sable, the ermine, the beaver, the otter, the rein-deer, are cultivated in Sweden, in Siberia, and in northern America; and if only a few species, such as the bison and musk-ox, appear to be more confined in their geographical range, it is, most probably, owing to particular circumstances: at all events, there is not, perhaps, a single natural genus to be found north of the fortieth parallel in one continent which does not equally exist in the other two.

Out of 1346 mammals which have been described and indicated by zoologists, no fewer than 537 species are found in America, while only 82 in Europe, 65 in Siberia, 149 in the islands of the North Pacific; and in the earth in the variety of its mammals, contains only 422; Africa, 300; Europe, 180; and Australia, 86. The following table exhibits the peculiar characters of American mammalogy, the manner in which the different orders are distributed with relation to this continent, and the relative proportion which the number of American species bears to the whole number in each order. Indigenous animals alone have been included; the ox, horse, and other domestic quadrupeds, imported by the European colonists, do not properly belong to American zoology.

<table>
<thead>
<tr>
<th>Orders</th>
<th>Whole No. of known species</th>
<th>Whole No. of species belonging to American continents</th>
<th>No. of species belonging only to American continents</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Quadrupans</td>
<td>186</td>
<td>82</td>
<td>0</td>
</tr>
<tr>
<td>H. Chiroptera</td>
<td>192</td>
<td>82</td>
<td>0</td>
</tr>
<tr>
<td>III. Carnivora</td>
<td>390</td>
<td>140</td>
<td>34</td>
</tr>
<tr>
<td>IV. Marsupiida</td>
<td>67</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td>V. Rodentia</td>
<td>906</td>
<td>130</td>
<td>7</td>
</tr>
<tr>
<td>VI. Edentata</td>
<td>53</td>
<td>30</td>
<td>0</td>
</tr>
<tr>
<td>VII. Pachydermata</td>
<td>30</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>VIII. Ruminantia</td>
<td>157</td>
<td>30</td>
<td>2</td>
</tr>
<tr>
<td>IX. Cetacea</td>
<td>76</td>
<td>26</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>1346</td>
<td>537</td>
<td>490</td>
</tr>
</tbody>
</table>

The peculiar and appropriate characters of American mammalogy are distinctly shown by this Table. Of the 537 species contained in the second column, 57 only, or little more than 1 in 10, extend into Northern Asia and Europe; and if from these we deduct the 14 cetaceas and 15 species of carnivora comprised among the carnivorae, which inhabit the Frozen Ocean, the common northern boundary of these two continents and of America, it will be found that the land animals common to all three are reduced to the comparatively trifling number of 57; not a single species extends to the south of the isthmus of Darien. The great majority of them, indeed, belong to the carnivorous fur bearing quadrupeds, to the chase of which we are partly indebted for our geographical knowledge of the northern parts of Asia and America. They include the common brown and the Polar bears, the badger, and glutton, the dog, wolf, Arctic and common fox, and two or three other species or varieties, two or three feline animals of the lynx kind, the common weasel, the ermine, the pine marten, and the marine and river otters. The seven species common to the old and new worlds are, the beaver, the common rat and mouse, the common squirrel, the varying or Polars hare, the sable or sussic marmot, and the common water rat; the two ruminating quadrupeds are the elk and reindeer.

The mammalogy of the extensive continent of South America, at least as far as we are at present acquainted with it, is altogether peculiar. A very few species of carnivora and marsupialia, indeed, such as the cougar and opossum, extend into the southern parts of the United States; but the quadrumanus, edentata, and pachydermata, without exception, and by far the greatest number of species belonging to the other orders, have not passed the isthmus. The seven species common to the old and new worlds are, the beaver, the common rat and mouse, the common squirrel, the varying or Polars hare, the sable or sussic marmot, and the common water rat; the two ruminating quadrupeds are the elk and reindeer.

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the eight terrestrial orders have species common to this and other continents; whilst of the remaining five, the American species are exclusively confined to the southern hemisphere.

Among the Mexicans and Peruvians were found the very few domestic animals which existed in America previous to the arrival of Columbus; and even they possessed only the llama and vicuña, or pace, (Auchenia lama and vicuña,) and a small species of lap-dog which they called aloc, and which is believed to have resembled the small naked variety at present found in Barbary and the Levant. The lama and pasco were used as beasts of burden, and the latter of various kinds fashioned into a rich and beautiful wool, which was manufactured into cloth of a beautiful texture: the flesh of both species supplied an agreeable and wholesome food. The horse, the ass, the ox, the sheep, and the pig, are all strangers to the New World. Its inhabitants, therefore, in their progress to civilization, deprived of the assistance of these valuable domestic animals, had to contend with difficulties and to overcome impediments which were utterly unknown to the more fortunate Asiatics. Yet America is not destitute of herbivorous animals, which, in a domestic state, would have vastly contributed to increase the power and resources of the native tribes. Of the thirty ruminating animals, indeed, which are found in America, by far the greater number belong to the domain of the wild, and are not well adapted for domestic purposes.

Still the bison, (Bos americamus,) the big-horned sheep, (Ovis montana,) and the Rocky Mountain goat (Capra americana) would have been most valuable domestic animals, and have materially improved the condition of the native inhabitants. The purpose of these animals, which are all preserved as curiosities, with the other indigenous animals of the country, in the menageries of Montezuma.

Since the planting of the European colonies and the introduction of agriculture and civilization, many of the domestic animals of the Old World have increased prodigiously in every part of America. In many places they have even regained their pristine state of savage freedom; innumerable herds of wild oxen cover the rich savannas of Brazil and Paraguay, and Colombia and Peru. These animals, however, are not equally wild, are found in every part of the Pampas of South America, and likewise in the high plains of the Arkansas in North America. A nominal property in these wild herds is generally claimed by particular individuals, and they are assembled and driven by the natives at definite periods, prepared to be marketed and counted; but, in all other respects, they are left to the unrestrained exercise of their natural freedom. The horned cattle are principally valuable for their hide and tallow, which are for the most part shipped to European ports, and constitute one of the staple commodities of the countries. From Buenos Ayres and Montevideo alone, as we are assured by Arara, upwards of 800,000 hides are exported annually. The custom of hunting cattle for this purpose is very common in South America, and a native is never considered properly educated till he can throw the lasso, or use the knife with skill and dexterity.

For the purpose of procuring hides, it is necessary that a number of horsemen should unite. These arrange themselves in two lines, forming an angle; they then separate a small troop of cattle from the general herd, and press them in upon right and left, whilst the hunter who forms the apex of the angle, with a small semicircular adze which he carries for that purpose, houghs each beast in succession as he passes, till the whole is completely disabled. During all this operation, the hunters are kept at a sharp round gallop, but as soon as they have thus secured a sufficient number of beasts, they return upon their steps, preceded by the same individual who formed the point of the angle before, and whose present duty it is to cut the animal in which he does in a most dexterous manner by a single stroke of a small dagger, whilst his companions who follow him are engaged in flaying the carcases and separating the tallow. While the operation is proceeding, another line of horsemen, for the purpose, apparently, to their proper station, and the European animals. The horse is secured to the saddle, or girths, of the rider, and in this way he will gallop for miles, dragging a wild ox behind him. In the immense Pampas of South America, there are numerous troops of wild horses, which, though of less importance than the horned cattle, are not without their uses to the inhabitants; in fact, they furnish the only means of crossing the vast expanse of country, and of communicating with the neighbouring countries. The traveller and his guide set off on horseback, driving a wild troop of these animals at full gallop before them: when one beast is exhausted, another is secured by means of the lasso, the saddle is changed, the rider mounts and continues his journey, repeating the same operation as often as requisite till he arrives at his station for the night; here he obtains a fresh troop, and in this manner will travel for many days in succession, at the rate of 100 or 120 miles a day. Much use is made of the wool of these animals, as well as on other subjects connected with South America, may be found in Captain Head's Rough Notes of a Journey across the Pampas, and also in Temple's Peru. Arara informs us, that the Indians of the Pampas are very curious after horse-flesh, and Mr. Ross Cox, in his late valuable account of the Columbia River, assures us that not the Indians alone, but likewise the European fur-traders who annually ascend that river, do for its subsistence chiefly depend on horse-flesh, and that to procure the horses for the kettle, they are often obliged to give an extravagant price, and sometimes even to sacrifice the animals which are necessary for the transport of their merchandise.

The ass, the sheep, the goat, and the hog were likewise introduced into the United States, and by the early European colonists; with the exception of the hog in the United States, they have not increased in the same proportion as the horse and ox. The ass is principally employed in the old Spanish and Portuguese settlements in the United States, and is generally employed in transporting the precious metals, and possess all the wonderful sagacity in discovering and avoiding danger, and all the security of foot, which have, in all ages of the world, rendered the ass a valuable animal in commercial purposes. Of wild indigenous animals, as has been already observed, America contains a prodigious variety, many of which are altogether peculiar, and others present types of organic structure to which we find no analogous forms in any other region. Of the apes and monkeys, the American species are not the least singular. They are called monkeys, it is true, because the original discoverers of the country were ignorant of a more appropriate term by which to designate them, and because they bear a greater resemblance to the true apes than any other animals but the orang-outang, as in the tail, and the thumbs on the foot, as well as on the kind; they have universally ten molar-teeth in each jaw, as in man, and are generally provided with cheek-pouches and naked callouses: the American monkeys, however, are a much finer species of animals than the latter organs; they have universally twelve molar-teeth in each jaw, and the thumbs of their fore-hands are, more properly speaking, versatile, or capable of occasional opposition, than habitually opposed to the other fingers. One extensive genus (Ateles) is absolutely destitute of thumb altogether, and the great majority of the species are provided with a prehensile power in the tail, which converts this organ into an actual fifth limb, and enables the animals to rest suspended from the branches, or swing from tree to tree with equal ease. There are two principal species of these monkeys; one of which is the tekul or white-handed monkey, and the other the marmoset, or brown-hand monkey. The first species is limited to the mountains of the Andes and the Amazon, the latter to the mountainous countries near the coast of North America. The other species are destitute of this prehensile power in the tail, but exhibit all the other characters of the American quadrupedes in general.

Compared with the apes and monkeys of the Old World, the sages and satyrs of America are certainly an inferior race of beings. In no instance do they exhibit the close proximity to man, which we observe in the orang-outang and chimpanzee; and their inferior links acquire, in proportion, more of the animal than of the human nature. They are, in other words, the lowest of all the animals, and are really inferior to the lemmur and other inferior animals. All are remarkable for the gentleness of their disposition and the docility of their character, equally opposed to the ferocious nature of the baboons, and the restless petulance of the monkeys. Their habitat is entirely confined to the tropical forests of South America, which resound at the rising and setting of the sun to the loud drum-like voice of the alwats, or prancing monkeys, (Mycetes,) the hoarse-cry of the Ateles, and the
shril, piping voice of the saijus (Cebus). All these genera are remarkable for the prehensile power of their tails. Of those which are destitute of this faculty, the salpins (Cal-liharta) are distinguished by the smallness of their size, the elegance of their form, and the brilliancy of their plumage; in short, by the charm of the best effects of nature. A slight peculiarity of their motis, their graceful and playful disposition. The sikis (Pithecia) again join the general organization of the quadrumanous to the projecting snout and bushy tail of the fox, and at the same time they combine in their graceful manners and tardy pace of the slow-lumburs (Nycticebo) of Asia, and appears to be the only representative of these animals in the western hemisphere. All these animals are sought after and eaten with avidity by the free Indians; and every precaution is taken to guard against their attacks. Happily, they are by no means numerous in America; the species, however, exists in Guiana, Colombia, and Brazil. No species of the rossassetes (Pteropus) or frugivorous bats exist in America; in other respects the cheiroptera of this hemisphere differ in no essential character from those of the Old World.

The species, (C. argenteus) is the largest, and most remarkable of all the carnivorous mammals. Of 320 species belonging to this order, America contains no fewer than 140, or seven-sixteenths of the whole, and of these the great majority, as has been already observed, are altogether peculiar to this continent. Those which are not limited to the northern latitudes, are too excessive hemorrhage: the vampires are, consequently, much dreaded by the inhabitants, and every precaution is used to guard against their attacks. Happily, they are by no means numerous in America; the species, however, exists in Guiana, Colombia, and Brazil. No species of the rossassetes (Pteropus) or frugivorous bats exist in America; in other respects the cheiroptera of this hemisphere differ in no essential character from those of the Old World.

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properly so called, which appears to have the power of climbing trees.

Boa, and other tribes of mammals, the edentata are those which are most especially characteristic of the zoology of America. Of twenty-three species, and seven genera, which compose this singular order of animals, no fewer than twenty species and five genera are exclusively confined to South America. These genera are the ai and sloths, (Bradypus and Aeches,) the armadillos, (Dasypus,) the chilamphores, (Chlamyphorus,) and the ant-eaters, (Myrmecophaga.) Of the two remaining genera, the aartwark (Orycteropus) inhabits the Cape of Good Hope, and the porcupine (Coendou) is found as far north as Mexico in this hemisphere. Among the southern continents of Asia and Africa: the former contains but one, the latter two species. The genus Chlamyphorus contains but a single species, (C. truncatus,) which inhabits Chili, and lives almost entirely beneath the surface of the earth. The ant-eaters (Myrmecophaga) are entirely destitute of teeth, and, as their name imports, live exclusively upon ants, which they catch by means of their long, cylindrical tongues, covered with a glutinous saliva. The great ante-bear (M. julata) is also a very large and powerful dog, though destitute of teeth, and slow of foot, defends himself with courage and success, by means of his large and powerful claws, even from the attacks of the jaguar. The small species, (M. didactyla,) about the size of a rat, has a prehensile tail and lives exclusively upon ants. There is also another species, (M. Scalopus,) a third species of intermediate size, (M. tannenbush,) which is likewise said to ascend trees, though it is without the prehensile power in the tail.

America is as remarkable for its poverty in pachydermata as for its richness in edentata, and this is another most singular character in its zoological productions. The order Pachydermata contains only four abundant supplies of vegetable substances, and uniting to defend themselves from the attacks of birds, are smaller than the African species, from which it is further distinguished by having three toes completely developed on each foot. It is found principally on the pampas or plains of Buenos Ayres, and Patagonia, from the plains of Amazonas to the straits of Magellan. There are no bustards (Otis) in this part of the world, but the agami, or trumpet bird, (Psophia,) the caraima, (Dicholophus,) the jabiru, (Mycteria,) the jacucaus, (Porra,) and the kiama, (Pulamaeas,) are genera altogether peculiar to America, and are the most remarkable grallatetres, or wading birds of the New World. The scarlet ibis (Ibis ruber) and the American flamingo (Phoenicopterus Americanus) are characterized by the uniform deep scarlet colour of their plumage, and their singular form and situation. Among the New World, this continent contains an abundant supply, and possesses specimens of all the different genera which inhabit the Old World. There is, however, nothing peculiar in this part of American ornithology; and indeed, the order of the gulls and auks is not very distinguished by the excellence of the feathers, which enables them either to walk, swim, or fly, as the occasion may require, are more equally and universally distributed over every part of the earth, than any other group. The other species of this family are as follows:

The reptiles of America are numerous, and often important, even in an economical point of view, though like the generality of this class in other parts of the world, the great majority of them are absolutely useless, and some dangerous. Among the poisonous are the marine race of crocodiles (Testudo mydas). This animal resortz yearly to the islands and shores of the Orinoco, and other larger rivers of tropical America, and also to the shore of the islands in the Columbian Archipelago, to deposit its eggs, which it burns by
thousands of the sand, and which are eagerly sought after by the Indians who annually resort to these haunts of the turtle for the purpose of procuring them. Three or four species of alligators likewise inhabit the rivers of the American continent, and the large islands of the West Indian group contain a species which is closely allied to the common crocodile of Egypt. The agamous American crocodile inhabits the Cordilleras in all those regions to the south which once owned the dominion of Spain, form what may not unaptly be called a back-bone to the whole continent, dividing it from Patagonia to the Mackenzie River into two portions of nearly equal but unequal breadth; the eastern, being many times wider than the western, which is comparatively little more than a line of coast.

The vegetable productions of the two sides of this dividing line are so exceedingly different, that it will be indispensable to notice them separately.

The most northern station in which vegetation has been discovered, is Melville Island, 74° 50' N. lat. Of this desolate region a very accurate account has been drawn up from the materials collected by the officers attending Captain Parry, and from it we learn, that although the mean temperature of the year is 1° to 2° below zero; and that of July, even on shipboard, where it may be supposed to be influenced materially by the fogs that are constantly burning, but little more than 15°, yet there is considerable diversity. The species of plants are so limited as to maintain an existence. They are, however, all of a very humble growth. The principal part consisting of saxifragas, grasses, cruciform plants, mosses, and lichens: not a tree or even a bush is able to rear its head. The most small, a single pine, at the Parry Point, except a little willow, (Salix arctica,) which rises six inches high. It is in these latitudes that the red snow-plant (Protococcus niveus,) that most simple of cryptogamic vegetables, exists in all its beauty, multiplying even among the snow itself, by which it stains with crimson patches of considerable size.

In this part of the flora a decided similarity exists to the plants of the same latitudes in Europe and Asia; in many instances the species are distinct, but the general character of the vegetation is the same. When we advance southward the features of the country are like those of Norway; vast forests of spruce fire, (Abies abla and migra,) among which grow the reindeer moss and the lichen, (Lobaria pinnata,) all over the land. To these are added different kinds of wild currants, gooseberries, whortleberries, and a shrub extremely similar to the Guelder rose of our own marshes (Viburnum ozycoccus), strawberries, and a variety of papilionaceous plants which should in the open plains. With these combined, as we continue to advance, the majestic poplars of Canada, (Populus husdonicus, and others,) birches, (Betula papyracea, and populosia,) and many sorts of oaks and ashes, together with butter nuts (Juglans cinerea) and hazel-nuts (Corylus cornuta), and others.

It would be entering into a far more elaborate view of this subject than the limits of this work will admit, if we were to attempt to trace such changes with any kind of precision; all we can do is, having now pointed out the fact of a gradual change in the face of vegetation, to proceed to notice the great and distinctive features of other American districts, still confining ourselves to the eastern side of the continent.

We will suppose that we have arrived at the frontier of the British possessions in North America, where the sugar maple (Acer saccharinum) pours forth its saccharine juice at the first arrival of warm weather, even before the snows have had time to melt; the azalias add their gay color to the bare branches of the tamarack; and the aspens, while the autumn is closed by the appearance of many kinds ofasters, which stud the woods and meadows with their white or violet starry flower-heads. At this point wheat and other kinds of grain with maize are successively reaped, and the sun, when its almost insufferable heat is at its height, is a common field-crop.

In the United States the great features of the North American flora are at length assumed. The forests consist of pines and larches unknown in Europe, of many kinds of oaks, of locust-trees, (Robinia pseudoacacia,) of enormous size, hickories, and ashes; among which the noble tulip-tree rears its towering head: in the swamps grow the deciduous cypress, (Taxodium distichum,) the white cedar, (Cupressus thyoides,) certain fir-trees, (Ficus pertnovus and Dites pendulum,) the rhododendron, the glaucous
kalmia, andromedas, sorrelcactum, and the g. amena magnolia; the sides of the mountains and hills are covered with the f. lindleyana, the himlock spruce, among which spring up the arboretous azaleas, the sorrel-tree, (*Andromeda arborcola*) and the beautiful mountain laurel (*Kalmia latifolia*); and, finally, the undergrowth of the woods and plains contains endless species of aster, several kinds of azalea and aspen, dwarf perrys, and various species of the exclusively American genera, latisima, phlox, garderia, callycanthus, &c. Tobacco, maize, and wheat, are the staple objects of cultivation.

The tropical, or the febrile climate, and have a great many short fevers, which hang from the branches of the trees like gigantic moss.

In southern Mexico we enter the tropics; and in all the valleys and plains where the temperature is not lowered by interrupting causes, the usual vegetation of such latitudes occurs. Tobacco, yams, and plantains, yew-tree, wild rose, sweet Ingram, and various other trees, comprise the advantages of a life of industry, or the use of those heated races who alone are capable of raising him to the condition of truly civilized man. Besides these and the other common articles of cultivation by the inhabitants of the tropics, such as sugar-cane, guava, maize, mango, plantains, which hangs from its native home, the cocoa-tree (*Theobroma cacao*), from whose seeds chocolate is prepared, is a most important species; the exportation of the seeds of this plant, which is found wild in the most burning districts, is valued at near 90,000 l. sterling annually. Pine-apples are wild in the woods; the American aloes (*Agave Americana*) yields, when wounded, an abundance of sweet fluid which is fermented into an intoxicating drink called pulque, and distilled into an ardent spirit known by the name of Vino Mescal; and grape-wine is also produced and much enjoyed in such situations, where little else will grow. In the low woods of Honduras are found those enormous forests which, since they have been wrested from the Spaniards, have been productive of such important commercial advantages to England from the produce of the mahogany and assafro trees. The whole province of trinidad contain. It is here also that the tamarind and the lignum vitae (*Guaiacum officiale*) are found; the vanilla, whose pods are extensively used in Spain, Italy, and France, and the mango, which derives its name from the city of Xalapa, near which it principally abounds.

But in the highlands of Mexico, all this glorious vegetation disappears; the eatable-rooted nasturtium (*Tropaeolum esculentum*) and the tuberous wood-sorrel (*Oxalis tuberosa*) supply the place of the yams; mahogany trees give way to oaks, and to the singular hand-tree, (*Chorisia monstrosa*), the five united stamens of whose flowers are disposed like the talons of a bird of prey; while the pine tribe finds its most southern limits, and the herbage is composed of genera either resembling or identical with those of the more northern regions.

In the lower parts of these highlands the vegetation of course is more nearly the same as that of the plains, but in many places it exhibits a striking combination of the two, as, for example, near Xalapa, where the woods contain great numbers of oaks, the stems of which are covered with a host of orchis, mimulus, and ferns.

In many respects the West Indies resemble the tropical parts of Mexico; the plants are either naturally the same, or have become so by importation from one shore to the other. In the whole flora epiphytal orchids and ferns, especially of the arboretous kind, are more abundant; certain fruit trees are in many cases more luxuriant, and more generally cultivated, as the avocado pear (*Laurus persica*), the mango, the custard-apple (*Anona squamosa*), and the guava (*Psidium*); and it is said that the cabbage-palm attains the height of 200 feet. Coffee is an article of general and advantageous produce, and tobacco of Cuba is only equalled by that of Persia and of some parts of the Burmese empire. Cloves are becoming generally cultivated: *alpinia* (*Myrtus pimenta*) is a common tree on the hills; and in some of the islands, the number imported is so great as to rival the exportation of the clove tree. *Ginling* (*Caludium esculentum*) is used at table as spinach with us. Considering the number of degrees of latitude over which the West Indies extend, it is impossible to give any general account of their plants which will be true of all of them; it must therefore be人居环境 mind, that in general their flora agrees with that of the continent in the same latitude over against which they lie.

In all the remainder of eastern tropical America similar characters of vegetation are found. Where the air is dry, and the climate noted hot, are the palm groves, and plantains, yew-tree, wild rose, and blue morning glory, which are so much more likely to be the source of the produce of the South American countries, and are the same as those of the West Indies. Where vegetation can be obtained, the; species are found, such as *etritis* and *comandra*; and the produce of the country is the same as that of the West Indies.

In Brazil the country is more open, and the scenery is consequently more diversified; besides which, it may be easily conceived that many more striking changes would occur in twenty-three degrees of latitude. A notion of its general aspect, and structure, is obtained by the observation of the plants of the almost central province of Minas Geraes, an account of which, by M. Auguste de St. Hilaire, gives us many facts relating to the state of its vegetation before it became altered by the intrudes of the Portuguese, and others, which constitute the principal difference in the two scenes. To see the full beauty of an equinoctial forest, it is necessary for the traveller to bury himself in its deep recesses; and there, indeed, instead of the fatiguing monotony of our European oaks and firs, every tree has a character...
of its own, each has its peculiar foliage, and probably also a tuft unlike that of the trees which surround it. Gigantic vegetables of the most different families intermix their branches; five-leaved bignanias grow by the side of bonduc-trees; cassias shed their yellow blossoms upon the rich forehead of an arborescent cactus; the magenta, never, with high thousand arms, contrast with the elegant simplicity of palms; and among the airy foliage of the mimosa, the cecropia elevates its giant leaves and heavy candelabra-shaped branches. Of some trees the trunk is perfectly smooth, of others it is decorated by knobs resembling letters of the alphabet; others are covered with thousand-foot arms, constantly sustained by the slanting stems of a huge wild fig-tree. With us, the oak, the chestnut, and the beech seem as if they bore no flowers, so small are they and so little distinguishable from their foliage. In the mountains beyond the limit of New Gran-
nada, between the level of the sea and eight or nine thou-
sand feet above it, are found the forests that contain the rare einochona trees, the rind of which, called the Jesuit's bark, is perhaps the most precious medicinal secretion of the whole new world. With them grow the winter's bark-tree, the gaily-marked flowers called Alstromerias, Fuchsia, with enormous blossoms, and many kinds of orchids.

Near the line, a new change comes over the face of nature. In the neighbourhood of Lima, towards the interior, epiphyllous orchidaceous plants just begin to exist: plants which, as we advance to the southward, become the most singular feature of the flora, on account of their enormous development. In the mountains beyond the limit of New Gran-
nada, the tree is rare, the giant is unknown, the cecropia is unencumbered by the foliage. Some split into leafy branches, with each a cluster, of the same size, the leaves of each a cluster, of the same size. Others have the branches loosely scattered, some of them are covered with the beautiful flowers of the pica di loro (chloras), beaucorey tree, and other herbs.
The present republic of Mexico, extending from the sixteenth to the forty-second degree of north latitude, comprises about 1,639,000 square miles, and perhaps as much as 5,000,000 of inhabitants. It was formerly under the dominion of Spain, and comprehended the two Californias, and the intendancies of Mexico, Puebla, Vera Cruz, Oaxaca, Merida, Valladolid, Guadalaxara, Zacatecas Guanajuato, San Luis Potosi, Durango, and Sonora, and the provinces of New Mexico, Coahuila, and Texas. It now consists of nineteen departments, and four territories or provinces, and a federal district.

The republic of Guatemala, or Central America, formerly Spanish, situated to the South of Mexico, comprises 200,000 square miles. It consists of five states.

South America comprehends the following states:

The most northern part, lately Colombia, but more recently divided into the three republics of New Granada, Venezuela, and Ecuador. The territory of each is not exactly ascertained, but the extent of the three states may be taken at about 1,290,000 square miles, and the population about 3,000,000. They were formerly Spanish colonies.

To the south of these, extends along the western coast, the republic of Peru, formerly Spanish. It contains about 600,000 square miles. Its chief city is Lima.

The republic of Bolivia, formerly Spanish, lies to the south of Peru. It contains perhaps about 320,000 square miles.

More to the southward is the republic of Chili, formerly Spanish, covering 130,000 square miles.

The United Provinces of La Plata lie between the two last-mentioned states and the Atlantic Ocean. They perhaps contain 700,000 square miles. The chief town is Buenos Ayres.

The empire of Brazil, formerly a Portuguese possession, is the principal South American state washed by the Atlantic. It perhaps contains near 3,000,000 square miles. The chief town is Rio Janeiro.

The republic of Banda Oriental, or Republica Oriental de l'Uruguay, lying immediately to the south of Brazil, with an extent of about 220,000 square miles.

Paraguay, watered by the Paraguay, and lying south-west of Brazil, comprises about 485,000 square miles. It should be borne in mind by the reader, that all these estimates as to the areas of such extensive countries are very uncertain, and little reliance should be placed on them. Authorities often differ very much. The estimates of the population are still more vague, and in general are a mere guess.

Guyana is a tract of country on the north-eastern coast, to the north of the river Amazon. It comprehends the British possessions of Demerara, Essequibo, the French possession of Cayenne, and the Dutch colony of Surinam.

Patagonia is situated in the southern part of America, beyond the 46th degree of south latitude. The Straits of Magellan separate it from the coast of Chili, which, like Patagonia, is inhabited by native tribes, and is very little known. The population of these countries, together with those of all the islands belonging to the southern extremity of the continent, is entirely unknown.

The islands often called the West Indies, in the Columbian Archipelago, situated in the Gulf between the two continents, are also included in America. They consist of the Bahama Islands, the Great Antilles, viz., Cuba, Jamaica, St. Domingo, Porto Rico, and the Lesser Antilles, viz., Barbuda, Antigua, Gudaloupe, Dominica, Martinique, St. Lucie, Barbadoes, Granada, Tobago, St. Christopher's, St. Vincent's, and Trinidad, besides a number of smaller islands. The population of the islands is about as follows: of the British islands, 800,000; of the French, 525,000; of the Spanish, 707,000; of the Danish, 46,700; of the Dutch, 26,000; and of the Swedish, 18,000. The republic of Haiti perhaps contains about 1,050,000. [See Antilles.]

The Bermudas of Somers Islands form a separate body.

AMERICANISM, a term used to express some peculiarity in the written or spoken language of the inhabitants of the United States of North America. Of all the colonies of Europe, which have been planted, the United States are yet the only parts that have been separated from the mother country, and have attained political independence. In consequence of the rapid increase of their population, the diffusion of education, and the springing up of a numerous body of native writers, we see a new phenomenon in the history of the world of two great nations separated by a wide ocean using the same language. To this fact their connection with two other nations, for the present at least, is a bond of unity and one of the great elements of civilization. The mother country may yet claim, and perhaps her claim will be allowed by some Americans, the privilege of a very rigid examination of the language, as perhaps it allows them to be current coin of the realm; but to attempt to reject all new words that America produces would be both absurd and ineffectual. New words and new conceptions are the parents of new terms, which, perhaps, increase quicker there than in an old country. The special differences between the spoken and written English language as it exists in America and Great Britain appear to be the following:—

1. Pronunciation; the use of words now obsolete in England, or used in different senses; the use of words in that part of the English language as they are still used in various provinces of England; and new words.

In pronunciation, there is much greater uniformity in the United States than in Great Britain, and the general standard is the mainly higher than in that part of America. Thus, for example, as Philadelphia, the pronunciation is at least as good as in any part of the British dominions. But still there are differences very perceptible when we compare the natives of two remote parts; and if we take into account the wide superiority of the Americans to the inferiority of foreigners, the entire absence of good education in some newly settled parts, and the want of a metropolis to fix anything like a standard of pronunciation, we think it will appear probable that the pronunciation may in time differ greatly in different parts. The prevalent opinion, before one part to another will help somewhat to check this tendency. The Americans generally sound the a more strongly than the English in such words as house, and also in such words as neighbour, and very rarely commit the fault of pronouncing it, as we do in England. Among the natives of America we know there is a small district, and there may be more, where the people retain this shibboleth which marks them as the descendants of a colony from the neigh bourhood of London. The articulation of the Americans is generally shown to be that of the English, and sometimes drawing, but certainly much more distinct.

As to the use of words now obsolete in England, they are generally confined to conversation, for every one is aware that there is very little use for words that are obsolete, except perhaps a greater degree of ornament, by which we can distinguish it from that of a good English writer. But as the Americans write a great deal in public journals, and are the most prolific people in the world in producing in books, no other nations, except perhaps the Scotch, modes of addressing an audience, we should look at part of their language in order to form a complete judgment of its whole condition, as well as at those specimens of composition which are of a less showy but more valuable and permanent nature.

The number of words now used in a different sense from that which they have in England is but small among writers of good authority; the list of those used in conversation without the use of the word show used as the past tense of the verb to show; the form is now obsolete in England, but may be found in our older writers. In some parts, (for we are aware that in so extensive a country scarcely any remark of this kind can be made,) the word balance in the spoken language is employed to express the remainder or the rest; thus people speak of the balance of the professors', meaning the rest of the professors. The word mutton is sometimes used, as it once was in England, to signify a sheep. Dr. Webster marks that this same word is obsolete in the language, and not either obsolete or ludicrous in the spoken language of some districts. The word bug is used (see Webster) in its original sense of a fly; and the old verb progress, which the Americans use very often and pronounce progress, is beginning to be again adopted in its native sense, though we think we could very well do without it. In judging how far words used in America in different significations from what they
rnan writing as distinguished from English, as this lies be-
the proper subject of the article. The main difference
appears to us from the superior value attached in
America to oratorical display, and to the opinions there
very commonly entertained about the art of writing,
which are called fine writing, and eloquence. [See Style, Elocuence.]

AMERIGO VESPUCCIUS. [See VESPUCCI.]

AMERKOTE, a town near the eastern frontier of
Sinde, and about sixty-five miles to the northward
of Hyderabad, in that province. It is in 25° 20' north lat.,
and 69° 49' east long. This town is celebrated as having
been the birthplace of the Emperor Akbar, when, in 1541,
his father Humayun was driven from Hindostan by Shere
Shah, the ruler of Bengal. This town is the capital of an independent district in the south-eastern
quarter of Mooltan, under which latter name was formerly
comprehended the whole of Sind; in 1813 it was captured
by the Ameers of Sinde. The country by which it is sur-
rounded being barren, yields nothing to the public revenue,
which is derived from duties on merchandise, and exactions
from travellers who pass through. (Mill's History of British
India; and Hamilton's East India Gazetteer.)

AMERSFOORT, a town in the province of Utrecht,
twenty-five miles E.S.E. of Amsterdam, on the small na-
vigable river Eem, which runs into the Zuider Zee. This
town is situated at the foot of a small hill called Amersfor-
derberg, in a very pleasant district. The extensive tobacco
plantations are small, but the town has still some tobacco
manufactures, cotton fabrics, and a glass-house. The population
in Jan. 1, 1830, was 5585 males, and 6197 females. Amersfoort
has three churches, one of which is a fine building. The Grand
Almonry, a charitable establishment, was so unjustly executed at
the Hague, in 1619, was a native of this town. Amersfoort
was taken by the French in 1795.

In traversing the flat country from Utrecht to Amers-
foort, and approaching the latter town, we observe a district
of heath five or six miles wide and as many broad, with some
few trees on it, and dunes or hills of small elevation. These
sandy hills contain fragments of quartz sometimes rounded,
but for the most part angular, with pieces of rock of a
similar nature, and some white sand. These hills are
so unjustly executed at
by the action of
water from the upper course of the Rhine. These
hills are sometimes called the Amersfoort Hills, and in their char-
acter are similar to the Belwe or Welawe, a few miles
further to the east.

AMERSHAM or AGMONDESHAM, a borough town
in Buckinghamshire, about twenty-six miles W.N.W.
of London, on the road to Aylesbury and Buckingham, from
which last it is distant thirty-three miles. It is in a valley
cut in the side of the river Colne, which has its source in
the main street, long and wide, not lighted but well paved,
and crossed by a smaller one. The church stands near the
point of intersection, and is a spacious building of brick
covered with stucco; it consists of a nave and a side aisle,
and a smaller one. The church stands near the point of intersection, and is a spacious building of brick
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and a smaller one. The church stands near the point of intersection, and is a spacious building of brick
covered with stucco; it consists of a nave and a side aisle,
Amersham was a parliamentary borough by prescription; but its right to send members was disused for four hundred years, till, in 1623, it was restored on petition. Edward Waker, the poet, and Algernon Sidney were members for this borough. It was disfranchised by the late Reform Bill.

Many of the inhabitants suffered as Lollards in the reign of Henry V., or as Protestants in that of Mary I.

AEM was the second of the two sons of Mr. John Ames of Yarmouth, where he was born on the 23rd of January, 1689. His father appears to have afterwards settled in London, where he died when his son was in his twelfth year. At this time he was at a little school in Wapping. When fifteen, he was put upon a plan of education, either in King or Queen Street, (near Guildhall) in the city of London. Having served out his time, he then settled in Wapping, Horace Walpole says a ship chandler; but according to other accounts, as an ironmonger. Whatever was his calling, he seems to have been interested in reading and to have attained by it, if not wealth, at least a competency. He also found time to supply the defects of his early education by reading; and this led at length to authorship. The study to which he was most attached was that of the ancient languages. He had received a tolerably good education; and the title of Typographical Antiquities; being an Historical Account of Printing in England, with some Memoirs of our Ancient Printers, and a Register of the Books printed by them, from the London, 1747 to 1750; with an Appendix concerning Printing in Scotland and Ireland in the same time.' This is Ames's principal work, and still, indeed, serves as the basis of the only elaborate history we have of English printing. It has probably preserved a good deal of valuable matter, and other works connected with the subject, that would have been lost, had the recording of them been longer deferred; and it is, upon the whole, creditable to the industry of its compiler. But the task, to be well performed, required much more learning than Ames possessed. Much of this work has been added to it by his subsequent editors, and especially by Mr. Herbert, whose edition, extended to three volumes quarto, appeared in 1785, 1786, and 1790. A still more augmented, and much more splendid edition has since been published by Mr. Dr. Dibdin; his second edition, 1822, 2 vols. 8vo, has been added to it by his subsequent, and especially by Mr. Herbert, whose edition, extended to three volumes quarto, appeared in 1785, 1786, and 1790. A still more augmented, and much more splendid edition has since been published by Mr. Dr. Dibdin, in his second edition, 1822, 2 vols. 8vo. Ames's next most considerable work is that entitled Parentalia, or Memoirs of the Family of Wren, fol. 1750. The book bears to be ' by Stephen Wren, Esq. (the grandson of Sir Christopher) with the care of Joseph Ames; but Ames is mentioned as having been really the writer. It is also the author of a Catalogue of English heads, 8vo, 1748—of a Catalogue of English printers, in two leaves 4to., and of an Index to the catalogue of Lord Pembroke's coins, printed, but not published. Mr. Ames was a fellow of the Royal and Antiquarian Societies, and secretary to the latter from 1741 till his death. In the Philosophical Transactions for 1747, is an account of a case of Plica Polonica, or matted hair, communicated by him. (No. cccxxiii. p. 556.) He died suddenly in the shop of a friend, an officer of the revenue's last quarter, on the 7th of October, 1759. He left a considerable collection both of books and of antiquities and other curiosities, which were sold by auction after his death; the sale occupied nine days. The catalogues of the sale are taken from the Life of Ames, by Mr. G. Hervey, first printed; the sale of his collection, the Typographical Antiquities, and since republished with additional notes in that of Dr. Dibdin.

AMESBURY, a market-town in Wiltshire, in a valley on the river, and six miles from Salisbury, and twenty-eight miles by water from London. Its population is small, the parish having only 944 inhabitants in 1831. The town has little trade, and is chiefly supported by travellers and posting. Even the market (which was on Friday) has been discontinued. There are three fair. Amesbury contains two streets, irregular and ill-built, neither paved nor lighted. The church, built of stone and flints, is of very early date, but some of its ancient features have been defaced by alterations. It was probably attached to the monastery which once existed here. The living is a perpetual curacy, in the gift of the Dean and Canons of Windsor. There is a Wesleyan chapel, and several schools, one of which is endowed.

Amesbury is a place of great antiquity. Under the Saxon king Edgar, it was of considerable importance to be the seat of a synod; and Elfrida, the widow of that prince, founded here, in the latter part of the tenth century, a nunnery of the Benedictine order. An abbey had indeed existed much earlier period, founded, as some say, by Ambrosius, a British prince who lived at the time of the Saxon invasion, or by one Ambri a monk; this abbey appears to have been destroyed by the Danes about the time of Alfred. Elfrida's son, a nor, but some of its ancient features have been defaced by alterations. It was probably attached to the monastery which once existed here. The living is a perpetual curacy, in the gift of the Dean and Canons of Windsor. There is a Wesleyan chapel, and several schools, one of which is endowed.

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various kinds of grain. He describes many well-cultivated plains covered with maize, wheat, barley, and in some cases carefully irrigated. The country contained a great many Christian churches; indeed every district had its church. The people in some places went nearly naked.

The missionary describes some most singular and dangerous passages formed in the side of mountains: from many points of view. The inhabitants were divided into two parts by one road, on which there were occasionally gates placed, which entirely commanded the passes; certain duties were levied at these gates.

At the period of Alvarez's visit, the emperor appears to have chanced to proceed to his religious residence. The changes that have happened in Abyssinia since that time have, probably, rendered this province difficult of access. We find no information about it in the Life and Adventures of N. Pearce (London, 1831).

Amharic literature is very scanty. Before the above publications of the British and Foreign Bible Society, there were in Abyssinia no Amharic books, except an Ethiopic

AMHARIC LANGUAGE has its name from Amhara, where it is or was spoken in its greatest purity. Inferior dialects of the Amharic are spoken in the provinces of Gojam, Angot, Efat, Shoa, Bagemed, Samen, &c. The Amharic is spoken to this day by a great number of Rumi, who were originally called by Pietro della Valle, of the Society of Jesus, Geogr. Min., t. i., p. 46,) about 120 years before Christ.

Agatharchides calls the language of the Troglodytes of Ethiopia ἐλεύθηρά λυκίν, a term which certainly bears some resemblance to Amharic. Agatharchides says that he was acquainted with the Kamaraff, The Amharic began to prevail in Abyssinia over the Geez language when Icon-Amlak, about the year 1300, having overcome the Zagean dynasty, ascended the throne of his ancestors, and removed the residence of the royal court from Axum to Shoa, where it afterwards remained, and was usually confined in the mountain fortresses of Amhara, Gashen and Ambæsel. Icon-Amlak surrounded himself with officers and courtiers who spoke the Amharic, which was then generally adopted by the higher ranks in Abyssinia, who called it ḥebra bæges, the royal tongue, some pomegranates, the sugar-cane, and the fig; but he says nothing about oranges and lemons. According to Bruce and Pearce, the orange and lemon are now in Abyssinia, but the writer does not know where they were first cultivated. The language of Amharic chiefly from Abba Gregorius, a native unlettered Abyssinian, who merely drew up a rough Italian-Amharic vocabulary, which came afterwards into the library of Paris.

The French consul at Cairo, Asselin de Cherville, caused Amedee de Biron, who was originally called by Prof. T. B. of the University at Gießen, there is also a

Inchæris Christianæ, Lingua Amharica, by T. G. Gihbracer, Roman, after 1786. Ludolf was assisted by J. H. Michælis in the composition of his Lexicon Amharicum and his Grammatica Amharica, prepared for the use of the Abyssinian Mission. Professor Asselin de Cherville in his Voyage of the Abyssinian Mission to Paris, 2 vols. 8vo., 1777, and in the book, "A Journey to the Interior of Abyssinia," published by Mr. G. Asselin, a fellow of the University of Cambridge, 12mo., 1777, &c. M. Asselin was also engaged on an Amharic grammar and dictionary. Learn. Soc. London, 1831, p. 249. M. Asselin devoted, during ten successive years, two days per week to the superintendence of Abu Rumi's translation. No. XIV. of the Abyssinian manuscripts, in the library of the British and Foreign Bible Society, contains the Gospel of St. Mark in Amharic. The translation was made from Salt's Travels and the recent publication of his life, was unacquainted with the Ethiopic characters; and has therefore expressed the sounds with which he was familiar in the common English handwriting and orthography. His attempts are sometimes a little amusing. In instances occur of as great deviations from the correct form, as if we should represent the French words, t la fuit que, by the combination s`o f. The reader will find some useful remarks on the subject of the Amharic translations, by Thomas Pell Platt, R.A. London, 1823, 4to. It appears that Pearce deviated from analogy in his orthography, frequently made grammatical errors, and violated the idiom of the language in attempting to render each word and particle of the English version from which he translated. In Pearce's translations, many characters of the Amharic language are not preserved, and so have been omitted by Pearce, whose translations, however, are valuable as expressing the native pronunciation. Pearce died at Alexandria. Ludolf's Ethiopic type has been obtained from Germany for the use of the British and Foreign Bible Society; and the wish, repeatedly expressed by Ludolf, of promoting by linguistic studies the propagation of the Gospel, has been fulfilled after the lapse of more than a century. Various characters of Ludolf's types were altered under the direction of Professor Leo, to a nearer imitation of Ethiopic calligraphy. Little collections of Amharic words have been made by

Little collections of Amharic words have been made by

The Amharic is said to be a degenerated Semitic dialect, the grammatical structure of which has preserved its characteristic marks, though its lexicographical contents are mingled with African words. It is likely that the Amharic and other dialects of the Ethiopic are derived from the old Arabic of the Himyarites in Yemen. The Amharic adds to the twenty-six characters of the Geez seven others, which are mere vowels expressing harsh sounds or consonants, as the word Glad. The vowels are expressed by variations in the shape of the letters, so that each character or letter is in fact a syllable, being a consonant followed by a vowel, thus: /a/; /e/; /i/; /o/; /a/, /e/, /i/, /o/. The Amharic, with other Ethiopic dialects, is written from the left to the right side, like our western languages.
Salt in his Travels, and by Seetzen in his Linguistischem Nachlaß, Leipzig, 1816-18, p. 145, etc. Nine verses of the commencement of Solomon's Song, in five dialects, similar to those of noen chief in his Travels. (See the article Amharische Sprache, by Gesenius, in Ersch and Gruber's Encyklopädie; and see ETHIOPIAN LANGUAGES.)

AMHERST, a small town of Massachusetts, about seventy miles due west of Boston, and a few miles east of the Connecticut river. It has an incorporated college, opened in 1821. The latest accounts state that it had a president, ten instructors, 197 students, a library of 2350 volumes, and a student's library of 4513.

AMHERST, a town in the northeast corner of the Gulf of Maine, 16° 10' N. lat., and 70° 23' E. long.

This town was built by the British in 1826, on the termination of the Burmese war, in order to supply the place, as a military post, of the town of Martaban, which was restored to the Burmese under the provisions of the treaty. In this town any supply was offered to such of the Burmese subjects as dreaded the resentment of their government for the part they had taken during the war. The place was named in honour of the Governor-General of India. It may afford some idea of the rapidity with which towns are raised in India, to state, that in the beginning of April, 1826, the spot selected as the site of this town was covered with jungle, and that in the following January it contained 1600 inhabitants.

This position of Amherst appears to be well chosen for the purposes of commerce, it being easy of access to the Burmese, the Chinese, and the people of other countries beyond the Ganges. The run by sea between this place and Rangoon is short, and suited to the small vessels employed in the Burmese trade. Inland side, there is a safe route to the interior of Ava, and to the country of the Shan, a people inhabiting the central region between Ava, Siam, and China. The practicability of the trade in this part of the country, and the establishment of a factory among the Shan, is only hindered by the time and labor required to perfect it. The rich province of Shan is almost untouched by the trade of Europeans. Everything in the Shan country is to the British merchant a source of interest. The Shan are a military race, and have the reputation of being the bravest of the Burmese. We arrive at the town of Martaban, which lies on the Burman river, and is the residence of the governor of the province.

The town is built on the south bank of the wide outlet, or estuary of the Saluen river, which passes from China through the Shan country, and discharges itself into the Gulf of Martaban. The channel of this stream is broad, but so shallow, and so much obstructed by shoals and rapids, that, except at its mouth, it is not navigable for vessels of any considerable burthen. Its course lies through an open and fertile country with which towns are raised in India, to state, that in the beginning of April, 1826, the spot selected as the site of this town was covered with jungle, and that in the following January it contained 1600 inhabitants.

Amherst is a bar harbour with rather a dangerous entrance, but when this is passed, the anchorage is good in five fathoms water, within 100 yards of the shore. The bar has only one fathom at low water. The tide flows about six hours, and its greatest depth is 19 feet. For three hours before, and the same time after high water, the harbour is so still, that the communication with the shore is perfectly easy.

Sand-gages are found everywhere in the neighbourhood of the town, within six feet of the surface, and every circumstance connected with the station seems to promise that Amherst will become a place of considerable commercial and political importance. The military cantonments are situated about a mile and a half from the town, on a dry and elevated spot. (Manuscripts of the India Board, quoted by Hamilton, and Reports of the House of Commons on the Affairs of India, 1832.)

AMHERST (JEFFERY, BARON), a distinguished British soldier, was the son of Jeffery Amherst, of Riverhead, in Kent, Esq., and was born on the 29th of January, 1717. The family is said to have been of great antiquity. He received his ensign's commission in 1731, and his rank by purchase for going to Germany as aide-de-camp to General Ligonier, was present at the battles of Dettingen and Fontenoy. He afterwards became aide-de-camp to the Duke of Cumberland, and as such was present at the battles of Laffeld and Hastenbeck. In 1756, while in the service of the House of Commons, and was made a Knight of the Bath. Soon after he was appointed commander-in-chief of all the forces in America. On the peace in 1763 he returned to England, when he received from the king the governorship of Virginia. A misunderstanding with his majesty in 1768 occasioned his sudden dismissal from the army; but the matter having been cleared up, he was in a few months reinstated both in his former rank and in the royal favour. In 1776 he was appointed to the Governorship of Carolina. In 1777 he was created Baron Amherst of Holtmesdale, in the county of Kent. He returned to his native county, and was succeeded in his title and estates by his nephew, William Pitt Amherst, the present peer. (Gentlemen's Magazine for 1797, p. 808; and Chalmers's Biographical Dictionary.)

AMHERSTBURGH, a town in the western district of Upper Canada, in 42° 5' N. lat., and 83° 10' W. long, in the township of Malden, Essex county.

Amherstburg stands on the northern shore of Lake Erie, near the mouth of the Raisin, and the Sucker, and is surrounded on the north by the Detroit river and its branches. The lake and river furnish a great variety and plentiful supply of excellent fish; and the woods contain as great a choice of game and of singing birds. (Bouchette's Account of the British Dominions in North America.)

AMIANTHUS. [See Amasius.]

AMIDINE, a peculiar substance, procured by Saussure from wheat and potato starch: 100 parts of the latter were boiled with 1200 parts of water, and put into a bottle furnished with a tube to convey off the gases. After forty-two days' exposure to a temperature of 68° to 77° of Fahr., small quantities of hydrogen and carbonic acid gases were obtained. On examining the residue, it was found to contain 18°7 of amidine, 35°4 of sugar, resembling that formed by the action of dilute sulphuric acid upon starch, and 17°5 of gum, similar to that procured by roasting starch, and some starch remained unchanged. One hundred parts of potato starch boiled with 1200 of water were exposed also for forty-two days to the atmosphere; they yielded 17 of amidine, 38°4 of sugar, resembling the last; 17°2 of gum, and 8°2 of an unknown substance. It appears, therefore, that changes occur in the nature of starch, with, or without, the presence of atmospheric air; in the former case, it was found that a little of its oxygen was converted into carbonic acid gas; in the latter case, as already noticed, hydrogen and carbonic acid gases were evolved.

When the residue of the fermentation is treated with cold water, the sugar and gum are readily dissolved, while the amidine is left undissolved. It resembles starch in giving a blue colour.
with iodine, in its action upon barytes-water, subacetate of lead and infusion of galls, but differs from it in being soluble in cold water, and in not gelatinizing with boiling water, even when made the 8th of the solution.

AMIENS, an ancient town of France, in the department of Somme, seventy-five miles N. of Paris. It is of Celtic origin, and existed at the time of Caesar's invasion of Gaul, under the name of Samaro-Briva, which denotes a bridge over the Somme. It was a later town of considerable size, and a chief of the Amiens, the name of the tribe of which it was the chief town; the Ambiani; this name, under a modified form, it still retains.*

When France was divided into provinces, Amiens was the capital of Amiens. The division of this district is by the state, and this, by that of departments, Amiens became the capital of the department of Somme. It is the seat also of a Cour Royale, a court the jurisdiction of which may be compared to that of our own assize courts, but which differs from them in being statutory; it is a court for the decision of mercantile disputes, the members of which are leading merchants or tradesmen, and are appointed by the commercial body, and of a bishopric, which includes the departments of Somme and Oise.

The town is well built, with broad, straight streets. The river Somme, which traverses it in three branches, is navigable for small craft. There is a citadel, but the ramparts of the town have been demolished, and serve now as promenades. The chief buildings are the town-house built by Henri IV., in the time of the war of Religion; the gateway of the old town, which no longer has the name of the gate it bore; a later gateway, the northern gate to the present town of Amiens, re-annexed to the crown in the fifteenth century by Louis XI., the son and successor of Charles. In the time of Henry IV. it was taken by the Spaniards by a singular stratagem. A party of soldiers, disguised as peasants, driving a cart loaded with walnuts, having gained admittance, contrived to spoil their nuts just by the gate; and while the guards were gathering them up, the town was surprised and taken by the disarmed soldiers and their comrades who had followed them. This was one of the most successful of those attacks on the enemy which were customary during the eighteenth century.

The short peace between England and France, in 1802, was concluded at Amiens.

The arrangement of Amiens contains 632 square miles, and about 150,000 inhabitants. There are in it 250 churches.

AMIENS (TREATY OF), the treaty of peace between Great Britain on the one part, and France, Spain, and Holland, on the other, signed at Amiens on the 29th of May, 1795. The peace of Amiens was signed at London on the 1st of October, 1801; and on that occasion, it was agreed that the terms of the final treaty should be settled at Amiens, that town being situated about midway between London and Paris. On the 1st of November, accordingly, the Marquis Cornwallis left London for Paris, commissioned to act as plenipotentiary; and on the 1st of December he arrived at Amiens. On the 7th, the Dutch minister, Roger Jean Schimmelpenne, made his appearance. The Spanish representative, Don Joseph Nicolás D'Aza, did not come till a considerable time after, and was the last to arrive. It was a long time, after the commissioners had all assembled, before much progress was made in the negociation; and it was frequently supposed to be on the point of breaking up, however, was last signed on the day we have mentioned, an additional article having been added two days after. On the 29th, Mr. Moore, the assistant secretary to the mission, arrived with the news in London. The proclamation of the peace was made in that city, and in Westminster, on the 29th of April, on the evening of which day a brilliant illumination testified the public joy. The treaty of Amiens consisted of twenty-three articles, including the supplementary one. France agreed to evacuate Naples, and the states of the Church; England, on her part, gave up all her conquests during the war, to the powers to whom they had formerly belonged, with the exception of Trinidad, which had been taken from Spain, and the part of Ceylon which had been possessed by the Dutch. Egypt was restored to Turkey. It was also stipulated, that the surrender of the island of Malta should precede the exchange of the ratifications of peace, the English troops should evacuate the islands of Malta, Gozo, and Comino, which should be given back into the possession of the French; and the island of Malta was to be given to them on conditions which were enumerated under thirteen heads. It was this last stipulation which afterwards afforded the ostensible ground for the breach between the two principal powers which had been parties to the treaty of Amiens.

AMIILCAR [See HAMILCAR].

AMIOT, (LE PERE), a learned French Jesuit, and a missionary to China, who lived at Tomsin, near Peking. Having entered the order or society, as it was styled, of the Jesuits, he distinguished himself as much by his natural talents, as by his persevering application to study, especially to mathematics, physics, and the languages. Being sent by his superiors to the eastern missions, he arrived at Peking in 1750, whence he proceeded the following year to Pekin, at the request, it is said, of the emperor, who had heard of his great proficiency in mathematics, a science then much in favour at the court of China. Amiot soon won the friendship of the monarch, and he continued to reside at Pekin, for the space of forty-four years, till the day of his death. To his knowledge of the Chinese, he added that of the Manchou language, which he studied at Canton, under a Jesuit, and of which he eventually acquired a thorough knowledge. Even as he modestly observes, he found very useful for interpreting many obscure passages in the Chinese writers, whose language, he says, is like no other in the world, and is justly called by the Japanese * the language of confusion. The Tartar Manchou, on the contrary, is methodic, and better resembles our European languages. Many Chinese works, especially those relative to the military profession, being translated into Manchou, as the Tartar conquerors adopted Chinese system of tactics, Amiot availed himself of both texts, and he thus compiled his own work, an English translation of the French work, On the Military Art among the Chinese, which he extracted from ancient works written by Chinese generals before our Christian era, and which are used for the examination of the candidates to the commission of military officers. This work was published at Paris by Desguines, in 1772, with some explanatory remarks on certain passages in which Amiot appeared to have misunderstood, or not clearly rendered, the Chinese text. It was afterwards reprinted in the seventh volume of the collection of works concerning l'Histoire, les Sciences, et les Arts des Chinois, par les Missionnaires, 15 vols. 4to, published at Paris in 1776—91. A supplement with plates, sent since from China, was inserted in the eighth volume. In the same collection of works is a translation of the works on the geography of China, and other works, with a copious index of them in the tenth volume. In the Lettres sur les caracteres Chinois, addressed to the London Royal Society, he replies to a question re-
ferred to him on the subject of certain hieroglyphs observed by Neecham on a bust of Isis in the king's cabinet at Turin, and supposed to resemble the ancient Chinese symbolic characters. Amiot demonstrated that there was no analogy between the two. This letter is an elaborate dissertation on the Chinese language. He wrote also L'antiquité de la Chine prouvée par les monumens, in answer to an essay written by Father Gibert, another Jesuit, under the assumed name of "Father Ko, a Chinese Jesuit," both which are inserted in the first and second volumes of the Mémoires already mentioned. Gibert had attacked the Chinese chronology of their dynasties, especially with regard to the six emperors before the mine-said to have been discovered. The statements which he adduced to defend the Chinese historians, as he did likewise in his Life of Kong-fu, whom we miscall Confucius, which he derived from the best authorities, and in which he gave a genealogy of the philosopher's family, some of whose descendants were living in Amiot's time, and the line of which is traced back to the Emperor Hoang-ti, about 2600 years before Christ, and three centuries before Yia. It is from this epoch that Amiot reckons the commencement of the life of the "Memnon." It was thus that Father Amiot, in their doubtful and mythological era. This opinion is conclusive to the Chroniclal Abrodiement of the History of China, compiled at Pekin in 1770 by order of the Emperor Kien Long, to which work Amiot wrote a prefatory explanation, in which he added his reflections. The book, the size of 8vo., was published separately at Paris, under the care of the Abbé Roussier, and was afterwards inserted in the sixth volume of the Mémoires. Upon the advice of one of the best Chinese treatises on music, and the MS. was deposited by Bougainville, secretary to the Academy of Inscriptions and Belles Lettres, in the Royal Library at Paris, where it is to be seen. He translated a Chinese poem in praise of their Emperor Kien Long, composed by himself, with numerous notes on the country of Mookden, the cradle of the Manchou Tartars. Another important work of Father Amiot, is his Manchouco and French Dictionary, which was the first in Europe on that language, and was printed at Paris in 1789, in three volumes 4to. The two latter were cast at the expense of the minister Bertin, who intrusted the revision to the orientalist Langlé. Amiot also wrote a short Manchouco grammar, which is found in the thirteenth volume of the Academy of the language, composed by him. At the same time, he had the spiritual direction of the congregation of native Christians in the capital. He died at Pekin, in 1794, aged seventy-seven.

AMIR AL OMARA, or AMIR AL OMRA. [See EMIR GAZEE.] AMILWICH, in the island of Anglesey, was formerly an insignificant fishing village consisting of about six houses; but in consequence of the discovery of the celebrated copper mines in the Parys mountain, in the year 1768, it has become a flourishing town: the inhabitants amounted, in 1801, to 4977; and were increased, in 1831, to 6285. It has a capacious harbour cut out of the solid rock or slate, at the expense of the mining companies, capable of admitting thirty-two tons of burden, where originally there was only a cleft or opening, too small to receive a single vessel. This harbour is dry at low water. It now returns a member to parliament jointly with Beaumaris, Holyhead, and Llangollen.

THREE COPPER MINES. The discovery of these mines was one of the most important events that took place in the mining districts of this country during the last century, for it opened the source of an abundant supply of copper at a time when that metal was beginning to be in great demand for the sheathing of ships and the making of brass. In the year 1762, one Alexander Fraser repaired to the island of Anglesey in search of mines, and examined more particularly the Parys mountain, which in his opinion presented strong indications of minerals in the interior. He communicated his belief to Sir William Birkett, who called upon him to sink some trial shafts. But no success attended the operations. Sometime afterwards Sir Nicholas, in granting to Mosera, Roe and Co. of Macclesfield a lease of his mines in Carnarvon, imposed upon those gentlemen an obligation to search the Parys mountain for mines. The search was conducted by two men, at a considerable expense, but without any favourable result, and was nearly abandoned, when, as a last effort, the miners were divided into small parties, and instructed to sink several trial shafts in the neighbourhood of a spring of water which was supposed to be impregnated with copper. On the second day, much to the joy of all concerned, one of these shafts struck upon a large body of copper ore. This discovery was made on the 2d of March, 1768, and the anniversary of that day has ever since been celebrated by the celebration of a public banquet. The face of the mine, which penetrated more than seven feet, when the first solid mass of ore was met with. After the discovery of ore, Roe and Co. were dispossessed of their lease by a lawsuit, and the Parys mine was transferred to the crown for work done by Mr. Lard, a German, and Mr. Hughes. Mr. Hughes' interest in the Parys mine was a share in the land in right of his wife. It made the fortune of the two latter. The Mona mine, in the same range of mountains, was soon afterwards opened and worked: the Llandovery copper mines, and the property of Loughor, where Cibot was introduced, to the present Marquess of Anglesey. Both mines proved exceedingly profitable.

As the excavations proceeded, it was found that the ore did not lie in regular veins or lodes, but in large conglomerate masses, which had been brought together by the ice and snow, and were found in easy and easy manner by means of workings exposed to the day. The ore was mixed with, and imbedded in slate, and descended to various depths, from twenty to fifty fathoms, so that in time the workings assumed the shape of a large deep cavern, divided into smaller chambers, and divided by walls and the bottom of deep pits and irregularities. When the miners were in full work, every corner of this immense excavation resounded with the blows of the miners and the thunderous occasioned by the constant blastings with gunpowder. At one time the mines gave employment to 1500 workmen, ninety of whom were employed in the smelting-houses. Some estimate may be formed as to the quantity of ore raised, from the circumstances of there having been one stack of 3,000 tons of Sulphur, cost of 1200 £L. and 14,900 tons of the Parys mine. The principal part of the ore was a sulphur of copper, intermixed, but with black copper, blue and green carbonate, and some strings of pure native copper. The richer ore was at first sent to the smelting works at Swansea, or sent to the smelting works at Stanley, near Liverpool; but those of a poorer kind, containing from 1 to 24 per cent. were broken into small pieces, and placed in ovens or kilns for the purpose of having the sulphur extracted from them. The extraction of copper, which was very large, was divided into various parts of the ore, which soon ignited, and the fire smouldering slowly, disengaged the sulphur, which fell into a chamber, connected by means of flues with the kiln or oven. This process of sublimation lasted from six to ten months, according to the quality of the ore. When the sulphur was supposed to be thoroughly extracted, the ore was taken from the ovens to the company's smelting houses at Amlwich, and there run into rough copper, technically called metal. One of the smelting-houses contained upwards of thirty reverberatory furnaces; each furnace was charged with twelve cwt. of the roasted ore, which smelted in five hours, and yielded half a cwt. of rough copper or metal, containing about 40 per cent. of pure copper. The sulphur collected in the chamber, as above described, was from time to time taken out and cast, and carried to the London market.

In excavations so extensive, and occasionally penetrating to the depth of fifty fathoms, there could not fail to accumulate a large body of water. To remove this, a solution of a portion of sulphate of copper, which was separated in the following manner: large ranges of rectangular pits, thirty-two feet in length, twelve feet in width, and to five feet in depth, were constructed; these pits were filled with rows of cast-iron plates, placed with great care, each pitch being by the projecting upon the upper side. In course of time, however, any kind of refuse cast or mixed in or air was substituted for the plates, and found to serve quite as well at less than half the expense. The water thus impregnated with copper, being drained off from the excavations, and made to flow along troughs or channels into the pits. A slow but continued action took place upon the surface of the iron which was gradually dissolved and carried
Hercules and the earth was 800 son and for death under the reign of Julian extend nearly to the end of the twenty-fifth century. The question whether he was a Christian or a pagan has been agitated. Though he has not expressly stated his profession, it may be inferred from several passages that he was not a Christian. In style he is inflated and vicious; but passages of considerable effect and eloquence occur in his work, which has every appearance of being a faithful and unprejudiced narration of public transactions, in many of which he is personally engaged. "But more censure regret," says Gibbon, "that I must now take leave of an accurate and faithful guide, who has composed the history of his own times, without indulging the prejudices and passions which usually affect the mind of a contemporary."

AMMius MARCELLINUS, of Pari. (Hist. Rom., xxii. 15.) Some account of the island of Amlwch, or the AMIN RA, the name of an Egyptian deity, whom the Greeks considered as synonymous with their Zeus (Jupiter). He is often represented on the monuments of Egypt and in other works of Egyptian art with a ram's head; and as a human being, Herodotus (ii. 42) tells the following odd story, picked up during his travels in Egypt:—"Hercules was exceedingly anxious to have a sight of Zeus, but Zeus did not feel inclined to show himself. At last, when Hercules was very importunate, Zeus in the following manner contrived to cut off the head put it before his face; he then got into the skin, and in this guise showed himself to Hercules. From this circumstance the Egyptians represent the image of Zeus with a ram's head. But the ram's head is not the proper property of Ammon; it is founded on the head of Cneiph, with the appropriate distinguishing symbols. We consider the community of symbols in the representations of different deities, as indicating the origin of the political union of the several tribes or peoples to whom the several deities were assigned.

The worship of Ammon was not, like that of Osiris and Isis, common to all the Egyptians: it seems to have been specially of Ethiopian origin. The two chief Ammonian temples which now exist are that at Carnaca, on the west side of the Nile, formerly the extensive ruins of Thubes, and that of Siwah, in the Libyan desert, known to the Greeks by the name of Ammonium. But the worship of Ammon is not, like that of Osiris and Isis, common to all the Egyptians; it seems to have been specially of Ethiopian origin. The two chief Ammonian temples which now exist are that at Carnaca, on the west side of the Nile, formerly the extensive ruins of Thubes, and that of Siwah, in the Libyan desert, known to the Greeks by the name of Ammonium. The god Ammon appears also under the figure of a crio- sphinx or ram-sphinx, which is an animal with a ram's body and the head of a man, and is a symbol of the city of Thebes (see British Museum—Egyptian Antiquities, vol. i., and the drawings in the French work on Egypt. Antiquités, tom. iii., pl. 32.)

The word Ammon cannot, we think, be satisfactorily explained from the Coptic language, as it now exists. The various guesses and conjectures may be seen in Jablonksi's Pantheon, vol. i.; out of all the guesses, that which connects the word Ammon, or Amon, with the Coptic word signifying "the moon," is probably the most likely. Ammon (John xxi. 15; etc.) Ammon then would be the god of a Nomadic race, and originally a pastoral deity. We find the city or portion of Ammon mentioned in Jeremiah xxxvi. 23; Ezekiel xxx. 15, under the name of Onam, and sometimes also under the name of Ammon. This city is generally supposed to be the Greek Diospolis, or city of Jupiter, now forming part of the ruins of Thebes. But the No of Nahum is more probably the Diospolis of the Delta. This name Ammon forms a part of the proper name of several Egyptian kings and persons, such as Amenoph (see Memnon), and Ptammon; and is also often used in the title or qualifying term applied to the name of a king: thus we find on the monuments prefixed to the name of Amenoph, the title Ammon-amos, and the term Ammon may be compared with such Greek proper names as Dipnus.
"Dear to Jupiter," and such German names as Gotthis, (Theophilus) "Dear to God," Gottfried (Godfrey) "Peace of God."

AMMONIA, the modern name of the volatile alkali. Frequently so called to distinguish it from the more fixed alkalis: it is a gaseous body, and was first procured in that state by Priestley, who termed it alkaline air. (Experiments on Air, vol. ii. p. 370.) It obtained from sal ammoniac, and hence the present name of the alkali.

AMMONIA is a compound of muriatic acid and ammonia; it when powdered and mixed with three-fourths of its weight of powdered lime, and heated in a retort, ammoniacal gas is plentifully given out, which must be received in jars filled with lime and inserted in measure in which it occupies during the production of the ammonia are of a complicated nature. Sal ammoniac, or muriate of ammonia, consists of muriatic acid and ammonia, and the acid itself is constituted of chlorine and hydrogen; lime is the compound of muriatic acid and oxygen. When the muriate of ammonia and lime act upon each other, the chlorine of the muriatic acid combines with the calcium of the lime, and the resulting chloride of calcium remains in the retort, while the hydrogen of the acid combines with the oxygen of the lime to form water, which evaporates with the ammonia evolved.

The ammonium thus obtained is aëriform; and as it does not become fluid under common circumstances of temperature and pressure, nor solid in any case, is termed a gas—ammoniacal air. By its properties is it colourless, transparent, and of course invisible; possessing the elasticity and mechanical properties of atmospheric air. The smell is peculiar and extremely pungent, and its taste, is highly acid. An animal put into it is immediately killed, and a tapir put into it is extinguished, for it appears, even to be slightly inflammable, for the flame is rather enlarged before it goes out; and a small jet of the gas may be burned in oxygen gas. The density of ammoniacal gas is to that of ordinary air, nearly as 0:5902 to 1:100 cubic inches weigh rather more than 18 grains. It acts strongly as an alkali, turning vegetable blues green, and yellows reddish brown, and saturates acids forming various salts.

Mr. Faraday (Phil. Trans. 1823, p. 189) found, that by subjecting ammoniacal gas to a pressure of about 64 atmospheres, at the temperature of 50°, it became a colourless transparent fluid, the density of which was 0:760, water being 1.

Water dissolves ammoniacal gas with great rapidity, and in large quantity; a few drops of water thrown up into a jar of the gas instantly condense it; a piece of ice also immediately liquefies in and condenses the gas. Water at 50° is capable of dissolving 670 times its own weight; the density of the solution diminishes as its strength increases, so that, according to Davy, with whom other chemists nearly agree, when water contains 9% per cent of ammonia, its density is 0:9982; but when it holds 32% per cent, it is reduced to 0:6750. The aqueous solution is colourless, transparent, and has the pungency and alkaline property of the gas: by exposure to the air, the ammonia escapes, and by the application of heat it is expelled from the water; on account of this volatility of ammonia, vegetable colours which have taken the change by it regain their original tints as it evaporates, which is not the case when the change has been caused by the fixed alkalis.

The presence of ammonia may be detected by its strong smell, by holding moistened turmeric paper where it is suspected to exist, and by the formation of a white vapour, when exposed to a glass rod moistened with muriatic acid. Dr. Priestley found that the strong light of a lens produced no effect upon ammoniacal gas. By moderate degrees of heat it is merely expanded; but when passed through an ignited porcelain tube, as was first shown by Dr. Priestley, it is decomposed, and, increasing to nearly 100 volumes, rendered inflammable. (Experiments on Air, vol. ii. p. 393.) He also first proved that it is decomposed by the electric spark, and separated into hydrogen and azotic gases, (vol. iii. p. 389.) These experiments have been repeated by Luscher, Davy, and Gay-Lussac. (Annales of Philosophy, N. S., vii. p. 347) also found that when ammoniacal gas is electrified, its volume is exactly doubled, and it is resolved into three volumes of hydrogen gas, and one volume of azotic gas. As the result of these last experiments of Gay-Lussac it is now generally admitted that this gas is a compound of three volumes of hydrogen gas and one volume of azotic gas, condensed into two volumes; by weight it is composed of

Three atoms of hydrogen 1 x 3 = 3 or hydrogen 17:*64
One atom of azote = 14 azote 82:*36

Weight of its atom = 17 100

That this is the composition of the gas in question is also shown by comparing its calculated and actual density, according to Thomson (Phil. Mag. vol. i. p. 706) 300 cubic inches of hydrogen gas weigh 6:842 grains, and 100 cubic inches of azotic gas weigh 30:7974 grains, making together 36:6436; but during combination of gases in the half its volume of azote 200 cubic inches of ammoniacal gas weigh theoretically 36:7636 grains, and 100 weight 18:3818. Now according to Allen and Pepys the weight by actual experiment is 18:16 grains, which is sufficiently near the calculated weight, and shows that the gas is a compound of hydrogen and azotic gases.

Ammonia is used for many purposes both in medicine and in scientific chemistry; as however it would be impossible in some cases, and inconvenient in almost every one, to employ it in a gaseous state, it is used in solution in water, and then frequently called water of lime. Water of lime can be applied with propriety only to the gas rendered fluid by cold and pressure. Solution of ammonia may be readily prepared by mixing muriate of ammonia with lime, in the mule proportions already mentioned, and passing the gas liberated into water: this may be done either by inserting a glass tube bent at right angles into the mouth of the retort, and then putting the other end into a bottle of water; or, which is better, in case absorption should take place, a subatuated receiver may be used instead of the bent tube during the experiment. It is a perforated cork to the retort, and luting it so that it may withstand the pressure of passing the gas into the water.

Having now stated the direct method of preparing ammonia, we must now pass over the process of its manufacture, and in that connection, it will be proper to notice the different processes, both natural and artificial, by which it is produced in large quantity. The first of these is the putrefaction of animal matter, We have already mentioned that hydrogen and azote are the being mostly composed of lime, does not yield any ammonia but there is intermixed with it a large quantity of a substance termed chemically gelatine, which is similar to is-
glass, and that this yields ammonium is readily shown by heating it in a retort with a spirit lamp; the product received in a vessel containing turmeric paper soon renders its yellow color. As the gas undergoes change, and from Sausure's experiments, it appears that the absorption is analogous to the capillary attraction of liquids by very small tubes. Sulphur, when strongly heated in ammoniacal gas, partially decomposes it, and hydrosulphuret of carbon is one of the products. At a high temperature, phosphorus also decomposes ammonium and phosphuret of hydrogen; but when no heat is employed, phosphorus absorbs the gas, and a deep-brown coloured substance is formed which is almost pulverulent; its properties have not been examined. Iodine may be added both to the ammoniacal gas, or to that which has been converted without the agency of heat, and form iodide of azote.

(Colin, Ann. de Chim. xci. p. 252.) The compound is formed immediately on mixture: it is a shining viscid liquid, of a brownish-black colour, but as the absorption of ammoniacal gas on it, loses its lazerenheit and coldness, the reaction, but, if put in contact with water, the ammonium is decomposed, and a black powder formed, which is the well-known detonating substance iodide of azote, generally prepared by putting iodine into the aqueous solution of ammonium.

The action of the metals upon ammonium varies considerably according to their nature. Gay-Lussac and Thénard have shown that potassium and sodium absorb ammoniacal gas, and are covered with a white crust. The absorption is more rapid when the heat of a spirit-lamp is employed; the crust becomes soft and yellow, then it is brilliant and smooth, whilst the new compound is greenish, fuses, and runs upon the sides of the tube; when the operation is continued until the potassium entirely disappears, ammoniacal gas is not only absorbed, but a portion of the gas is evolved, and the amalgam is formed of a deep olive-green colour, its fracture crystalline, and its density greater than that of water. It fuses at a temperature higher than boiling water, does not conduct electricity, burns in oxygen gas, and yields hydrogen and azote. When the oxide decomposes and the salt, the results are potash and ammoniacal gas. Gay-Lussac and Thénard consider it as a compound of azoteur of potassium with ammonium.

When ammoniacal gas is passed over ignited iron or copper, the density of the metals is much diminished; and by the repeated action and decomposition of the gas, iron may be increased in weight, as proved by Desprez, 11 5 per cent., which increase is owing to the absorption of azote by the metal. It has been mentioned under the head of amalgam, that mercuric amalgam, at a very low temperature, is decomposed by the action of voltaic electricity, form a compound which has been termed an amalgam. This experiment was first made by Berzelius and Pontin, and may be thus performed:—put some mercury into an open glass capsule, and place in it a pyroxylin tube. Connect this with the arm of a battery, and pour on the mercury a strong aqueous solution of ammonium, and connect this by a platina wire, at the distance of a line from the mercury, with the positive pole of the battery. When the battery is connected, the mercury first gives out gas, but soon after it is disengaged also from the mercury, which expands, becomes gradually as thick as butter, is of a silvery-white colour, and eventually increases to five or six times its original volume.

At a temperature of 70° to 80° Fahrenheit, the amalgam is a soft solid; at 32°, it is a firm crystalline mass. Its density is about 3, water being 1. If exposed to the air it soon becomes covered with a white crust of carbonate of ammonium: and when thrown into water, the mercury returns to its original state, but the negative pole of the battery and hydrogen gas is evolved equal to half the volume of the amalgam used in the experiment.

Davy improved this process by putting about 50 grains of mercury into a cavity made in a piece of moistened sandpaper. Place the platina plate on the negative pole of the battery, and pour on the mercury a weak solution of ammonium, and hydrogen gas is evolved equal to half the volume of the amalgam used in the experiment.

Great deference is due to the nature of this amalgam. Gay-Lussac and Thénard consider it as a mere combination of mercury and ammonium, while Berzelius regards it as a real amalgam of mercury and ammonium, which he considers as a metal, composed of one volume of azote gas, and four volumes of hydrogen gas; this opinion

The Quarterly Journal of Science, Vol. xix. p. 116.) Mr. Faraday has detailed some very curious cases of the production of ammonium, in which the substances yielding it are, according to the present state of chemical science, destitute of the azote supposed to be necessary to its formation. From among numerous experiments, the following may be selected as one of the most striking,—a tube tube was heated in a flame, so that mercury, and ammonia, dropped into it, and upon a portion of hydrate of potash, and a slip of moistened turmeric paper was then introduced. The potash was melted by a spirit-lamp and suffered to run upon the zinc, and by continuing the heat, the turmeric paper showed a part of its yellow colour, and the reaction is evident. After the action of the gas, the amalgam and ammonia formed nitrates, which are ascertained by the smell and its action upon turmeric paper. Iron and phosphorus decompose diluted nitric acid with similar results; and it has also been found, that the rust or peroxide of iron formed within houses is capable of absorbing and strongly retaining the ammoniacal vapours there developed. (Ann. de Chim. et de Phys. 24—99.)
is, however, entirely hypothetical, and is shown by numerous facts and analogies to be extremely improbable.

Although mercury is the only metal which appears to combine with ammonia, there are several metallic oxides which unite with it. These compounds are called ammoniurets, and will be described under each metal: for the present we shall merely mention, that the solution of ammoniuret of zinc is only known by its green tinge, and of nickel the same, except when the excess of ammonia is driven off, and then it is green; the ammoniuret of cobalt is of a fine red colour. The solid ammoniurets of silver and gold are extremely explosive substances, and are called fulminating silver and fulminating gold. With the latter ammonia forms salts: we shall, however, describe only the more important, viz., the acetate, carbonates, nitrate, oxalate, and sulphate.

Acetate of Ammonia.—This salt is prepared by adding sesquicarbonate of ammonia to dilute acetic acid. Owing to the superior affinity of the acetic acid for the ammonia, the carbonic acid is expelled from it with effervescence, and a colourless solution remains, which, when concentrated, and placed under the exhausted receiver of an air-pump, over sulphuric acid, yields transparent prismatic crystals, the taste of which is hot; they are very deliquescent. According to Dr. Thomson, they are composed of 1 atom of acetic acid, 51; 1 atom of ammonia, 17; and 7 atoms of water; their atomic weight is, therefore, 131.

Acetate of ammonia is directed to be prepared in the London Pharmacopœia, and kept in solution under the name of Liquid Ammonia Acetate. It is used externally as a refrigerant, and internally as a diaphoretic, and is commonly known by the name of Sal Ammonaci desertorii.

Carbonates of Ammonia.—Of these there are three, the carbonate, sesquicarbonate, and bicarbonate. The carbonate may be procured by mixing one volume of carbonic acid gas and two volumes of ammoniacal gas in a jar over sulphuric acid, and then decolourizing with lime. The sesquicarbonate is obtained by mixing and heating carbonate of potash and muriate of ammonia. By a series of decompositions, the carbonic acid is transferred from the potash to the ammonia of the muriate, and the sesquicarbonate formed, being volatile, rises in vapour, and is condensed in the upper part of the subliming vessel. It is a white salt, pungent to the smell, and acrid to the taste; soluble in cold water, and decomposed by hot water. It acts as an alkali upon vegetable colours, and consists of

One atom of carbonic acid 22
One atom of ammonia . 17

Atomic weight . . . . 39

It is used in medicine as a stimulant in a preparation called in the Pharmacopœia, Spiritus Ammonius Aromaticus, and commonly Spirit of Salt Volatile.

Sesquicarbonate of Ammonia.—This salt is contained in the Pharmacopœia: under the incorrect name of Ammonium Subcarbonas, or subcarbonate of ammonia. It is directed to be prepared by heating, in a subliming vessel, a mixture of one part of muriate of ammonia, or sal ammoniac, and one part and a half of carbonate of lime or chalk; it is, however, usually, and more economically obtained by decomposing sulphate of ammonia with carbonate of lime. In this case, double decomposition ensues, sesquicarbonate of ammonia is formed, volatilized, and is condensed in the upper part of the vessel, while sulphate of lime remains in the vessel.

Sesquicarbonate of ammonia is a colourless, translucent, moderately hard salt; it has a pungent smell, and a sharp, penetrating taste, but less so than the carbonate. It is soluble in about four times its weight of cold water, and is decomposed by hot water. It may be obtained in white, yellow, and yellows, like an alkali, and on this account, as well as its ammoniacal smell, has been called a subcarbonate.

It is composed of

Three atoms of carbonic acid 66
Two atoms of ammonia . . 34
Two atoms of water . . . . 18

Atomic weight . . . . 118

As three atoms of carbonic acid are combined with one atom of ammonia, and these being as one to half a one, this salt, like others similarly constituted, is generally termed a sesquicarbonate.

It is used in medicine as a stimulant, and usually called smelling salts. It is also employed as a substitute for yeast in making some of the finer kinds of bread. As a chemical re-agent, it is extensively used; and also for preparing various other ammoniacal salts.

Bicarbonate of Ammonia.—This salt may be prepared by mixing, over mercury, equal volumes of carbonic acid and ammoniacal gas, and allowing it to decay. By passing carbonic acid gas into a solution of sesquicarbonate of ammonia, in which way it may be obtained in crystals; by heating a mixture of equal weights of muriate of ammonia and carbonate of lime in a subliming vessel; or lastly, and with the greatest perfection, by expelling the carbonic acid from the sesquicarbonate of ammonia to the air until it becomes inodorous; in this case, a larger proportion of ammonia escapes than remains, and the residue thus becomes a bicarbonate.

When obtained by sublimation, it resembles the sesqui-carbonate in appearance, but differs from the latter in being devoid of pungency; it is rather hard, soluble in cold, and decomposed by hot water. When perfect, it has no alkaline action on vegetable colours, like the preceding carbonates. The salt obtained by sublimation, or by exposing the sesquicarbonate to the air, consists of

Two atoms of carbonic acid 54
One atom of ammonia . . 17
Two atoms of water . . . 18

Atomic weight . . . . 89

It is rarely used either in medicine, or as a chemical reagent.

Muriate of Ammonia.—This salt has been long known, and is extremely well known under the name of Sal Ammoniaci muriati. The substance from which it was first procured, was the soot of camel's dung. It is now largely manufactured in Europe, by combining muriatic acid, either directly or indirectly, with ammonia, obtained from the decomposition of animal matter, and variously rendered sesquicarbonate by the operation of heating the muriate obtained during the preparation of coal-gas, or carburetted hydrogen. The impure carbonate of ammonia which this liquor contains is either at once saturated with muriatic acid, or first converted into sulphate of ammonia, and afterwards treated with alkalis, to render it sal ammoniac muriatum; in this state the products are sulphate of soda and muriate of ammonia, and this last is separated by crystallization, and sublimed.

Muriate of ammonia, as obtained by sublimation, is an amorphous, translucent, colourless salt; but when separated from water by crystallization, its form is cubic. It has a sharp, saline taste, but no smell, and dissolves readily in water; exposure to a dry air produces no change in it; by heat, it volatilizes without decomposition. Lime and the fixed alcalis decompose it, evolving ammoniacal gas; on being heated with sulphuric acid, it forms muriatic acid gas, and as may be shown by the perfect condensation of these proportions in a jar over mercury; or by weight, of

One atom of muriatic acid 54
One atom of ammonia . . 17

Atomic weight . . . . 89

It is generally used for preparing ammoniacal gas, and the sesquicarbonate of ammonia, in the modes already described.

Nitrate of Ammonia.—When sesquicarbonate of ammonia is added to dilute nitric acid, effervescence occurs, owing to the evolution of the carbonic acid of the decomposed sesquicarbonate, and a solution of nitrate of ammonia remains; this, by evaporation, yields slender crystals of nitrate of ammonia; they are colourless, inodorous, very sharply saline to the taste, readily soluble in water, and deliquescent in a moist atmosphere. When heated to about 500° F, they decompose, and is resolved into water and nitrous oxide gas. Sometimes the solution of nitrate of ammonia, instead of being merely evaporated till crystals are formed, is reduced till the water is so nearly expelled, that the salt solidifies in cooling. In both states it is composed of

One atom of nitric acid 54
One atom of ammonia 17
One atom of water . . 9

Atomic weight . . . . 90

It is principally used for preparing nitric oxide gas.

Oxalate of Ammonia.—This salt is prepared by adding
sesquicarbonate of ammonia to a solution of oxalic acid, until it is saturated. The solution by evaporation yields small prismatic crystals; these are devoid of smell, have a bitter, saline taste, and dissolve readily in water. 

Oxalate of ammonia is composed of

<table>
<thead>
<tr>
<th>One atom of oxalic acid</th>
<th>36</th>
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</thead>
<tbody>
<tr>
<td>One atom of ammonia</td>
<td>17</td>
</tr>
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Two atoms of water . 18

Atomic weight . . . . . 71

It is used as a test of the presence of lime, and to precipitate it from solutions of alkaline and earthy substances.

Sulphate of Ammonia.—It has already been mentioned, that this salt is formed as an intermediate step in preparing muriate of ammonia, and this is the principal purpose to which it is applied. In small quantity, it is best made by saturating a solution of ammonium sulphate with sesquicarbonate of ammonia. The solution is colourless, and by evaporation yields small prismatic crystals; these have a saline taste, and are readily dissolved by water. Crystalized sulphate of ammonia is composed of

<table>
<thead>
<tr>
<th>One atom of sulphuric acid</th>
<th>40</th>
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<tbody>
<tr>
<td>One atom of ammonia</td>
<td>17</td>
</tr>
</tbody>
</table>

Two atoms of water . 18

Atomic weight . . . . . 75

According to Dr. Thomson there is a variety of this salt, the crystals of which contain only half as much water as the above-mentioned; but this kind is not usually met with.

The general properties of the salts of ammonia are as follows: soluble in water, few exceptions; decomposed by the fixed alkalis, and alkaline earths, with the evolution of ammonia; decomposed when a maganese salt and a soluble phosphate are added; with a white, crystalline precipitate, and in cold water, a double salt, composed of phosphate of ammonia and phosphate of magnesia; decomposed and dissolved by heat, except the acid, like the phosphoric and boric, be a fixed one, in which case the ammonia is expelled, and the acid remains; a solution of muriate of ammonia occasions a yellow precipitate in solutions of ammonical salts.

AMMONIAC (GUM), a concrete juice produced in Persia, Abyssinia, &c., but the plant from which it is obtained does not appear to have been ascertained. Willdenow refers it to the Heracleum gumiferum, in which he is followed by the British Colleges of Physicians. Others refer it to the Ferula orientalis. It consists of grains of various sizes, usually called tears: they are either separate or agglutinated into masses, their colour is whitish, they are semitransparent, sometimes yellow by the action of the air; they are shining, opaque, irregular in shape, and more or less globular; when cold, ammoniac is rather hard and brittle, it softens by the heat of the hand, but does not entirely liquefy at a stronger heat. They smell disagreeable, and the taste is nauseous, at first mucilaginous and bitter, and afterwards acrid.

Its specific gravity is 1.207. When triturated with water, it is partly dissolved, forming an emulsion which becomes clearer on standing. When distilled with water, it loses its volatile oil, and becomes inodorous; the distilled water has the odour of the gum, and small drops of limpid, colourless oil float on its surface. Alcohol takes up about half its weight, forming a brownish-yellow solution; which becomes turbid when it is boiled, and returns to a liquid when it is cold. It forms with a white flame, little smoke, and a strong smell; the ashes left, consist of small portions of the carbonates of potash and lime, and phosphate of lime.

Sulphuric acid readily dissolves ammoniac, and water precipitates it; and amonic acid converts it into a bitter substance; the fixed alkalies form with it a turbid solution, which is extremely bitter.

According to Bucholz, ammoniac consists of

<table>
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<tr>
<th>Resin</th>
<th>72.0</th>
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<tbody>
<tr>
<td>Gum</td>
<td>28.1</td>
</tr>
<tr>
<td>Bassorine</td>
<td>1.6</td>
</tr>
<tr>
<td>Volatile oil, water and loss</td>
<td>4.0</td>
</tr>
</tbody>
</table>

100

My kindred, and the name Ammon has nearly the same signification. There is no etymological connexion between הַנִּבְנֶנֶת הָעֲנָן children of Hammon, and the Egyptian word Ammon or Ammon. The Ammonites, or the children of Ammon, are called by the Septuagint and Josephus, Ammanite. The country which they inhabited was situated between the rivers Arnon and Jabbok, N.N.E. of the Moabites, and east of the tribe of Reuben. They dwelt there, we are old time; and the Ammonites called them Zamummim (בֵּנֵי זָמַם) those who devise wickedness, a people great and many, and tall as the Anakim; but the Lord destroyed the Zamummim before the Ammonites, who dwelt in their land. The Israelites, under Moses, smote the Amorites, and possessed their land from Arnon unto Jabbok, even unto the children of Ammon, about the year 1450 before Christ: but they did not enter the territory of the Ammonites, for the border of the children of Ammon was strong (Num. xxii. 24). The Israelites were directed not to distress the children of Ammon, because the Lord had given the land unto the children of Lot for a possession. About 1161 B.C., the children of Ammon, under their king, passed over the Jordan, and encamped in Gilead with the pretext of recovering the country which they falsely accused the Israelites of having taken from them 300 years before. Jephthah, the Israelite commander, then took the king of the Ammonites, and persuaded the king of the Ammonites, that the Israelites never went into the borders of Ammon. In the battle that followed, Jephthah smote the Ammonites from Aror to Minith, and subdued them (Judges x. 13.). In the year 1095 B.C., the Ammonites encamped against Jabesh Gilead, and offered to make terms with the inhabitants on condition that he might put out all their right eyes, and lay it for a reproach upon Israel. Upon this, messengers from Jabesh went to Gibeath Saul and Saul, and made them promises; and they came into the midst of the host in the morning watch, and slew the Ammonites until the heat of the day, so that two of them were not left together. After the victory, Samuel said, Let us go to Gilgal and renew the feast: and they put away the foreigner from among the children of Israel, and brought all the Ammonites out of the land of Israel. The Ammonites then hired the Syrians of Beth-Rehob, and 20,000 footmen of Zobah, and of king Maacah 1000 men, and of Ishtob 12,000. To oppose this force, David sent out Joab, who defeated the Ammonites in the valley of Jizreel, and brought out the Syrians from beyond the Euphrates, but David took 700 chariots of the Syrians, and slew 40,000 horsemen, and Shobach, the captain of their host; so the kings that were servants to Hadadezer, made peace with Israel, and Joab returned to the land of Ammon any more. About 1053, David sent Joab and his servants, and all Israel, and they defeated the children of Ammon, and besieged Rabbah, their metropolis. And Joab took first the royal city, or that part which contained the palace, and the reservoirs and springs of water. And Joab sent messengers to David, and said, I have taken the city of waters, now gather the rest of the Israelites and take Rabbah: lest I take the city and it be called after my name. David took Rabbah, and put a garrison in it, and brought out of the city a talent of gold, with the precious stones: and it was set on David's head, and he brought forth the spoil of the city in great abundance. His treatment of the conquered people was harsh and cruel. About A.C. 940, the Ammonites, Moabites, and others came against Jehoshaphat, to battle in Hazazon-tamar, which is En-gedi. Jehoshaphat proclaimed a fast, and Judah gathered themselves together to ask help of the Lord, which came by the command of the hostile forces. For the children of Ammon and Moab stood up against their comrades, the inhabitants of mount Seir; one only helped to destroy another, and none escaped. And Jehoshaphat and his people stripped off precious jewels from the dead bodies, and riches, more than they could carry away, and they were three days in gathering the spoil. And on the fourth day, they blessed the Lord in the valley of Berachah. Therefore, the name of the same place is called Beracha, which means blessing. And the fear of God was on all the kingdoms, when they heard that the Lord had fought against the enemies of Israel,
the the the general may so About ration.

AMNO'NIUM. From AMMO'NIUM.

AMMO'NIUM. (Deut. vii. 14; Zephaniah, ii. 9; Jeremiah, xlix. 1-5; Ezekiel, xxv.)

About 600 B.C., bands of the Ammonites came with Nebuchadnezzar against Jerusalem, (2 Kings xxiv. 2) and exulted in the downfall of their once powerful and invete-

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very broad and large compared with the others, and the other has a two-lobed crest; the seeds are contained in a loose skin, and are enclosed in a rather tough capsule which is separated into three cells by as many membranous partitions, and finally opens into three valves. The leaves are of a broadly lanceolate or oval figure tapering to the point, and enveloping the stem like a sort of sheath.

The cardamoms, grains of Paradise, and mellagetta pepper of the shops, a class of highly aromatic pungent seeds, are produced by different species of amomum, especially by A. cardamomum, and A. grana Paradisi. In Sierra Leone there is among other species one called A. grandiflorum, the seeds of which have a stimulant flavour resembling that of camphor. The following figure of this and of the cardamom plant will furnish an idea of the general characters of the genus.

AMOOD, a pergunnah, belonging to the East India Company, in the province of Gujarat. It is a narrow strip, lying along the eastern shore of the Gulf of Cambay, between the western boundary of the Broach pergunnah and the southern boundary of the Jumboooser pergunnah, formed by the Dhadur river. Its extreme length is 30, and its general breadth 8 miles; but it is much narrower at the north-east end: its superficial content is 224 square miles.

This area is partitioned in unequal proportions among 44 villages. Rather more than one-half of the land is under cultivation: a large portion of that which is considered unproductive, consists of an extensive salt-flat, which lies along the north-western boundary of the pergunnah, and adjoins the sea. The only port, Ghundhar, is situated in this quarter; its trade is now insignificant, although the town must at some remote period have been a considerable place, as appears from the extensive ruins around it. The lands of Ghundhar are entirely neglected, not an acre has been cultivated for many years, although much of it is considered fit for tillage: the inhabitants are chiefly occupied in making salt. In the cold season salt is produced in the pans in about a month, but in the warm season the evaporation goes on much more rapidly. The gross produce of the salt-pans is thus divided: 50 per cent. to the government, 35 per cent. to the proprietors of the pans, and the remaining 15 per cent. in various proportions among different native functionaries.

Every foot of land in this and the other pergunnahs of the district belongs to some one or other of the villages of which the pergunnah is composed. The strict observance paid to the preservation of their boundaries by the inhabitants of every village in this quarter is remarkable. These boundaries are commonly marked by strips of land 20 or 30 yards in breadth, which are left waste; and though they are sometimes ploughed up by common consent, the line remains as fully recognized as if it bore the most visible marks. Every pergunnah has its own hereditary officers of revenue and record, and every village has its establishment of public servants.

Some part of the soil of Amood is sandy, and of a light brown colour, but the greater part is of superior fertility, and well adapted for wheat, which, with millet, forms the principal food of the inhabitants. The wheat is of the bearded kind, and grows to the height of 18 inches: there are commonly about 50 grains of wheat in each ear. It is sown late in September, or early in October, and ripens in March, when it is pulled up by the roots. An experiment was tried in 1819, to ascertain the produce of wheat, which was ascertained to be equal to only 336 pounds, or 6 bushels per acre. The field on which this experiment was made had been fallow the preceding year, but had not been manured. The seed is sown very thin, at the rate of only two-thirds of a bushel to the acre, and the ripening grain is subject to the depredations of very large birds, called kullums, which visit the country just before harvest in large flocks. Numerous herds of antelopes are also commonly met with, and are very destructive to the crops. A considerable quantity of cotton is produced.

The population of Amood has been ascertained to amount.
to 16,347 souls, of whom 3203 are Mohammedians, and 13,144 are Hindoos. The number of houses in the parghannah is 4572; cows and buffalo's, 5908; of oxen, 4639; of pigs, 752, and of carts, 889.

This parghannah was obtained by cession from the late Peishwa Dowlat Rajo Scindia, under the treaty of Poona, dated 13th June, 1817. (Report of Colonel Williams in Appendix to the Report of the Hon. Board of Commons (1832) on the Affair of the East India Company.)

AMORITES (אמוריים, Amōriyā). The most powerful tribe of the Canaanites, or the aborigines of Palestine. The name Amorites seems sometimes to be used for all the Canaanites, as all the British are by foreigners sometimes called Canaanites. The Canaan people begar his land for beds of water, and the Jebusite, and the Amorite, and the Girgasite, and the Hivite, and the Arkite, and the Sinite, and the Arvadite. These are the sons of Ham. (Gen. x. 25-26.) The Amorites are mentioned among the ten nations whose country was given to the seed of Abraham. (Gen. xix. 21.) The Amorites dwelt chiefly in the mountains, which afterwards belonged to the tribe of Judah. (Num. xiii. 30. Deut. i. 20.) The name אморא means head, top of a tree, and מִדֶּרֶח head of a tribe, emir, chiefman, prince. Perhaps the name was given because the Amorites were like Emirs at the head of the Canaanitish tribes. Others have translated אמורא amarus, bitter, embittered, from רע; or rebel, from רע; or talking, eloquent, from רע. The word רע occurs in the singular number only, which is often used collectively for the whole Amoritish nation. Some Amorites dwelt in the plains bordering upon the tribe of Dan, and others between the rivers Jordan and Arnon. This plain lay between the borders of Moab and the Amorites. (Num. xxi. 13.) Of the cities of the Amorites it was said to the people of Israel, 'Thou shalt save alive nothing that breatheth; but thou shalt utterly destroy the Hittites, Amorites, Perizzites, Hivites, and Jebusites, as the Lord thy God hath commanded thee, that they teach you not to do after all their abominations, which they have done unto their gods.' (Deut. xx. 16.) Even their sons and their daughters have they burnt in the fire to their gods. (Deut. xiii. 11.) 'Whoever of the children of Israel or of the strangers that sojourn in Israel, giveth of his seed unto Moloch shall be put to death.' (Lev. xx. 2.)

The Amorites were of tall stature. According to Amos, (ii. 2) they were high as cedars and strong as oaks. This passage is supported by the historical statement of the rich size of the iron bedstead of the Amoritish king, Og of Bashan, was nine cubits by four. (Deut. iii. 11.) Hence we may infer, that Og's stature was gigantic, although it did not fill his iron bedstead any more than the Stuarts filled the history of Israel. But whilst Og held the rock over great deep, stopped the deluge, until the water being made hot scalded the giant to the bone, who now, mounting the ark, rode out the storm. If Og retained his appetite, he must have been an inconvenient passenger, for his bill of fare was daily 1000 joints of oxen, 10000 beds of barley, and 10000 measures of wine. According to Berechoth, Og, having ascertained that the camp of Israel was three miles in extent, tore up a sheet of rock of the same size, with the view to crush all arts of war, by putting this extinguisher upon the history of Israel. But whilst Og held his hound it was bored by insects, broken into pieces, which fell on his shoulders, and nearly strangled the giant. Joshua, watching this dilemma, took an axe ten ells long, and being himself ten ells high, he jumped another ten ells, struck Og in the ankle and lamed him for life, until he was finally destroyed at the age of 900 years. (Blackwood's Magazine, 1832, p. 744.)

So much seems certain, that in antient times the natives of Syria exceeded in stature the inhabitants of the desert and of Egypt.

The four confederate kings (Genesis xiv.), who plundered Sodom and Gomorrah and took Lot captive, smote also the Amorites that dwelt in Hazazon Tamar רַעְשָׁן תָּמָר amputation or cutting of the palm tree, which place was afterwards called Engedi, יִבְנְיָת Kid's Eye or Kid's Fountain, on the western borders of the Dead Sea. (s.c. 1913.) Abram dwelt at this time in the plain of Mamre the Amorite, the brother of Eshcol and Aner, Abram's confederates. Hence we perceive that the Amorites chiefly inhabited the country afterwards occupied by the tribe of Judah, (Gen. xiv. 13) and that they were on friendly terms with Abram.

The inhabitants of Gideon were Amorites. By feigning to send ambassadors from a great distance they obtained entrance into Jerusalem, and after a battle with the Israelites under Joshua, (Deut. i. 16-18) they were driven away. (Joshua xvi. 25.) For this confederacy Gideon was attacked by five kings of the Amorites; but Joshua chased them from Gideon to Bethoron, Azekah, and Makkedah, where, according to Joshua, (x. 11) more died from the arrows than were slain by the sword. After this all the Amorites retained so much power, that they forced (s.c. 1451) the children of Dan into the mountain, for they would not suffer them to come down to the valley.

But the Amorites would dwell in Mount Heres in Ajalon, save in Shimshan; yet the house of Joseph prevailed so that they became tributaries. And the coast of the Amorites was from the going up to Akramib, from the rock and upward. ( Judges i. 34-36.) The remarkable fact, that the Israelites conquered the mountains sooner than the plains (Explain Judges i. 19.) it was because the inhabitants of the plain had chariots of iron.

About the year s.c. 1120 there was peace between Israel and the Amorites. The Gibeonites (to whom seven descents of Saul were delivered by David about the year s.c. 1620, that they might revenge themselves for Saul's atrocities) were of the remnant of the Amorites whom Joshua had made hewers of wood and drawers of water. (Jos. ix.: 2 Sam. xx.) Another branch of the Amorites dwelt between the rivers Jordan and Arnon. (Num. xxi. 15, xxvi. 36; Judges xi. 18.) Here Moses and the children of Israel smote ten kings of the Amorites, namely, Sibon, who dwelt at Heshbon, and Og, king of Bashan, in the plain east of Jordan. These kings had refused to let the Israelites pass through their borders. But these kings were not exterminated, and that their descendants formed, even during the time of the Maccabees, a distinct tribe; for we read in Josephus's Antiquit. (xiii. chap. 1.) that the Amorites (Ἀμοραίοι πάειοι) from Medaba fell suddenly upon the corps of Johannes Gadda, when he was conveying, according to the command of his brother Jonathan, the baggage of the Jewish host to the Nabataean Arabs who roved between the Eufrates and the Red Sea. Simon and Jonathan revenged the death of their brother Johannes by falling suddenly upon the splendid train of an Amoritish bridegroom with all his rich adjutants, and took the daughter of a rich Arabian, from Gabatha to Medaba. On this occasion 400 men, women and children were killed.

AMOS, the prophet, was a native of the town of Tekoa, which was about six miles south of Bethlehem. He was not a prophet's son, but a herdman, and a gatherer of ac- camole fruit, and the Lord took him as he followed the flock, to prophesy unto Israel. (Amos vii. 14, 15.) Therefore, Amos mentions the kingdom of Judah only incidentally, and hence Dr. Coke, Dr. Adam Clarke, and others argue that Amos wrote during the reign of the last two kings of Judah, from 796 B.C. to 768 B.C. Others maintain that Amos was to be a native of the kingdom of Israel. Amos saw his visions concerning Israel in the days of Uzziah, King of Judah, and in the days of Jeroboam II., King of Israel, two years before the earthquake. (Amos 1. 1.) This earth- quake is mentioned by Zechariah, (xiv. 5) 'Ye shall be like as ye fled from before the earthquakes in the days of Uzziah, King of Judah,' which happened, according to the
opinions of the later Jews, when Uzziah went into the temple to burn incense upon the altar, and Azariah, the priest, went in after him, and with him fourscore priests, valiant men who withstood Uzziah, and said, it appertaineth not unto thee to burn incense, but to the priests that are consecrated to their office; and the coals from the fire leaped over the wort, leprosy rose in his forehead, and the priests thrust him out from thence. (2 Chron. xxvi.) According to Josephus, (Antiquit. ix. 10. § 4.) the earthquake began during the king's altercation with the priests. A ray of the sun, according to the story, fell through a fissure of the temple into the face of the king and struck him with leprosy. The western part of Mount Olivet rolled four stadia or farlungs to the east side of the mountain, covered many streets and destroyed the king's gardens.

It is noticeable that the prophecies of Amos were delivered between the years 798-784 before Christ.

With this period, the contents of the book of Amos agree, for the borders of Israel extended from Hamath to the Arnon (Amos vi. 14.), and the vices, which the prophet denounces, are such as usually predominate during periods of temporal prosperity and security Isaiah, Hosea, and Amos were contemporaries. The opinion that Isaiah, a member of the royal family, was a son of Amos the herdsman, arose from a confession of the prophet whose name is Amos DOPPY (signifying, burden or burdened) with the word ἵνα (strong) Amos, the name of the father of Isaiah.

The Greeks wrote both names Amós.

In the Book τοῦ τῶν προφητῶν τῆς λαοθῆς καὶ τῶν φύλων, which has been published with the works of Epiphanius, who was bishop of Constantinople, in Cyprus, at the end of the fourth century, we read that Amos, born at Tekoa, in the land of Zebulon, the father of Isaiah, was wounded with a sword by Amaziah the priest, at Bethel, whom he had proved for worshipping calves. The son of Amaziah struck him with a cudgel on the head, so that he died two days after returning to his country, where he was buried with his fathers. The land of Zebulon may here signify the sündy region, the desert of Tekoa, which extends from the south of Jerusalem to the Persian Gulf, at the entrance of which Tekoa was situated, surrounded with tolerable pastures. Or it means the country of הילאון, the Idumean, Gen. xxxvi. 20, which the Latinas called terra Sobal. (See H. A. Hamaker, Commentario in libellum de vita et morte Prophetarum. Amst. 1833. In Histori resi Commentarius.)

The apostle St. Jerome's saying, that Amos was 'rude in speech, but not in knowledge;' Bishop Louth, in his twenty-first lecture, shows that Amos was not behind the chief prophets in eloquence. The book of Amos is written in an excellent Hebrew style, but the orthography differs greatly from the usual standard. Amos, the herdsman, has taken many figures from pastoral life, but he alludes also to history, geography, and astronomy. Thus we see that knowledge, in olden times, was not confined to those who, like Isaiah, were of the blood royal, or priests like Jeremiah, but extended sometimes even to herdsmen.

Chapter i. i., ii., iii. describe the approaching judgment of Jehovah, which rolls like a thunder-storm over the surrounding states, Damascus, Philistia, Tyrus, Edom, Ammon, Moab, who have been delivered by the usual means, to the people who have bowed to Baal, that by the face of the Lord, to the persons, and in particular, to the king and his house, with the condition of the land, with the future of the people.

Chapter ii. ii., iii. contain the predictions of the punishment of Israel and Judah. The first sentence of this judgment, in which is interwoven the history of Amaziah's opposition, who said unto Amos, O thou seer, go, flee thee away into the land of Judah, and there eat bread, and prophesy there. But the theological authority of Amos rests upon the internal character of his work, upon the united testimony of the Jewish and Christian church, and upon the use which the apostles made of Amos (v. 25, 26, in Acts vii. 42., Amos ix. 11., and in Acts xvi. 1.). Philo, Josephus, and the fathers quote the most tortuous, like the mori prophers, and even the master of the book of Tobit (ii. 6.) quotes a passage from Amos, mentioning his name.

AMOY, a celebrated port of China, in the province of Fokien, in 20° 45' north latitude and 118° east longitude.

In Mandarin dialect, the name of the place is Hea-mun, which is pronounced by the natives Ha-moy.

The district in which this flourishing town, the emporium of the commerce of the province, is situated, is one of the most barren in all China, and not only yields nothing for food or growth even for the meanest to life on the neighbouring island of Formosa, which has been described as the granary of the eastern coast of China. Notwithstanding this serious disadvantage, the merchants of Amoy are among the most wealthy and enterprising in the Chinese empire; they have formed connections all along the coast, and have established commercial houses in many parts of the eastern archipelago. Most of the Formosan colonists emigrated from the district of Amoy, with capital supplied by its merchants, and in proportion as the island has flourished, so has Amoy increased in wealth and importance.

During the south-west monsoon, the merchants of Amoy freight their vessels at Formosa with sugar, which they sell at various ports to the northward, returning home with cargoes of drugs. They maintain regular connections along the coast, and have established commercial houses in many parts of the eastern archipelago. Most of the Formosans colonist emigrated from the district of Amoy, with capital supplied by its merchants, and in proportion as the island has flourished, so has Amoy increased in wealth and importance.

The ship Amherst visited Amoy last year (1832) with no better success; it appears, however, that the obstacles to her trading all proceeded from the authorities, and not from the people, by whom our countrymen were received in the most friendly manner. The harbour of Amoy is spacious (Length of 1800 feet, breadth of 800 tons.)—The Tartars, traders of the Tartars. They are the merchants, and the Tartars went to Borneo, Macassar, Java, and the Soo-loo islands; and many of them annually visit Singapore, in order to procure goods of British manufacture.

This port has not always been closed against European vessels. According to the New Co- company,—The King of Tywan, on taking Amoy in 1675, issued a proclamation inviting both Chinese and foreign merchants to trade thither, exempting them from the payment of all duties for three years. Many vessels, in consequence, resorted to the port, but the exemption was speedily revoked. In 1681, the town was taken by the Tartars, but Europeans were still allowed to trade thither, and continued to do so until 1734, when the exactions of the Mandarins deterred them from continuing so unprofitable a commerce; they then ceased to visit Amoy. Many years after, many vain endeavours and much fruitless discussion were employed to induce the Chinese to trade, so that the vessel was obliged to proceed to Bengal for a cargo.

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AMPHIBIA, (from the Greek word ἄμφιβια, which signifies having a double life), a zoological term employed in different senses by different writers. In common conversation we are accustomed to call all mammals, such as seals, otters, beavers, &c., amphibious, whose organization disposes with to resort indifferent either to the land or water for procuring food and other purposes, or whose habits are at once terrestrial and aquatic; thus we usually denominate the common campagnol (Arctosa amphibia) and white-belled shrew (Sorex forsteri) to the land, whilst we consider them in every respect as amphibious animals. But in this sense of the word every land-animal is more or less amphibious, for all resort occasionally to the water, and with the single exception of man, all appear to have an instinctive power of swimming. Previous to the time of Linnaeus, the earlier naturalists attached no more definite meaning to the word than that which was sanctioned by popular custom, and which, it will be observed, is more temporary than the general term aquatic. The British philosopher, however, rejected this vague and improper signification, and applied the term generally to the third class of his system of zoology, which comprised not only all the animals since more properly denominated reptiles, such as lizards, snakes, and frogs, but likewise the cartilaginous fishes. Linnaeus was evidently ignorant of the true characters and natural limits of this class of animals; the term amphibia was certainly very applicable to many of the genera and species which it embraced, but with
regard to the great majority of them it was an absolute mis-
nomer. The shark and the ray are as incapable of existing out of
the water, as many of the common lizards are of living in
it, and consequently neither group of which Linnaeus pro-
posed to establish, nor the name by which he designated
it, has been adopted by more recent zoologists. The car-
laginous fishes have been referred to the other aquatic
tribes, with which their habits and organic conformation
more nearly correspond, and the name, which stands in Gmelin's celebrated edition of the Sys-
tema Naturae under the name amphibius, is admitted into
modern systems under the more appropriate designation of
reptiles.

In its strict and literal sense, the term amphibious
would apply only to such animals as have the power of living
indifferently, at the same time, either upon land or in water.
To fulfill this condition it is necessary that a truly amphibious
animal should be provided with the means of breathing in
excess of these elements, that is, that it should always,
neously possess both lungs and gills. Now there are four
genera of batrachian reptiles which actually do possess this
extraordinary double apparatus for extracting the principle
which supports animal life indifferently, from either element;
and the former of which, Baron Cuvier has justly observed, comprise
in reality the only known vertebrated animals which are truly
amphibious. They are the azolotl, the menobranchi, and
the sirens, all of which inhabit the rivers and lakes of Ame-
rica; and which is found in various parts of Europe, con-
necting certain lakes in Carniola and Hungary. 'The existence
and simultaneous action of gills and lungs in these animals,' says
Baron Cuvier, in a note to the Régime Ani-
mal, 'can no longer be doubted as one of the most clearly
evident characters of the natural history, I have before me,
lobes of a siren of three feet in length, in which the vascu-
ar apparatus is as well developed and as complicated as in any
other reptile, yet nevertheless this siren had gills as com-
plete as any other species.' These then are the only strictly
amphibious reptiles; but if we were disposed, to take the
term in a little more extended sense, it might, without
impropriety, be applied to the entire order of reptiles which
M. Brongniart, and after him all modern naturalists, de-
notiate batrachians, because in these animals, without
exception, we find any period of gills in their tadpole stage,
and only acquire lungs when they assume the more mature
and perfect form of reptiles.

Beyond this, however, the term cannot with propriety be
extended to the reptiles in general, because these animals,
though they appear to consist of two portions, yet so great
a quantity of them remain under water for a much longer period
than birds or mammals, can no more absolutely dispense with
breathing than the higher classes, and like them would
immediately expire, if prevented from coming to the surface to
breathe. For further information upon this subject, see REPTILE, BATRACHIANS, and
AQUATIC ANIMALS.

AMPHIBOLYTE, a name sometimes given to the
same mineral commonly called hornblende, and
which was introduced by Haiy, the mineralogist, who use-
lessly changed many names. He called hornblende amphib-
bole, because it is easily mistaken for augite, another simple
mineral closely allied to it in composition, from amphibolle, equivocal.

AMPHICTYONS, members of a celebrated council in
ancient Greece, called the Amphictyonic Council.

According to the popular story, this council was
founded by the Achaians of Ithaca, who, when he lived at
all, many centuries before the Trojan war, it is supposed,
by a writer quoted by Pausanias, x. 8., to derive its name,
with a slight alteration, from a word signifying settlers
around a place. Strabo, who professes to know nothing of
it during any part of its existence, and with the
means of informing us. The fullest information is supplied by Æschines the orator; but before any attempt
is made, by the help of some short notices from other
writers, and of conjecture, to trace its earlier history, it
may not be amiss to state what is certainly known of this
council as it existed in his time.

According to Æschines, the Greek nations which had a
right to be represented in the council, were the Thessalians,
Boreotians, Dorians, Ionians, Pherinbians, Magnesians, Lo-
rians, Cilicians, Paphians, Malians, Phocians. Each
nation was represented by certain sovereign states, of which
it was supposed to be the parent: thus Sparta, conjointly
with other Dorian states, represented the Dorian nation.
Amongst the states thus united in representing their
common nation, there was a perfect equality. Sparta enjoyed
the supervision of the orator of the council, who was
chosen annually by lot, to which office all the
sun towns in Doris, and the deputies of Athens, one of the
representatives of the Ionian nation, sat in the council on
equal terms with those of Eretria in Euboea, and of Prione,
ion colony in Asia Minor. From a rather doubtful
passage in Æschines, De Pyr. Leg. 43., compared with a
statement in Diodorus, xvi. 60, it seems that each nation,
whatever might be the number of its constituent states, had
two, and only two votes. The council had two regular ses-
sions in each year, meeting in the spring at Delphi, and in
the autumn at Pylen, for the purpose of giving room for great
special meetings were sometimes called before the usual
time. From its meeting at Pylen, a session of the Am-
phictyons was called a Pyles, and the deputies were called
Pylagorum, that is, councilors at Pylen. There were also
deputies or representatives distinguished by the name of Hieromnemens,
whose office it was, as their name implies, to attend to matters
pertaining to religion. Athens sent three Pylagorum and
e one Hieromnemon. The former were appointed for
continuous services, and met at Delphi once, perhaps for
the year, or two sessions. The council entered
charges laid before it in relation to offenses com-
mitted against the Delphic god, made decrees thereupon,
and appointed persons to execute them. These decrees,
and the persons they appointed, were called Pylagorum, or
Delphic decrees, decrees of the Delphic council, or
Delphian priest. The oath taken by the deputies bound the Am-
phictyons not to destroy any of the Amphictyonic cities, or
to deprive them of the use of their fountains in peace or
war; to make war on any who should transgress in these
particulars, and to punish such cities; to run with the
foot, voice, and with all their might, any who should plun-
der the property of the god, (the Delphic Apollo,) or should
be privy to, or devise anything against that which was in
his temple. This is the oldest form of the Amphictyonic
council which has been reported, and is called the
Æschines the ancient oath of the Amphictyons. It has in
advertently been attributed to Solon by Mr. Mitford, who
has apparently confounded it with another oath imposed on
a particular occasion. An ordinary council consisted only
the deputies and Pylen, sometimes a judge, and some occasions at Delphi, all who were present with the
Amphictyonic deputies to sacrifice in the temple and con-
sult the oracle of the god, were summoned to attend, and
the question was referred to it to prevent any lengthening
out of it by any lengthening in the council, and
by the orator, whilst he speaks generally of
the twelve nations, names only eleven. Strabo agrees
him in the larger number. It is further remarkable, that
whilst Æschines places the Thessalians at the head of his
list, Demosthenes, De Pac. p. 62. expressly excludes them
from a seat in the council.

Æschines has left us much in the dark as to the usual
mode of proceeding in the Amphictyonic sessions; and we
shall look elsewhere in vain for certain information. It
should seem that all the Pylagorum sat in the council and
took part in its deliberations, but if the common opinion
is correct, the council never met except under the necessity,
be correct, it is correct that they did not all vote. The
regulations according to which the decisions of the twelve
nations were made can only be conjectured. We
know that the religious matters which fell under the juris-
diction of the council, were examined; the Ams proceeded,
and it is supposed, at least, by the Hieromnemens, who appear, from a
verse in Aristophanes, Nub. 613., to have been appointed to
lot, but we are not as well informed respecting the limits which separated their duties from those of the Pyla-
gorum, nor respecting the relative weight of their votes in them. The
continuance of the Amphictyons, it is said, is fixed by
the orator, whilst he speaks generally of
the twelve nations, names only eleven. Strabo agrees
with this. The section of the orator, which
is considered by some as the most strikingly
from the orator, whilst he speaks generally of
the twelve nations, names only eleven. Strabo agrees
with this.
seemed to themselves to discover that the office of the Hieromnemones was of comparatively late creation, that these new men were partly unknown to the Thessalians, and that one of them always presided in the council; others again have supposed, that, indeed, an ancient lexicographer has expressly asserted, that they acted as secretaries or scribes. Two Amphictyonic decrees are found at length in the oration of Demosthenes on the Crown, both of which begin thus: 'When Cleinaogoras was priest, at the vernal Pylae, it was resolved by the Pylaeans and the Synedri of the Amphictyons, and the common box of the Thessalians was given up. Hence Cleinaogoras the priest was the presiding Hieromnemon, and others that the Hieromnemones are comprehended under the general name of Pylaeans. Xæchines again has mentioned a decree in which the Hieromnemones were ordered to repair at an appointed time to a temple at Pyla, carrying with them the copy of a certain decree lately made by the council. Of the council, as it existed before the time of Xæchines, a few notices are to be found in the ancient historians, some of which are not unimportant. According to Herodotus, 1. 200, it was held its meetings near Thermopylae, in a plain which surrounded the village of Anthela, and in which was a temple dedicated to the Amphictyonic Ceres; to whom, as Strabo tells us, i. 429, the Amphictyons sacrificed at every session. This temple, according to the judgment of the Amphictyons, was abandoned, and hence arose, as Müller supposes in his history of the Dorians, (vol. i. p. 289, English translation,) the tradition mentioned above.

You are told by Strabo, i. 418, that after the destruction of Creos, the Amphictyonic army, under the command of Eurylochus, a Thessalian prince, the Amphictyons instituted the celebrated games, which from that time were called the Pythian, in addition to the simple musical contests already established by the Delphians. 

According to this supposition, the Circean, and the celebrated Cirrhenian war, are the same, and Eurylochus must have lived as late as n.c. 591. But the history of these matters is full of difficulty, partly occasioned by the frequent confusion in the name of these and other associations.

From the scanty materials left us by the ancient records, the following sketch of the history of this famous council is offered to the reader, as resting on some degree of probability:

The council was originally formed by a confederacy of Greek states, and reformed and reinforced on its return from the contest afterwards called Thessalians. In the lists which have come down to us of the constituent tribes, the names belong for the most part to those tribes of primitive Greeks which are still heard of, and some of which continued to dwell north of the river Henich, and guarded the temple of the Mother of God; such as the worship of Ceres, near whose temple at Anthela its meetings were held. With the worship of the goddess was afterwards joined that of the Delphic Apollo; and thenceforth the council met alternately at Delphi and Pyla. Its original seat at Thessalians was kept in remembrance by the continued use of the term Pylaean, to designate its sessions wherever held: though eventually the Delphic god enjoyed more than an equal share of consideration in the confederate state. In the degree of importance of Apollo, the primitive worship in its progress southwards can be faintly traced from the confines of Macedonia, was the peculiar god of the Dorians who were of the Hellenic race; whilst the worship of Ceres was probably of Pelasgic origin, and appears at one time to have been known as that of the Thessalians, since the worship of Ceres is thought to have prevailed in the interior of Thessaly and in great measure to have retired before it. There is no direct authority for asserting that the joint worship was not coeval with the establishment of the council; but it seems probable from facts, which it is not necessary to examine, that such a combination as this was the result of the influence of the older residents, the worshipers of Ceres, in the neighborhood of the Molian bay, before the hostile intruders with their rival deities were joined with them in a friendly coalition. The council met for religious purposes, the principal object being to provide a secure temple for the worship of the two deities. With religion were joined, according to the customs of the times, political objects; and the jurisdiction of the Amphictyons extended to matters which concerned the safety and internal peace of the confederacy. Hence the Amphictyonic laws, the provisions of which may be traced in the terms of the title of the Delphic oaths. Confederacies and councils, similar to those of the Amphictyons, were common among the ancient Greeks. Such were those which united in federal republics the Greek colonists of Asia Minor, of the Ionians, and Dorian nations. Such also was the confederacy of seven states whose council met in the temple of Neptune in the island of Calauria, and which is even called by Strabo, viii. 374, an Amphictyonic council.
he says that the decision of the Amphictyons on all matters had at that time pre-eminent authority. The sacred wars, as they were called, which were originated by the Amphictyons in the exercise of their judicial authority, can here be noticed only so far as they help to illustrate the immediate subject of inquiry. The Cirenean war, in the time of Solon, who had been sedulously instructed. The port of Circe, a town on the Cirenean bay, afforded the readiest access from the coast to Delphi. The Cireneans, availing themselves of their situation, gravely oppressed by heavy excisions the numerous pilgrims to the Delphic sanctuary, few by direction of an oracle, proclaimed a sacred war to avenge the cause of the god; that is, to correct an abuse which was generally offensive, and particularly injurious to the interests of the Delphians. Circe was destroyed, the inhabitants reduced to slavery, their lands confiscated to Aphetus, or was pronounced on all who should hereafter cultivate them.

We are told that S0bon acted a prominent part on this occasion, and that great deference was shown to his counsels. The Amphictyonic army, he is opposed to the direct testimony of the ancient historians.

From the conclusion of the Cirenean war to the time of Philip, an interval of but two centuries, we hear little more of the Amphictyons, than that they rebuilt the temple at Delphi, which had been destroyed by fire in a. c. 548; that they set a price on the head of Ephialtes, who betrayed the cause of the Greeks at Thapsyllo, and conferred on him the right of self-defense, or did the thing that they erected a monument to the famous divor Scyllus as a reward for the information which, as the story goes, he conveyed under water from the Thessalian coast to the contumacious city of Corinthians, that is to say, that he may be trusted, the power of the Amphictyons had not at this time fallen into contempt. When a proposition was made by the Lacedaemonians to expel from the council all the states which had not taken part in the war against the Persians, it was resisted successfully by Thesmophoria, on the ground that the exception of those considerable states, Argos, Thebes, and the Thessalians, would give to the more powerful of the remaining members a preponderating influence in the council dangerous to the rest of Greece.

After a long period of time, the Amphictyons in history, we find them venturing, in the fallen fortunes of Sparta, to impose a heavy fine on that state as a punishment for an old offence, the seizure of the Thessian Calmes, the payment of which, however, they never insisted on. In the year 369 B.C., at the celebrated Phocian war, the Amphictyonic council can be considered only as an instrument in the hands of the Thesban, who after the successful re-estimation to Sparta, appear to have acquired a preponderating influence in it, and who found it convenient to use its name and authority, whilst prosecuting their own schemes of vengeance or ambition. Though the charge brought against the Phocians was that of impiety in defiling that part of the sacred Cirenean plain, there is no reason to think that any religious feeling was excited, at least in the earlier part of the contest; and Amphictyonic states were eagerly engaged as combatants on both sides. For an account of this war, the reader is referred to a general history of Greece. The council of the Amphictyons, it may be inferred, is engaged in the attempt to receive a new member, and in fact a master, in the person of Philip of Macedon, who was thus rewarded for his important services at the expense of the Phocians, who were expelled from the confederacy. They were, however, at a subsequent period, restored to their participation in the cause of Greece and the Delphic God against the Gauls. It may be remarked, that the testimony of the Phocian general Philomelus, whatever may be its value, is rather in favour of the supposition that the council was not always consulted with Delphi, as it justifies his opposition to its decrees, on the ground that the right which the Amphictyons claimed was comparatively a modern usurpation. In the case of the Amphissians, whose crime was similar to that of the Phocians, the name of the Amphictyons was again readily employed, but the crimes which seem to have been the principal instigator of the war, that doubtless a higher object in view than that of punishing the Amphissians for impiety.

The Amphictyonic council long survived the independence of Greece, and was, probably, in the constant exercise of its religious functions. As the battle of Cirene had retained enough of its former dignity at least, to induce Augustus to claim a place in it for his new city of Nepicus. Strabo says that in this time it had ceased to exist. His words are to be understood literally, it must have been re-christened under the same name as that of the Delphian council, which had resulted from the union of the other states sent their deputies according to its cycle, and not to every meeting. For the time of its dissolution, we have no authority on which we can rest.

To give a national unity to numerous independent states, of which the Greek nation was composed, but had a merit which did not belong to those states in equal degree. It cannot be doubted that the Amphictyonic laws, which regulated the originally small confederacy, were the parent of all that had been afterwards ordained throughout Greece; and which, imperceptibly as a tree, had some effect in regulating beneficially natural intercourse among the Greeks in peace and war, and, as it went, was opposed to that brute force and aggressive spirit, as we have seen it practised by Athens, who, by exercising the right of being or not to be Greek name. To the investigator of that dark but interesting period in the existence of the Greek nation, which precedes its authentic records, the hints which have been left us on the earlier days of this council, faint and scarce as they are, have still their value. They contribute something to those fragments of evidence with which the learning and still more the ingenuity of the present generation are converting mythical legends into a body of ancient history.

**AMPHIDESMA.** Among zoologists, is the name of a genus of marine bivalve shells, which live in the sea at the sea-shore of tropical climates. The shells are of a beautiful form, probably that it was once the property of the fewk Repos before the appearance of the
Conchological Observations in the Zoological Journal, considered what is usually called the ligament of bivalves as only one substance. It is, however, two substances, of very different characters, the one being ligament, the other heart-ligament, and only employed to keep the two valves together, is formed of fibrres extending from the edge of one valve to the other; but the cartilage is elastic and formed of perpendicularly fibrres, like the prismatic crystalline-structured shell, its use being to separate the valves from one another when the muscles will open them, and to arrest them when closed. When the valves are closed, this part is compressed by their edge.

For this purpose it is sometimes, as in the shell under consideration, placed in a small triangular cavity close to the hinge, when the shell will have an internal carriage, the ligament being still in action. When the other shells it is placed, along with the ligament, on the margin of the valves, and is pressed, when the valves are closed, against the ligament itself, which forms its outer wall. This resistance which the ligament offers is the means of opening the shell. The cases have opalescent reflections, and the cartilages of some large shells, as the mother-of-pearl shells, are sold by the jewellers under the name of Peacock-stone, or black opals. They are not so much used now as formerly, but they are still much sought after.

AMPHILA, BAY OF, a bay extending for about sixteen miles along the west coast of the Red Sea, in 14° 30' N. lat. and 41° E. long. from Greenwich. Mr. Salt has given a chart of it on a large scale, from surveys, in his "Journal," 1835, p. 527. This bay includes thirty-three islands in the bay, the largest of which, called also Amphila, lying near its south-eastern extremity, is not quite a mile in length. Of these islands one only is a rock of calcareous stone; the others are covered with combines, madrepores, and other marine alluvia, strongly cemented together, and covered with a thin layer of soil. None of them are now inhabited, though on one, called Kuttu, there are the ruins of some houses. On the main land at the bottom of the bay is the bay of Doryol, and farther to the south-east, the smaller village of Maulin. Between these and the sea is a sort of thick jungle of rack trees. This district was formerly part of the old kingdom of Dankali, and still retains that name. Mr. Salt thinks it probable that Amphila is not a native name, but corruptions of the Greek 'Ampilhíaka Anály, mentioned by Strabo, Casaub. p. 771. (Salt's "Abyssinia," chap. iv.)

AMPHIPOSIS, an ancient Greek city, on the left or eastern bank of the river Strymon, just below its egress from the lake Kerkine, now called Ephyra, a length of five miles from the sea, and belonged to the Edonians, a Thracian people. The first attempt at coloniza-

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AMPHIBIAN, another species of animal which signifies, an animal that can walk in both directions, in zoology a genus of serpents, distinguished by their bodies having nearly the same uniform thickness from the head to the extremity of the tail, their small mouths and extremely deep pons, their eyes, their remarkably short tails, and the numerous rings of small square scales which completely surround this organ and the body. A range of small pores runs in front of the vent, which is situated nearly at the end of the tail; the scales alone are produced only on the middle line of the body, the palate being without any; and even those of the jaws are few and distant from one another. They are, moreover, destitute of Fangs, and are consequently harmless and inoffensive, living for the most part upon ants and small insects, seated in the crevices of trees and rocks, which they themselves construct under ground. The nature of their food does not require these animals to possess the power of dilating the mouth and gullet to the extraordinary extent that is observed in the boa, pythons, and other serpents: in general, what they live upon is cut into smaller pieces, and is proportionally much larger than themselves, and in order to admit the huge mouthful the upper and under jaws both equally move upward the cranial. In the amphibus, on the contrary, the upper jaw is fixed to the skull, and the lower maxillary and mandibles, by ligaments, so that the head remains constantly in the same plane with the body,—a form which permits the animal to move equally well in either direction, namely, either backwards or forwards, and which has acquired for it the name by which it is denominated.

The head of the amphibus is so small, and the tail so thick and short, that it is difficult at first sight to distinguish one from the other, and this circumstance, united to the animal's habit of proceeding either backwards or forwards as the occasion may require, has given rise to the popular term amphibus, which very generally spread throughout Brazil and other parts of South America, the native countries of this genus, that it possesses two heads, one at each extremity, and that it is impossible to destroy the animal by simple cutting, as the parts which have been separated from each other by the serious accident, and soon re-unites as if nothing had happened. Ignorance is the parent of superstition and absurdity, and one wonder naturally produces twenty: it is not therefore surprising that, among an ignorant and credulous people, the singularity of the amphibus's form and habits should have given rise to this and a multitude of other gross fictions.

Another snake," says Stedman, in his History of Surinam, which I also observed here, is about three feet long, and annulated with different colours; it is called the "scalabanes,"
from the supposition of its having two heads; and the truth is, that from its cylindrical form the head and tail so much resemble each other that the error is almost pardonable: besides which, the eyes are nearly imperceptible. This is the snake which, being supposed blind, and vulgarly said to be fed by the large ants already described, is in this country honoured with the name of King of the Eunmets. The flesh of the amphibana, dried and reduced to a fine powder, is confidently administered as a sovereign and infallible remedy in all cases of dislocation and broken bones: it being very naturally inferred that an animal which has the power of healing an entire amputation on any other part of the body, should at least be able to cure a simple fracture in the case of another.

Two centuries have scarcely passed since opinions equally credulous and absurd were universally prevalent among the most enlightened nations of Europe, when grave and learned physicians administered the poison or rhinoceros-horn with as much confidence as the simple Brazilian at present does the powdered flesh of the amphibana.

The genus amphibana, as at present defined, contains only American species, which are confined to Brazil, Surinam, and other tropical parts of the continent. Of these the following are the principal.

1. The _A. fuliginosa_, the first, and still the best known species of the whole genus, is, like all the other amphibanas, confined to the hotter regions of South America, and does not inhabit Guyana or any other part of the tropical Indies, as Linnaeus and Lecéepe have erroneously supposed, and asserted on the authority of Seba. The general colour of this serpent is a deep brown varied with shades of white, more or less, as these according to the differences in the individual and the season of casting the old and acquiring the new external skin. It grows to the length of eighteen inches or two feet, of which, however, the tail measures only an inch or fifteen lines. The body is surrounded by upwards of two hundred rings, and the tail by twenty-five or thirty; the eyes are covered and almost concealed by a mucous membrane, which, added to their naturally diminutive size, has given rise to the popular opinion that the animal was entirely deprived of sight: an opinion extended with no better reason to the common blind-worm (_Anguis fragilis_).

It lives among worms and insects, particularly ants, in the moulds of which it usually conceals itself. The antipathy which most people entertain against serpents in general has given rise to a belief common among travellers, that this species is venomous, but without the slightest foundation in reality, as it is entirely destitute of fangs, and its teeth in other respects a small as to be incapable of inflicting a wound.

2. _A. alba_, so called from its colour, that is of uniform pale straw without any marks or spots. The head of this species is short and thick, and its mouth small. The body usually measures from one foot six to one foot nine or ten inches, and is surrounded by two hundred and twenty-three rings: the tail is from an inch and a half to two inches in length, and is surrounded by sixteen or eighteen rings. The thickness of the body seldom exceeds that of a man's fore-finger, and is uniform throughout its whole length; that of the former species, on the contrary, equals the thickness of a child's wrist of ten or twelve years old. The _A. alba_ inhabits the same localities and lives in the same manner as the _A. fuliginosa_, from which it differs only in size, colour, the proportionate length of the tail and body, and in having the mouth provided with a great number of teeth, all, however, equally small and weak.

3. _A. venenosa_, a species mentioned by Baron Cuvier in the second edition of the _Regne Animal_, but without any detail description. It inhabits the island of Martinique, and is said to be entirely deprived of sight, at least M. Cuvier was unable to discern any trace of eyes. He supposes it, however, to be identical with the _Amphibana venenosa_ of Spix, which that naturalist describes as having one scarcely perceptible.

The works of Prince Maximilian of Neuwied and M. Spix on the general zoology and etymology of Brazil contain descriptions of three or four smaller species of amphibanas.

**AMPHISSCII,** literally double shadowed, a Greek term applied by ancient astronomers to the inhabitants of the lowest zone, with whom the sun sets at noon, sometimes on the north, sometimes on the south, of the midday line, and whose shadows at noon are therefore turned to the south during one part of the year, and to the north during the remainder.

**AMPHITHEATRE,** the name by which a special structure much used by the Romans, and combining the forms and some of the uses of the ancient theatre and circus is generally distinguished; indeed most of the Roman classical writers apply to it the name of circus also. A distinction, however, is now always made, the term circus being applied to the species of structure here referred to, and circus being restricted to the Roman stadium or hippodrome. [See Circus.]

The name amphitheatre seems intended to convey the idea of a double theatre; but what is termed a theatre with reference to its original uses, more strictly an oblong theatre, and what we call an amphitheatre was truly a theatre. The one was for hearing music and recitations, and the other for seeing sights—as the words import. [See Theatre.]

The form of the amphitheatre is, on the plan, that of an ellipse, with a series of arcaded central walls, separating corridors which have constructions with staircases and admitting passages between them. It encloses an open space called the arena, either round or, on a very little above or below the level of the surface of the ground on which the structure is raised. From the innermost central wall, which bounds the arena, and which will be from ten to fifteen feet above its level, an inclined plane runs upwards and upwards over the intermediate wall, staircases, and corridors, to a gallery or galleries over the outermost corridors. The inner and upper part of the inclined plane is covered with a graduated series of benches following the general form of the plan; these are intercepted at intervals by radial passages leading by a more easy graduation to and from the staircases which pass through the substructions of the benches to the corridors. These corridors, in the principal stories, continue uninterruptedly all round the edifice, and afford easy access to, and egress from, every part. In cases where the radiating passages through the bank of benches were few, concentric platforms or preceintions went round to make the communications complete. The external elevation of an amphitheatre is almost dictated by its internal arrangement and construction, and it generally falls into two or more stories of open arches, which are necessary to give light and air to the corridors and staircases.

The Amphitheatre seems to have been contrived for the more convenient exhibition of such shows as were confined by Digitized by Google
[Longitudinal Elevation of the Flavian Amphitheatre, or Colosseum, Rome.]

[Longitudinal Section—on the line from a to b of the plan of an Amphitheatre—The Colosseum.]

[Ground Plan of an Amphitheatre—The Colosseum.]
throughout the same place, such as combats, which could not be seen advantageously along the length of the circus; and moreover the circus had not the lofty arcade, podium, or oratoire. To protect the spectators from the savage and powerful brute animals which were frequently used in the public shows of the Romans. Indeed, it is reported that this defect was a cause of the abandonment of the circus for such exhibitions as required the use of wild beasts. The great expense of the construction of the circus walls and for adopting the more compressed and lofty form given to the amphitheatre, whose arrangement admits of a far greater number of persons being brought within a smaller area, and consequently within more convenient view of the arena, amphitheatres were constructed of timber. Several accidents occurred, indeed, in consequence of the use of such, from fire, and from their insecurity to bear the weights they were subjected to; and, in one instance, Tacitus (hist. iv. 62.1) states that the amphitheatre of this kind fell during the exhibition of the shows, in the town of Tlecna, when 30,000 persons were either killed or hurt. Afterwards they were more securely and more permanently constructed of brick or stone, according to the facilities the place afforded, or to the means of the people at whose expense the structures were laid.

It was in the latest period of the Republic that the Romans were deputed by the gladiatorial and other shows which led to the use and construction of amphitheatres: and the attention which that art of demonizing casualties of such spectacles may be attributed, in some degree, its eventual overthrow, in all but form, and the establishment of the disposition of the emperors. The all powerful men in the state who aimed still higher, sought favour with the people by this method of entertainment, the sums due, and the numbers of men and beasts engaged, and for the most part destroyed, in furnishing them seemed almost incredible.

The difference in the national characteristics of the Greek and Romans is by nothing more forcibly illustrated than by the constant indications of theatres or olimums which mark the sites or immediate vicinities of ancient Greek cities, and the remains of amphitheatres which are common to those of the Romans.

To save unnecessary expense, the Grecian theatre was formed on, or in the side of a hill, whenever the locality would afford this advantage: the seats were generally cut in the living rock, and such constructions added before it in the latter half of the theatre and proscenium and their accessories as were absolutely necessary to complete the theatre. The amphitheatre of the Romans was raised, for the most part, within the town or city, on the level plain, of costly magnificence, and generally of enormous extent, with which the colonnades are in every set of secondary importance. Indeed, theatres for music and the drama are seldom found among the remains of purely Roman cities, but almost every Roman colony, and even camp, bears indications of a constructed or excavated amphitheatre, a great indication that the Romans would contain from eighty to a thousand and hundred persons:—and the little city of Pompeii, which has indeed two theatres, has, moreover, an amphitheatre, whose arena alone would contain them both. The Grecian cities of Sicily, on the contrary, exhibit the contrary indication and indication of the amphitheatres of their Roman masters are few and unimportant; and the old cities of Greece itself, and the Roman cities of Asia Minor, are almost entirely free from the pollution of the latter species of structure,—the Roman indicates the place of having to care for and adorn commodious or camp-built amphitheatres alone. Of this sort,—the Castra Crensis amphitheatre,—we have indications still existing in England:—the principal are at Cirencester and Dorchester; but they were originally little more than mere excavations, or turf-built structures made up with what walking was absolutely necessary to form the grand concentric bank of benches. In the provinces of Gaul,—both transalpine and cisalpine,—Sirmium and Verona, by the remains of the amphitheatres, show us how much more completely the inhabitants were nationalized, or Romanized, than those of Greece or of Britain.

There is, perhaps, no species of structure peculiar to the Romans, with the details of which we are so well informed, as that of the amphitheatre, and there is hardly an style to which we have not a report of the architecture of the remains which still exist in various places tell us nothing, plainly what they were than the most elaborate description can; and although there is no example of an amphitheatre in complete preservation, or which is so, yet the extensive indications of the various parts so clearly show the general arrangement, that but little difficulty in supplying from one of them what is defective in another. Still there are minor particulars of which we must remain ignorant, unless we take them by such documents as the architecture of antiquity. We know of no sort of ancient edifice, generally, in which ingenuity is displayed in the arrangement, or so much as in the construction, as were exemplified by the Romans in the design and execution of the amphitheatre; but here is the disposition of the various parts so clearly shown by the analogy afforded by other examples and from probate, that the imitation is perhaps the only one by which the full position of the amphitheatre is hardly outdone by the triumphal arch, which is the worst that ever was imagined by the Greeks, as it is called, of architecture in the Roman century.

The most remarkable, and one of the most perfect in its details, of the remaining examples of the amphitheatre, that is known as the Colosseum at Rome here of the kind of edifice;—the plan and elevation are almost entirely made out from the existing remains, and much description is necessary, composed from the analogies afforded by other examples and from probate. The Colosseum sketch at the head of this article is a view of the amphitheatre of Verona, as it exists, looking into it; this will aid the section in giving an idea of the structure in the above statement. Indeed, if the projection of the structure be added to each diametrical length, that proportion will be produced as nearly as possible, and in this the architect appears to have erred; for if he had any reason for the proportion assumed between the conjugate and transverse, or between the breadth and length of the ends, it should have been taken on the extent of the outer wall, so that the periphery might be true, which is not the case. Of course, in the diminishing series of concentric walls the proportion of the elliptical or secondary wall of area are as five to eight, as nearly as may be, the breadth being 297 feet, and the breadth 180 feet. The difference between the external and internal diameters, of 333 feet, or 106 ft. 6 in. at each end, is occupied by four corridors and two blocks of amphitheatres, and the remaining space is from the stances and ways from the outer corridor to the inner, and to the arena, together with the concrete or encircling walls which grid the structure, separate the corridors, and enclose the arena. Two of the surrounding corridors lie between, or adjoin each other, on the outer side, and in this particular, the Colosseum exceeds every other structure of the kind of which we have any knowledge, in the rest having but one only; it thus acquires a second edifice, as may be perceived by referring to the section, in which also, it is simplified: but the whole of the immense edifice will be found to be little short of six acres.

The outer encircling wall is pierced by eighty openings, leaving, of course, an equal number of piers; every opening is arched, and in on against every pier is a column or pilaster. The diameters of the arches of the central openings in each set, or in each of the series, is of particular note, so that this central opening is formed in an entablature which runs in an open line all round the structure. With the exception of the four central openings, which are the diameters of the ellipses, and which are nearly two feet wider than the rest, all the openings arc nearly the same, their diameters being fixed at 10 feet 4 inches. An exactly similar series of arches, diminished only in proportion to the smaller extent of the ellipses, separates the second corridor from the first; and another, being the same, but smaller, separates the third from the second, or outer, and bounds the second corridor. The inner faces of the outer piers, both faces of the
The plans of the intermediate series, and the outer faces of the piers of the innermost series, have pilasters projecting from them, corresponding in height with the external columnar ordination, and bearing a moulded architrave from the dado up to the entablature, over the corridors and continued all round the edifice. The accompanying plan and section exhibit the general arrangement of the corridors here described, though the details cannot, on so small a scale, be made obvious. The elevation shows how the access also access to the corridors, with corresponding and nearly similar arched intervals, superimpose the lowest, and each other, and that each of these two upper ordinations rests upon a continued stylobate or dado, which is broken into every interval, or under every column. The second set of columns in every story, for indeed each set of outer corridors in every story, for behind every one of the three columnar ordinations, and above the outermost corridor in the third story, a mezzanine, or small middle story, for a corridor behind the first, and under the second, or upper, gallery. The same diagrams show that the third story of columns is superimposed by a pilastered ordination on a continued and recessed dado also, with a deep plinth they show, moreover, that a bold and massive entablature crowns the entire elevation, and runs its cornice round in one unbroken line.

From the third series of eight piers, on the ground story, as many walls, with the exceptions to be noticed, run inward to the third concentric corridor, which is arched over as the outermost corridor of the wall; and if we turn in it to the fourth or innermost corridor, which is bounded on the other side by the massive wall of the podium encircling the arena, and is also arched over, though it is not so lofty as the other three corridors are. Between the radiating walls of the arena, they select the spectator the best view of the third from the fourth corridors, are, of course, as many intervals. Some of these form the traversing passages; and the rest, in the outer block, contain the staircases which lead to the upper concentric corridors and so onward to the uppermost story, as they are usually described, from which lead to the lower benches, and small staircases in the thickness of the innermost wall conduct to the benches immediately on the podium. The benches extend in one long gradus or concentric curve from the podium to the top of it, and divide the story of the outer corridors, and over all the constructions within the second of them; they are bounded above by a wall which is pierced with doors. These give access from the upper and inner corridor, to the radiating flights of stairs, which intercept the benches at intervals, and cut them up into wedges, by which name in Latin, cunei, the divisions thus made were distinguished. This encircling wall has windows in it also, which may have been requisite to aid in ventilating the immense area; or they may have been intended for light, and it is not evident that the spectators could not find room on the benches. The section shows that the radiating flights of steps intercepting the benches do not run through their whole extent, but are themselves intercepted and taken up again,—other lines or flights continue, and the Venetian architects had one of the best. Access is given to these flights at their upper ends, by doorways from the corridors behind, sometimes directly, and sometimes by means of the internal staircases; and in most cases a short reversed flight of steps is made on the outside of the doorways, or on the interior, to which they are termed, to afford a headway, and avoid intercepting the benches further back than could possibly help. Almost every thing that appears in the section above the level of the third story, except the external wall itself, is restated and effective in the section. The concentric range of columns before the upper gallery, is entirely from conjecture; but for the galleries there is sufficient evidence in the existing indications of stairs, and in the toothings of the remaining columns, in detail, are better stubs, and may probably be stone, perhaps of marble, but in the galleries it is most likely they were of wood, and graduated so as to give their occupiers a view of the arena.

The most distinguished seats were those on the podium, and these were assigned to the emperor,—whose place was, by way of eminence, called the suggestum,—and to the senators, to foreign ambassadors, and to the great officers of the state. The cunei, or wedges, behind and above, were assigned to different classes, according to their rank, station, and fortune. The principal persons of state were seated in the best positions assigned to them, and with them sat such ladies of high rank as could obtain the advantage, but the women generally occupied the galleries.

As the plan indicates, the four central entrances,—those which lie on the ends of the diameters of the ellipse,—are reached by a series of steps which enter the Roman amphitheatre. They were ascended through, and finished more carefully, especially those leading from the sides, or on the minor axis; these, it is most likely, were reserved for those persons who went to the seats on the podium, and as they were in the best part of the arena, they would of necessity be more strictly guarded.

It does not appear that any part of the structure above the level of the ground, and outside of the arena, was appropriated as dens for the beasts which were used in the contests; the king of the beasts, the bear, was probably kept in the amphitheatre must have been traversed by them in their way to the arena, if that was the case. Substructions were discovered and excavated a few years ago over the whole extent of the arena; these led to a belief that it was floored with wood, so that the animals reserved for the day may have been keep in dens under the floor, and allowed to issue at traps in it. But some have supposed dens ranged all round the arena, within its surface and below the podium, and in which the beasts would have been daily kept directly.

In the Colosseum the great crowning cornice of the external elevation is pierced through at regular intervals with square holes or mortises, from which grooves are cut down through the rest of the entablature flush with the outer surface of the wall and continued intermediately above a strong projecting stone or corbel at about two thirds the height of the pilastered ordination. These are supposed to have been used to insert and receive poles to carry an awning strained over the whole enclosure to protect the spectators from the sun. But as they were not there, there must have been some intermediate support for it of which we are not aware; such an extent of cloth or canvas would hardly have been borne in that manner.

The external elevation is composed,—as it has been generally described,—of many stories or series of attached or engaged columns with their usual accessories, and a pilastered ordination, forming a species of attic, which is pierced with windows,—one in every interval from the heavy cornice to the top of the structure. The ordination of columns rests on the upper step of the entablature, or on the general floor of the structure; it is of what is termed the Doric style or order, but in the debased Roman manner, and its entablature wants the distinguishing feature of that style, the triglyph and metope, and if this style is found in the Roman manner, in the Roman way, or a sort of the Vitruvian term Tuscan, since it certainly is not Doric, and may be of the latter. The intervening arches are semi-circular; they spring from moulded impost, and have moulded archivolt on their outer faces. The second ordination is in the Roman manner, and consists of two columns; and the third is in the Corinthian or foliated style: these, as before stated, rest upon continued, broken or recessed, stylobate, but their entablatures are, like the rest, perfectly unbroken throughout, and the arches in blocking cornice, in both, correspond exactly except in minor details—with those of the lowest or Doric ordination.

The pilasters have foliated capitals also, and are called composites: they rest on deep plinths under which there is a continued and recessed dado, superimposing the Corinthian entablature; this dado is pierced with holes or round windows alternating with those of the ordination above, to give light to the corridor behind the lower and under the upper gallery on the inside. The crowning entablature is made of white marble, and the blocks or consoles occupying the whole depth of the frieze.

The style of these architectural decorations is, for the most part, as rude and tasteless as it well can be. The storied columnar ordinations, too, besides being themselves composites, are often disposed, in connection with arches; for—taking them separately—the columns of each ordination are too far apart to support their entablature sufficiently, which, therefore, itself appears weak, and they look struggling and inefficient. Taken together, the ordinations but repeat these faults, and produce a whole a poor and mean effect; the shelf-like cornices of their entablatures cut up, and destroy the simplicity of, the elevation, which no observer would suppose to be, as it is, nearly 166 feet high. The storied series of arches with simple moulded courses, and continued unbroken stereobata under each arched story, and with the broad and simple
atic—without pilasters—but crowned nevertheless by the fine bold entablature, would have been a far nobler composi-
tion. It is a supreme example of the art of the Romans, that
can be fairly termed a vica, seems to have pervaded the archi-
tecture of the Romans, for either columnar or pillared edifices, and sometimes, as in this case, both, are found on almost all the examples that remain to us of their amphitheatres. Interally, however, the amphitheatre must have been strikingly grand and impres-
sive; here none of the littlenesses of storied columns appeared, but the long unbroken lines of the podium, and the graduated surfaces of the benches and the galleried basin,
with the murmur of style above—when it existed—would have been as beautiful in general effect, as anything architecture over produced.

There are varieties in the arrangement of the details of the amphitheatres of other examples. In most, concentric galleries, platforms, or precincts sometimes intercepted the great bank of graduated benches to serve as passages of communication; and sometimes each staircase communicated directly and exclusively with one voniitory, instead of being connected generally, and gave access alike to every part of the enclosure.

Next in importance to the Colosseum at Rome, of existing structures of the kind, is the Amphitheatre of Verona. The plan will give some idea of the scale of preservation. The great external cincture is entirely

gone, with the exception of four arches and their accessories; but the great bank of concentric benches, with the staircases leading to them, and the ports about the arena, remains comparatively perfect. The outer surface was

pierced with seventy-two arches, which number appears in
the inner, with the corresponding radiating walls to the traversing passages and staircases,—for this had not a second encircling corridor on the outside of the stairs block as the Colosseum. The outer dimensions of this structure were 500 feet by 404 feet; the length of its arena is 242 feet, and its breadth or length, on the conjuge, 146 feet; the form, of course, was elliptical.

Mount Nismus in Languedoc is large and in comparatively good preservation;—the great external cincture of an amphitheatre remains in a very perfect state at Pala in Istru;—Rome contains the remains of a second amphitheatre called the Castrensian;—there are also considerable remains of an amphitheatre at Capua, and of another at Pozzuoli near Naples. That of Pompeii, it has been already remarked, was an extensive structure,—it was in many respects peculiar, but it is not so well preserved as some other examples which have been more exposed, as it suffered considerably from earthquakes. It was buried to a distance of four feet, and indications of an amphitheatre, though not a large one; at Catania, in Sicily, the upper and outer encircling corridor of an extensive amphitheatre is accessible, considerably under the level of the modern city, buried by the torrents of lava from Mount Etna, and several others of the ancient cities of Sicily exhibit remains or indications of small amphitheatres. Indeed, wherever Roman remains are found to any extent, whether at home or abroad, some indication may be almost certainly discovered of the existence at some time an amphitheatre.

AMPHIUMA, in zoology, a singular genus of batracian reptiles, first noticed by Dr. Garden in 1771, in a letter to Linnaeus. The remarkable and anomalous order of batra-
cians has been hitherto only feebly described by Linnaeus, and spread throughout the New World, and exhibit a far greater variety of organic modification in the western hemisphere, than in all the rest of the earth together. It is here alone that the monoporus, the amphiuma, the azurula, the monor-porus, to be found, are to be found, these animals abound in all the lakes and stagnant waters, and astonish the observer equally by the variety as by the novelty of their forms. The most remarkable character of these reptiles is the complete metamorphosis which they undergo in their progress from youth to maturity; a metamorphosis which not only affects their outward form, but entirely changes their systems of circulation and respiration. When first separated from the spawn or egg, they appear in the tadpole form, respiring by means of gills and inhabiting the water. After a period they neither lose their legs or arms, but a long tail compressed sidewise enables them to move about in the manner of fishes. Gradu-
ally, however, they acquire legs and feet, and whilst the

formation of these members is in progress, the lungs like-
wise are developed, in some genera entirely replacing the gills, in others continuing to exist and act simultaneously with these organs throughout the remainder of the animal's life.

The external form of the amphiuma is very similar to that of the common eel, but the whole anatomy and physiology of the animal approximates it more nearly to the commo
table distortion and physiology of the animal approximates it more nearly to the common water-newt (Tritons) than to any other known species. From this creature indeed it differs prin-
cipally in the extreme length of its body and the diminutive size of its extremities, which rather resemble small tentaculi than actual legs. The only two known species inhabit the

stagnant pools and ditches in the neighbourhood of New-

Orleans, those in Florida, Georgia, and South Carolina. They

uburn themselves in the mud at the bottom of the ditches,

particularly on the approach of winter, and vast numbers of them are sometimes found in draining and clearing points, to almost two cubic feet, or six English gallons, and a half a foot

in height; and the body, which is usually about six inches in diameter ending upwards with a short neck, tapers toward the lower part almost to a point. The Atlantic amphiuma contained three Roman urns, or seventy-two sextaries, equal to about two cubic feet, or a half of English wine-

measure. The Roman, sometimes called the Sicilian

amphiuma, contained two urns or forty-eight sextaries, about seven gallons, one pint English. Homer mentions amphora

both of gold and stone; and the Egyptians had them of

Amphorae. There are various specimens of earthen amphorae

in the British Museum, in the Elgin and Townley Galleries.

The amphorae is still the largest liquid measure used by the

Venetians, containing sixteen quarts.

There was another amphora among the Romans, which was a dry-measure, and contained about three bushels.

Earthen amphorae of the Roman time have been occasio-
nally found in England. Like other domestic vessels of the

Romans, they appear to have been sometimes used as fun-

gural urns. Columella says they were used to preserve

olives in. When filled with wine, they were usually lined with pitch or some other coating, on account of the porous nature of the material of which they were formed. Amphorae were placed as urns in the public streets of Rome till the time of Vespasian, when the practice was

AMPLITUDE, the angular distance of a celestial body from the east point when it rises, or from the west point when it sets. It depends upon the declination of the star and the latitude of the place, and may be computed from the formula,

\[
\sin \text{ amplitude} = \sin \text{ declination} - \sin \text{ latitude}.
\]
It must be measured towards the north or south points of the horizon, according to the declination is north or south. For the balsam, the amplitude relates to the same throughout the year: but for the sun it varies with the declination, being nothing at the equinoxes, and about 34° points of the compass at the solstices, or more exactly 39° 44' of amplitude, in the latitude of London; that is, at the summer solstice, it rises between N.E. and S.E., and sets between N.W. and W.N.W.; and at the winter solstice, it rises between S.E. by E. and S.E., and sets between S.W. by W. and S.W.

The term amplitude was also applied to what is more commonly known as the "law of crops," and the amplitude relates to the same throughout the year: but for the sun it varies with the declination, being nothing at the equinoxes, and about 34° points of the compass at the solstices, or more exactly 39° 44' of amplitude, in the latitude of London; that is, at the summer solstice, it rises between N.E. and S.E., and sets between N.W. and W.N.W.; and at the winter solstice, it rises between S.E. by E. and S.E., and sets between S.W. by W. and S.W.

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Tourniquet.) this command is obtained. By these instruments, then, namely, the tourniquet, and the needle and ligature, modern surgeons have such a perfect command over the blood-vessels, that operations may be performed, in which the largest trunks are divided without the loss scarcely of a single drop of blood. On this account, the mere removal of a limb excites in the modern surgeon no degree of anxiety; the operation of amputation is scarcely ever attended with the slightest hazard; nevertheless, there are circumstances connected with amputation of the greatest possible importance, delicacy, and difficulty, on a clear and correct view of which life depends; to obtain such a view, the most extensive knowledge, and the most accurate discrimination, are requisite; while, to act in conformity with it, a high degree of moral courage is often no necessary. Perhaps the determination of the exact time at which to amputate is sometimes among the most difficult points of surgery; that is, the determination of the time when the preservation of the limb is no longer possible; and when, therefore, it is right to put an immediate stop to any further exhaustion of the health and strength by the removal of the limb. The discrimination of the cases that absolutely require amputation, in contradistinction to those in which the necessity of amputation may be superseded by skilful surgical treatment; the easiest and safest methods of performing the operation; and the best mode of treating the patient after the operation has been performed, involve considerations of the last importance which are often not without considerable difficulty, but these are considerations purely and exclusively professional, and cannot be treated of in a work like the present. No one, however, can look into the modern books which treat of this subject without being struck with the prodigious advancement which surgery has made in recent times; without being deeply impressed with a sense of the debt of gratitude due to the illustrious men who have advanced surgery a mean, and not infrequently a mischievous art, and who have exalted it into a noble and beneficent science.

AMRITSAR, a very antient town, formerly called Chak, the holy capital of the people called Siks, or Sikhs, in 31° 33' N. lat., and 7° 48' E. long. In Burnes' map of the Indus, the latitude and longitude are somewhat more.

It owes its present name to a tank 136paces square, which was built by the Gooroo Ramdas, who improved the town to such a degree that, for a time, it bore the name of Ramdas-poor. Ramdas died in 1581, and in the course of time the name of Amritair—the pool of immortality—was transferred from the tank just mentioned to the whole town. This town is without any external walls, its houses are built of bricks and lofty, but the apartments are small and the streets are narrow.

Amritair has a considerable trade in the shawls and saffron of Cashmere, and is a place of great opulence owing to the resort of merchants and to its being the residence of some bankers of extensive dealings. Its native manufactories are confined to coarse cloths and inferior silk goods. The Raja Runjeet Singh of Lahore, to whom the district is subject, has lately built a fort here, which he calls Runjeethur, and he has improved the town by bringing a canal to it from the Ravee, the Hydrotas of Arrian.

The sacred pool has a temple in its centre, which is viewed with a high degree of veneration by the inhabitants, and is dedicated to Govind Singh, who died in 1708; and was the last Gooroo, or religious leader of the Sikhs. A book, containing the code of laws, written by Govind Singh, is deposited in this temple, in the service of which upwards of 500 priests are retained.

Amritair is about 44 miles east from the city of Lahore, which is on the Ravee, and 1312 miles travelling distance north-west from Calcutta.

(Rennell's Memoir of a Map of Hindostan; Manuscript Documents at the India Board, quoted by Hamilton; Report of House of Commons on the affairs of the East India Company, August, 1832.)

AMSTERDAM, the capital of the province of New Holland, and the commercial capital of the Kingdom of Holland, though not the seat of government, stands on the south bank of the IJ, or Y, a gulf of the Zuider Zee, in 52° 27' N. lat. and 4° 54' E. long. The small river Amstel runs into the Y through the city, and gives to it the Latinized name of Amstroladum, and its old name of Amstolredamme or Amsteldam; the word dam, which so often occurs in the names of Dutch towns, means 'a dyke, or embankment of earth to separate two lakes or canals.' The Amstel, four
miles south of the city is joined by the Veet, a branch of the old Rhine which runs past Utrecht. Amsterdam is thirty-two miles north-east of the Hague, and 107 north of Brussels, the capital of Belgium. The city is in the form of a crescent with the two horns projecting into the Y, and forming a kind of port. The Y forms the port of Amsterdam, which was formerly only protected by a double row of piles driven into the ground through the water: the two rows were at right angles, the head of one being near the other. About twenty-one such piles, called booms, were left for ships to pass through, but were carefully closed at night. Large vessels which could not pass through were moored outside in the laag or harbor. In 1748, this port was 725.) It also included the ornaments and dikes of the harbor for the small craft. At present two dikes enclose the east and west docks respectively. One begins near the Kraan Sluis and runs eastward, having an entrance called the Dok Sluis; the other commences near the Haarlem Sluis and is called the Wall Sluis. (See Plan of Amsterdam, 1836, door C, van Baarsel & Zoon.) On the land side it is surrounded by ditches and ramparts, which are now planted, after the Dutch fashion, with trees, and make an agreeable promenade: the Plantsoen (place planted with trees) on the south side of the town is the chief place of resort on Sundays and holidays.

The approach to this capital on the land side, especially from Haarlem, is described as very striking; the view extends over spacious meadows, covered with luxuriant grass, to the capital, where the tall maas masts of the ships in the harbor are visible, and the scene of activity and wealth is in the midst of a marsh, which seems ever moment threatened with inundation from the brimful canals and waters which surround it. These are dammed, and enable the inhabitants to lay the whole country around under water.

Amsterdam was originally a salt marsh, and in order to make a foundation for houses, it was necessary to drive large piles of wood or rather massive timbers, 210 feet long, which in some places is said to be forty or fifty feet thick. The nature of the soil may interfere somewhat in different parts; the following facts will show still better its character. In 1603, a well was dug in one of the hospitals of Amsterdam (Oude Hoop), and when twenty feet in depth, it was 232 Dutch feet. After seven feet of earth, there were found nine feet of peat, and then soft clay, sand, earth, clay rather hard, and earth, altogether making fifty-one feet of depth. Then came ten feet of sand, in which stratum the piles of Amsterdam chiefly rest. At the depth of seventy feet there was found one foot of pieces of peat, sand, through which they did not make their way, was found at the depth of 232 feet. (See Boek van de Vereenigte Nederlanden, &c. door Hulman und Hulshematic, 1853.)

Such is the substructure of a town which now contains above 200,000 inhabitants. The streets are generally in straight lines along the banks of the canals, which intersect the city; among the finest are the Heren Gracht or Gracht, and the Amstel of the East, while the West, Nieuwendrecht, and streets. Those in the central part of the town are narrow and without foot-pavement. The private houses are nearly all of brick, painted and ornamented with different colours. The Kalver Straat is filled with shops for jewellery, porcelain, China, books, pictures, and other articles of luxury, and though narrow, this shop is compensated by the rich display of merchandise. Several of the streets are lined with fine rows of elms, white trees, and limes. The canals which intersect them are interesting. There are about 140 of them, and the most numerous of the city is divided into ninety islands, which communicate by 290 bridges; the Amstel itself divides the town into the eastern or old, and western or new part, and is crossed by a bridge, the Amstel-Brug, partly built of bricks, and is 1,000 feet long, with 610 English feet long, sixty-four and a half wide, and furnished with iron balusters. Through the eleven central arches large ships pass. Near the bridge is the great sluice, (Amsteel-deur), for the commerce and waters of the city. It is dammed out, or allowed to flow through the city. By shutting the gates the course of the Amstel is stopped, and the country round the city laid under water.

Amsterdam contains thirteen churches for the reformed religion and faith. Amsterdam is in possession of English Episcopacy, one of the Remonstrants, three Lutheran, two Anabaptist, one of the United Brethren, sixteen Catholic, one Armenian, one Greek, five Jansenist, one Portuguese and one German Synagogue, in all forty-seven places of worship, or one for every 4255 persons. The number of charitable institutions is considerable.

This city has twelve public places, but not one of them is either large or magnificent: the bogt (bend) of the Heerengracht is a kind of circus which contains some of the best houses in Amsterdam. In the Dam we see the Stadhuis, or old town-hall of Amsterdam, built of Bremen and Bentheim stone, and said to rest on 13,559 piles of wood (Halmia): it is 150 feet long, 116 high under the mound, and 110 over a tower. The interior is adorned with a profusion of marble, statues, and pictures, which attest the splendor of the Amsterdam merchant, when he erected this edifice in 1648, building the greatest palace in the world; it is, perhaps, the finest room in Europe, being 120 feet long, 56 feet broad, and 98 feet high. Louis Buona parte, who had a great liking for palaces, contrived to possess this of when he was King of Holland, and the present royal family retain it as a palace. The two main exchanges, a large old building with nothing remarkable, except the concourse of merchants from all countries.

The church of St. Nicholas or the Old Church, (Oude Kerk,) is of great antiquity, but its precise date is unknown. In 1578 the Reformed service was first performed in it. The length of the church with the tower is about 275 feet; the tower itself is 2214 feet high: the width of the church at the transepts, measured on the inside, 2074, and on the outside 192 feet. This church contains tombs and monuments of many of the great warriors and magnates of Holland; among them is the monument of Admiral Heemskirk.

The New Church (Nieuwe Kerk) was originally built, partly on the model of the cathedral of Amiens, but burned down in 1645, it was speedily rebuilt, and is, in the opinion of the Dutch, one of the handsomest churches in Europe. Its pulpit is a curious specimen of carving; and the great organ is also much admired. It is 350 feet long, says a Dutch description, 210 wide across the transepts; the upper part rests on 52 pillars of hard stone, and the church is lighted by 75 large windows. It is also conspicuous for its noble and incomparable bronze (or brass?) ornaments of the quire, which consist of six quadrangular fluted columns, and 14 other finer small pillars. The church is adorned with two lions holding the arms of the city, and surrounded with well-executed leaf-work: all this, weighing many thousand pounds, rests on a noble marble base. This bronze work, which from top to bottom is 30 feet high, is cleaned twice a-year.

In the high quire of this church is the marble monument of the great Dutch admiral De Ruyter. In another part of this church is erected a monument to the hero Van Speyk. The Admiralty is in a beautiful and large building, with halls, magazines, on Kattenburg, and even the model-room are accessible to strangers. Near the dock-yard is a marine school, called the Kweek-School, or seminary, for the instruction of youths in naval tactics. The warehouses and foundries of Amsterdam are of great size, and the produce which are very considerable, will not excite the wonder of any person who has visited the banks of the Thames.

Among the many literary establishments of Amsterdam we must mention the academy on the Keizergragt, a large and tolerably handsome building, whose title is indicated by the words FELIX MERITIS, in large gilt letters, under the pediment. This academy is divided into five sections, which comprise the various departments of science and art. The Academie der Wetenschappen is another learned society, which has a library, museum, and news-room in the Kalver Straat. The botanical garden is not extensive, but contains some old species of Cape plants.

Among the places of amusement are three theatres. Among the prizes, the Raspheis, where the criminals used to saw various foreign woods, and the Spinhus (spinning-house) for females, are best known. Among the public affairs, which are regulated by the industry and perseverance of its inhabitants, to which the institution of the bank in 1609 has materially contributed. This is one of the oldest establishments of its kind in Europe, and has always been conducted with the utmost regularity and prudence, and is a great depot for the precious metals of the East and West Indies, with which it carries on a great trade through the Dutch colonies and its own trading companies.

The approach to Amsterdam from the North Sea or the Zuiderzee.
German Ocean is through the passage formed by the Texel and the extreme point of North Holland into the Zuider Zee, the navigation of which is difficult: near the entrance is a bar called the Pampus, over which ships are taken by means of large vessels or boxes, called camels, which being passed under the ship, and hoisted out of the water, buoy the whole up several feet. But since the completion in 1825, of the great Heldere Canal, (54 English miles long,) Amsterdam has at all seasons a safe and easy communication with the Texel by means of a boat passage through the whole length of North Holland. By means of its canals Amsterdam has an easy water communication with Utrecht and the Rhine, with Haarlem, the Haag, Leyden, Delft, and Rotterdam. One steam-boat is employed during the summer in conveying passengers to Hamburg, and two smaller ones as ferry-boats across the Zuider Zee. Amsterdam has no water that is fit to drink or suitable for culinary purposes, but what is brought in boats from the Vecht, a distance of fifteen miles: the pure water of Utrecht is sold in the streets for table use and for making tea and coffee. The want of so indispensable a necessity must be unfavourable to health, and the stench that arises from the canals in the hot days of summer is sometimes almost intolerable. The fuel of this great city is chiefly turf, which is found in great abundance in most parts of the kingdom. Billets of wood are occasionally used, and coals from Newcastle or the Forth by those who can afford to pay for them. It is remarked that Amsterdam has changed so little in the 18th century, that the names and descriptions of this city, published a century ago, may still be considered as correct and useful companions. The original of Amsterdam is traced to a small fishing place, established on the Amstel, probably during the twelfth century; but the date has not been ascertained. By 1577, the city was the most flourishing of the Dutch provincias, and the name of Amsterdam first occurs in a letter of Count Floris, A.D. 1275, in which he exempts the town of Amsteldamme from certain tolls or taxes. In 1482 it was walled, and from 1578, when the states of Zeeland and Holland united with Brabant, Flanders, &c., in the pacification of Ghent, it began to acquire that commercial superiority which Antwerp had hitherto possessed; and of which its various sufferings tended to deprive it. When the Schelde was closed in 1648, the commerce of Amsterdam increased still more at the expense of Antwerp. The area on which the town stands has of course been extended at different periods, but, as far as we can learn, not since 1658.

The chief articles of import are West and East India produce, tobacco, hides, rice, linseed, and grain: the value of imports of the chief articles into Amsterdam by sea was,—in 1829, 2,107,852s.; 1830, 1,664,891s.; 1831, 1,904,261s. The chief exports to Great Britain are cheongs, oil-cake, oak-um, and piggin.

In 1827, 1887 ships entered the port of Amsterdam.

The number of vessels that cleared at Amsterdam was,—in 1829, 1975: in 1830, 1996: in 1831, 1624. Those to Great Britain were respectively in the three years, 82,114, and 90,332 females.

The manufactures of Amsterdam are considerable: the principal are the bleaching of wax and linen cloth, the manufacturing of tobacco, leather, silk, sugar, calico-printing, cotton-spinning, diamond cutting, cannon foundry, and ship-building.

Population of Amsterdam in 1814...186,000
1820...195,000
1829...201,000
January 1st, 1830...202,364

Of this number, 202,364, there were 90,332 males, and 112,032 females.

AMSTERDAM, a small island in the Indian Ocean, discovered in 1629, by Van Vlaming, a Dutch navigator, and situated in 34° 42' S. lat., and 76° 51' E. long.

This island is about four miles and a quarter long from north to south, and two and a quarter from east to west; but so much of its area is occupied by a basin or harbor, that its surface does not contain more than between seven and eight square miles of land. The basin, here mentioned, was originally a large volcano, into the eastern side of which the sea has forced a passage by the action of waves, which roll with an uninterrupted current from the east.

The width of the breach thus made is 1000 feet, but the part of the opening through which the tide flows is only a narrow stream. The basin of the crater was that of an ellipse, its largest diameter being 3000 feet, and its smallest 2550 feet; it had thus a circumference of nearly a mile and three-quarters, and as its sides rise to the height of 700 feet, at an angle of 65° with the horizon, the brim of the basin has a circuit of rather more than two miles; it must therefore have been one of the largest kind of craters. The depth of water in the centre of the basin is 174 feet, which, added to the height of the sides above the water, gives 774 feet for its entire depth.

The basin is filled with every other liquid, inconsiderable, and exhibits everywhere successive streams of lava. To the north of the entrance of the harbour, and a short distance from it, is an insulated rock, of a pyramidal form, which rises out of the sea to the height of 300 feet. The island is composed of forty or fifty horizontal layers of lava, piled regularly one upon the other. The face of these layers is eroded and divided by perpendicular fissures, many of which are filled with veins of obsidian or volcanic glass, and some with blocks of Pampus, which are sometimes visible on the surface of the sea. In other parts of the fissures are some curios specimens of zeolite. Signs of fusion are evident in every part of the surface of this rock, which seen from a short distance has the appearance of scoria from an iron furnace.

The sloping sides of the crater contain many thermal springs, some of which run freely, while others ooz out in the form of mud. The temperature of these springs is very various, some being 160° of Fahrenheit, at others boiling heat; the temperature of the surrounding atmosphere when these temperatures were taken being 26°. Swamps and stagnant pools of water, varying in their heat from 60° to 130°, are found on every part of the island. Most of the springs are brackish; one of them, the temperature of which is 112°, is strongly chalybeate.

The soil is altogether volcanic; it is spongy and porous, and trembles under the feet. If the ear be applied to the surface, a sound like that of bubbling water may be heard. The south-west of the coast abound in fissures, some of which are wide enough to admit a man. Among these are some red-coloured perch, from six to twelve inches in length; another species of perch from three to four feet long: rock-cod and bream. The quantity of cray-fish seen crawling on the bar, at the time of low water, is almost incredible; and they are so plentiful in the open sea, that if a basket baited with flesh be lowered to some depth for a few minutes, it will be found half filled with cray-fish when drawn up.

No frutaceous plant is found on the island. The list of its vegetables is confined to mosses, and other genera of the cryptogamous class, with a few kinds of grasses. Not a single quadruped of any kind inhabits the island, which is likewise free from all insects, with the exception of the common U. Land birds are absent here, but the number of aquatic birds which resort hither to lay their eggs is astonishing. Among these are the white and the brown albatross; crested penguin; black, grey, blue, and stormy petrel; puffin; silver bird, or molly, and a small black duck, not larger than a thrush.

The shore of Amsterdam island is resorted to by great numbers of seals, for which reason this speck in the ocean, nearly 2000 miles distant from any land, except a little island on the coast of Peru, is the resort of those, who carry the skins which they there procure, to China.

A paper in the twentieth volume of the Philosophical Transactions, which gives an account of the discovery of this island by Van Vlaming, states, that the sea was then so crowded with seals and sea birds, that it was necessary to kill them in order to effect a passage for the ship to the shore. These animals, although still abundant, are certainly
not now in sufficient numbers to obstruct the passage. Another marvellous statement in the same paper was to the effect, that fish might be caught in the sea with one hook and cooked with the other, in the natural boiling springs, and this assertion has certainly been corroborated by Mr. Barrow, who, in 1793, dropped some perch living, off the books into a boiling spring, and found them cooked to perfection next morning.

Amsterdam island is about midway between Australia and Madagascar.—(Philosophical Transactions, vol. xx.; Barrow's Voyage to Cochín China.)

AMSTERDAM, NEW. [See Berriacs.]

AMULET, in barbarous Latin, Amuletum, or Amuletum. Some suppose the word to be of Arabic origin. An amulet hung round the neck, or carried in any other way about the person, is absurdly believed to have the effect of warding off malarial infections and other dangers, and even of curing diseases by which the body has been already attacked. The belief in the efficacy of amulets has subsisted at some time among almost every people, and the thing has been denoted by a great variety of names, which it is unnecessary here to enumerate. The phylacteries, or bits of parchment with passages from the Bible written upon them, which the Jews were wont to carry about with them, were amulets; of just the same character are those inclosed in the amulets of the Far East. The Shugas and priests sell to the negroes of Africa, and to which the latter give the name of Feithes. This superstition, which existed also among the Greeks and Romans, appears to have in early times prevailed extensively among the converts to Christianity, and began to be directed against it by St. Chrysostom, and others of the fathers. But even down to our own day, it has continued to be an article of the popular creed, that certain medical prepa rations, and other things, merely carried about the person, have the power of driving off all malarial and of healing other diseases. Even the celebrated Robert Boyle adopts this notion, assuring us that he has once experienced the efficacy of such an amulet in his own case. 'Having been one summer,' he says, 'frequently subject to a blood at the nose, and recreed it by a green stone, from the roots of white bronyco, and is sometimes hung round the necks of infants with the view of assisting their teething, is an instance of the still surviving confidence in the medical virtue of amulets. Such also is the belief generally entertain ed of the protective powers of certain plants and herbs, which tend to preserve them from being lost—and many other examples might be easily quoted.

AMUR, one of the largest rivers of Asia. If we except the two largest rivers of Siberia, (Oby and Lena,) and those of China, (Huang-ho and Yang-tze-kiang,) only the Yenesei is superior to it in the length of its course. The sources of the Amur are situated near 110°, and its mouth about 145° E. long. The mouth is opposite the northern extremity of the island of Tarauki, formerly called Saghalien, in 53° N. lat.

This river carries off nearly all the waters of the slopes and the mountains in which the great Asiatic desert, Gobi or Shamo, terminates towards the east; and it would be almost impossible to become ac quainted with the country which it traverses. But as only a comparatively very small tract of country along its sources belongs to the Russian empire, and all the remainder of its course is subject to the Chinese, who do not admit European visitors into their territories, our knowledge of this part of the globe is very deficient.

The true source of the Amur is the river Onon, which rises near the 110th meridian, in 50° N. lat., in that range of mountains, the Ussur, which waters a country at present nearly uninhabited, is famous in Mongol history; the great hero, Tung-su-khan, was born, and distinguished himself in his youth, on its banks. The Onon first runs from west to east for about 160 miles, and afterwards to the north-east for about 320 miles, till it joins the Ingoda. The latter river rises on the eastern declivity of the Tshokondo, the highest summit of the range, which separates the tributaries of the Amur from those of the lake of Baikal, or of the Yablonoi Kretab; and runs nearly parallel to the Onon till it joins it, after a course of about 160 miles. After this junction the river is called Shilia by the Russians, and Saghalien-Ula by the Manches and Chinese, and is its north-eastern course for about 260 miles, when it meets the Argun or Erongu, a large river, which in its upper course is called Kleron, and has its sources also in the Kentei- range, near the southern extremity of the mountain, but farther to the south, in 47° N. lat. The Kherlon runs, according to the Chinese geography, in the first part of its course, to the north for about seventy miles, then for about thirty-five miles to the south-east, and afterwards to the north-east for 350 miles. It then changes the direction of its course to the east, making its way through two ranges of high mountains, and after having run in this direction for about a hundred miles, it falls into the large lake of Kulun. Delai Nor, whose circumference is considered by the Chinese to be about 600 li, or nearly 210 miles. From this lake the river issues under the name of Argun, forms the boundary between the Chinese and Russian empire, and, after a north-eastern and northern course of about Shilia, is called the Yalo.

After this junction the river is called Amur by the Russians, who adopted this name from the Chilieaki, a tribe of the Tunguses, living near its mouth, in whose language Amur or Yamur signifies the great river, or the great water. The Yalo, if we may so call it, preserves the name of Saghalien-Ula (river of Black Water).

The Amur does not long continue its north-eastern course. An extensive mountain-range, the King-gan-Yalo, stretching from south to north, obliges the river to take the same direction. But it forces its way through the mountain chains, forming for perhaps a hundred miles a succession of rapids till it enters the plain situated to the east of the mountain range. The rapids formed in this extensive tract do not seem to render the river un navigable, though at present it is not used.

During its passage through the mountains, the Amur changes the direction of its course from north to east, de chines afterwards to the south-east and south, and continues in this direction till, from the 54th parallel, it has descended to the 48th. It then resumes its eastern course, and at its most southern point, (47½° lat.) its waters are increased by those of the Sungari or Songari Ula, which by the Chinese is considered as the principal river. The Songari Ula rises in a lake, in a range of mountains, which, like the Ussur and the Amur, enter the Sea of Okhotsk, and discharges itself into the mouth of the river, which joins the Naun or Nonni Ula, a large river which descends along the eastern side of the King-gan Yalo mountains, from the 52d parallel to the 46th in an opposite direction from north-west to south-east. After this junction the Songari-Ula runs E.N.E. till it joins the Amur.

At a considerable distance from the junction with the Songari Ula, the Amur again changes its course, running thenceforth to the N.N.E. up to its embouchure, and traversing the country between the meridians of 125° and 129°, and between the parallels of 47 and 53. In this part of its course it receives another considerable river, the Uauri-Ula, which runs parallel to the Pacific Ocean, from which it is divided by a high mountain-range; but this tributary of the Amur is entirely lost in the sea.

The whole course of the Amur, from the sources of the Onon to its mouth, amounts, perhaps, to nearly 2000 miles, owing to the great and frequent changes of its direction; but straight line, mouth and mouth are only about 1330 miles distant from one another.

As far as this river is known it abounds in fish, but though they are the same species as those of the rivers in Europe, they are, as Pallis observes, distinguished by some peculiarities. The most common is called the Amu leptocephalus, Pall. Cyprinus labro, Pall.) barbels, and a smaller kind of shad-fish (Silurus asotus). The beluga, a larger kind of sturgeon, is frequently caught in the Shikas, but the common sturgeon is rare, as well as a kind of trout
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*(Salmo oazyrhynchus).* Craw-fish, which are not found in the north of Asia, are very frequent in all the tributaries of the Onon and Shilka, but they are smaller and smoother than those in Europe. The common pike is yellow like gold and spotted like the fish in India: Pallias, at the first view, was inclined to consider them as a distinct species. Pearl-oysters are found in the Onon and some of its tributaries, and the common barnacle in some lakes attains an extraordinary size and thickness. Pallias got some of which were upwards of a foot long, and from three to four-tenths of an inch thick.

The country watered by this river and its branches is divided into the King-gan Yalo mountains into two parts, quite different in their character; this mountain range is to be considered as the eastern boundary of the great desert of Gobi or Shamo, and the country to the west of it, about the Onon and Argun, preserves many of the characteristics of the desert. It is considerably elevated above the level of the sea, but as yet the elevation of no part of it has been exactly determined. To this elevation it must chiefly be attributed, that the Shilka and the Argun, both of which are slow rivers, are deep and rapid, and are much less subject to the caprices of weather and the floods of the rivers which empty into them from the south.

The mountains which separate the valleys along the Amur, Songari-Ula, and Naun-Ula, rise to great height, the valleys seem not to be greatly elevated above the level of the sea. This is indicated by a much milder climate, by the frequency of large forests of oak, lime-trees, and larch, as also by the produce of a kind of cherry-tree. The ground along the river, and even to a certain height on the slopes of the mountains, is cultivated, and produces barley, rye, wheat, buck-wheat, buck-wheat, and hemp; and where the fields extend into meadows. Since the accession of the present dynasty to the throne of China, many persons are banished to these valleys for their crimes or misdemeanors; and this policy, it is said, contributes effectively to improve the state of agriculture. The valley of the Usuri, however, seems to be more elevated, and is therefore chiefly inhabited by a branch of the Mandshoo, who still follow a pastoral life. The mountains which divide this valley from that of the Songari-Ula produce a plant, which is regarded as a great treasure, the ginseng, which in China is considered a panacea; this is the only place where it is found on the old continent. [See Ginseng.]

Not far from the banks of the Shilka, and on those of a stream called the Nertshah, the Russians have built the town of Nertshahnik, which, according to Captain Cochrane, does not contain more than 1000 inhabitants. The principal town in the Chinese territories is Kisin or Ginur-Ula on the Songari-Ula, the seat of a provincial government. In the valley of the Na-un-Ula is the town of Naun-Kohtse, and in that of the Usuri, Ninguta, the native place and patrimony of the Mandshoo dynasty at present reigning in China.

The Russian part of Da-uria has been abandoned by all the native nations, except a small number of Tunguses who still wander about with their herds. In the Chinese territories some aborigines are still found. [See Mandshoo.] (Transits of Pallias and Timkowski; Ritter's *Erdkunde* for results.)

**AMURATH.** [See Murah.]

**AMYGDALE.** A natural order of plants belonging to the division of polypetalous dicotyledons, among which it is known by its bearing the kind of fruit called a drupe, by the stamens being numerous and arising from the orifice of a tubular calyx, and by the leaves yielding the fluid called prussic acid. According to the last circumstance, the seeds are all more or less poisonous, especially in those parts where the prussic acid is concentrated, as the leaves of the common laurel, the skin of the kernel of the almond, &c. On the other hand, those parts in which the prussic acid exists either in quantity, or not at all, as the succulent fruit, and sometimes the kernel, are harmless, and are often valuable articles of food. It is on this account, that while the general character of the foliage is either unwholesome or poisonous, the fruit of many of them is much cultivated. The peach, the nectarine, the plum, the cherry, the apricot, prune, damson, and bullace are produced by different species of this order.

Besides the substance already mentioned, the bark of amygdaleum yields a gum which is similar to its properties to gum arabic; and an astringent substance which gives some of the species so much efficacy in fevers, that it has been compared for utility to the Peruvian bark; and even in some cases, as the coccopiglia bark of Calabria, the produce of prunus cococumia, has been preferred.

**AMYGDALOID.** The name of a variety of the trap rocks, when in a uniform base there are imbedded round or almost round-shaped bodies, consisting of agate, carnelian spar, or zeolites, like almonds in a cake; the term is derived from the Greek *amygdalos*, resembling an almond.

**AMYGDALUS,** the genus from which the order derives its name, comprehends the almond, and the peach and nectarine, besides a few bushes, the chief interest of which arises from their gay appearance.

**A. communis.** The common almond, is a native of Barbary, whence it had not been transferred into Italy in the time of Celsus; it has, however, been so long cultivated all over the south of Europe and the temperate parts of Asia as to have become, as it were, naturalized in the whole of the Old World. From Madrid to Canton. In this country, it is only grown for the sake of its beautiful varnished flowers; but in the south European countries it has a long and hot summer, it is the fruit for which it is esteemed. This, which is produced in considerable quantities, is partly exported into northern countries, and partly pressed for oil, or consumed for various domestic purposes. Although botanists distinguish only one species of useful almond, yet there are many varieties, of which the principal are the bitter and the sweet; of each of which the French and Italians have several sub-varieties distinguished by the hardness or softness of their shell, and the size or weight of the kernel. These have all been introduced into England, but none of them are to be found in their fruit in the neighbourhood of London, except in unusually fine hot summers, preceded by mild and uninterrupted springs.

**A. Persica,** the peach, once called the Persian apple, because it was introduced from that country into Europe, has for ages, been an object of careful cultivation for the sake of its delicious fruit, and has almost naturalized itself even in the New World. In our gardens many varieties are known, which are classed under the two heads of nectarines and peaches according as their fruit is smooth or downy: of the varieties there are few that are not worthy of cultivation, but the best are, perhaps, the red magdalen, noblesse, and royal George peaches, and the Smith's Newington, or tawny nectarine. For a late crop of peaches, the Alphonse de Venus may be recommended; but not the Catherine, nor indeed any of the thick-skinned October peaches, which, however excellent in the south of Europe, seldom ripen, and never acquire their

1. An expanded flower. 2. A name with the corolla removed. 3. Athers. 4. Drupe. 5. Carpel. 6. Ramus.

Key points in the text include:
- The characteristics of the river and its branches.
- The elevations and climates of the valleys.
- The cultivation of crops in the region.
- The description of fruits and their uses.
- The classification and characteristics of various almond species.
- The cultivation and uses of peaches and nectarines.
AMYOT, Jacques, great almoner of France, bishop of Auxerre, commander of the order of the Holy Ghost, rose to these high dignities and so much influence from the humblest rank in life. He was a native of Melun (1514), chief town of the department of Seine et Marne, about thirty miles from Paris. His father was a butcher or a currier, which has not been ascertained. It is more certain that, having been made a member of the chapter of the cathedral of Auxerre when he came to Paris to continue his studies, he was obliged to act as servant to some of his fellow students, in order to procure the means of subsistence, the only weekly allowance which he received from his friends being a loaf of bread. After studying under the learned preachers of the college of France, which had then been recently founded, and after taking his degree of master of arts, at the early age of nineteen, he went to Bourges to study law; there he distinguished himself, and, having been inserted into the chapter of the cathedral of Bourges, he died, on leaving his sisters, his nephew, Jacques Colin, to intrust him with the care of his nephews. Subsequently, through the patronage of Marguerite de Valois, sister of Francis I., Amyot obtained a Greek and Latin chair at the University of Bourges. Whilst he was there he published his translation of Plutarch's Lives, of which he dedicated the first books to the king, Henri II. The monarch, as a mark of his approbation, gave him the abbey of Belle-sano, and desired him, at the same time, to continue a work so replete with merit. This was the first intimation in any way of the extraordinary talents of another kind: for, under the pretense of going to Italy to consult some manuscripts, he was entrusted with a letter from Henry the Second to the council of Trent, assembled. Although he was not invested with any public character or honor, but was employed, notwithstanding much loathsomeness and adroitness in his mission; so great, in fact, was the satisfaction which the Cardinal of Tournon felt on this occasion, that he recommended him to Henry II. as a fit person to be the tutor of his three younger sons. Charles IX., on his assumption of the crown, and on its completion, sought the advice of this great almoner and keeper of the University of Paris; soon after he gave him the vacant see of Auxerre. It is said that, at the death of Charles IX., and on the day his funeral took place at St. Denis, the Parliament of Paris sent to Amyot, that he might say grace for them, acting as king of France. We should here observe that Henri III., the brother and successor of Charles, was yet in Poland; the parliament might, therefore, suppose themselves to be reigning in his name. Amyot, moreover, was selected to put the crown on the head of the Due d'Anjou, second brother of the late king Charles, the same who had been on the eve of marrying Elizabeth of England, and to refuse it to the king of Poland. Amyot disobeyed the command, and, after putting on the crown, he is said to have continued him in his dignities, and moreover made him commander of the order of the Holy Ghost. Amyot had much to suffer from the league to which he was thought to be an enemy; he was even accused of having been privy to, and having participated in, the assassination of the Due de Guise, at Blois (December, 1588). So involute were the leagues against him, that they attacked and plundered him some time after he was returning to Auxerre; nor, indeed, could he appease this latter spirit until he had obtained a formal assurance from the Pope nuncio, of the crime of participation of which he was suspected. He was, however, afterwards allowed to finish his days in quietness, in his diocese, where he died in 1593.

Amyot was an admirable scholar; no one did more service to French letters. His translation of Plutarch's Lives, which was made from the Latin, is spirited and elegant; and it is remarkable that the best translation of Plutarch in English, North's, is made from Amyot's French. His collections of anecdotes in several languages and from translations of other Greek works, of which the principal are, The Ethnographic History of Heliodorus, seven books of Diodorus, the Pastoral Loves of Daphnis and Chloe, &c. He has, besides, given an Account of his Journey to Trent, in a letter addressed to M. de Mevilliers. He composed a treaty on royal precedence for the use of his pupil, Henri III., which was printed, for the first time only, in 1803, under the reign of Napoleon. It was at the suggestion of Amyot that Henri III. founded, in 1578, a Greek and Latin library.

Amyot has been accused of avarice; this charge is, however, partly refuted by the fact of his having spent large sums for the repairs and embellishments of the churches of his diocese. He left the sum of 700,000 francs at his death, although he frequently complained of having been ruined by the league.

AMYRI/DLX. A natural order of plants consisting of tropical trees, the leaves, bark, and fruit of which abound in fragrant resin. It is known among polyetalous dicotyledonous orders by its hypogynous stamens, which are twice as numerous as the petals, by the large disk in which the ovary is inserted, by its seceded, fleshy fruit, covered all over with resinous glands.

The odoriferous substances called gum clemi, bdellium, and resin of Couina are all produced by different species of amyridea.

ANA, a Latin termination of the neuter plural form. It appears in our language, divested of the sign of gender, number, and case, in such words as subterranean, metropolitan, Christian, Anglican, Ciceronian, Johnsonian. The Latin one is the form appropriated to the neuter plural; and therefore, Commentarii on an Enunciature, we signify matters or things of any sort, about or appertaining to Cicero.

In modern times this termination has been used to denote collections, either of specimens of plants in conversation, or of extracts from their note books, letters, or even published works, or, generally, of particulars respecting them.

Such collections have been made in all ages, and in every country in which literature has been cultivated. For an enumeration of ancient works, still existing or known to have once existed, of a similar character to the modern ana, the reader may consult Christopher Wolf's preface to the Caesonia, and the Introductio in Notitiam Rerum Literarum of G. C. Strivius, which is preserved in the library of the University of Leyden. Subsequently, L. Sempliciani, having stated to have made of the remarks that fell from their masters, the Apotheoseonia, or Memorabilia, of Sorcrates recorded by Xenophon, the sayings of Epicetus, said to have been collected by Arrian in the four last books (now lost) of his Ciceroniana, and of other antiquii translators of the works of the Great Masters. The Catalogus, or Catalogue of Specimens, or Descriptions of Specimens, or Descriptions of Specimens, or Descriptions of Specimens, appears to be the first article of the subject. It was first printed in 1764, chap. viii., sections 11, 12, 13, and 14. These writers mention as coming under this description the Proverbs of Solomon, those collections of the sayings of the wise which are to be found in many oriental languages, those which the disciples of Pythagoras compiled of the maxims of their master; and all of them have been, in a manner, appertaining to Cicero, or to other celebrated masters, and to their successors. But the modern use of this termination is more general than any of these, and comprehends a larger number of objects. It is applied to the works of such authors as Apianus, the Deipnosophistae, the Theophilus, the Diogenes Laertius, the Faustus, the Joseph Scaligerus, Gloffius, the first author of the modern use of the word occurs in a letter of Francesco Barbano to Poggio Bracciolini, in which, alluding to some literary anecdotes which Poggio and his friend Bartolomeo Montepulciano had collected in Germany, and were bringing home with them, he says, as a certain sort of apples and pears are called Appianae and Malliunae from the names of Appius and Mallius introduced by persons of the names of Appius and Mallius, so these importations of theirs will be afterwards called Poggiana and Montepulcianae. This custom has been continued in the second volume, where it was first printed entire. But it does not appear to have been till after the middle of the seventeenth century that the exact modern application of such epithets came into fashion. In 1649 we find Guy Patin, in one of his collections of rare and curious manuscripts, containing possession certain manuscript Borborina, Grotiana, and Naudoniana, meaning collections of anecdotes respecting Nicholas Bourbon (the younger), Grotois, and Gabriel Naudé. This gives the first time we hear of the termination of the word ana. This was the collection of the colloquial remarks of Joseph Scaliger, now distinguished as the Scaligeriana Secunda. Two brothers, Jean and Nicholas de Vassan, the sons of a M. Vassan, Sieur de Remi-Mesnil, and whose mother was a sister of the eminent scholars Peter and Francis
Pithou, having gone to study at Leyden, carried with them letters of recommendation from Cassaubon to Scaliger, who was then one of the professors in that university. In consequence they were much at his house, and heard a great deal of this conversation, both in Latin and in French. Such of his observations upon all sorts of subjects as they considered to be most valuable or remarkable they wrote down, till the collection at last formed a thick octavo volume, which they return to England, where they gave their manuscript to the learned brothers Claude, Pierre, and Jacques Du Puy; and the latter lent it to M. Sarrau, who took a copy of it, which came into the possession of his son, Isaac Sarrau. From him it passed into the hands of Hadrian Ducange, a most learned man, and a sponsor of letters, who gave the book a new form by arranging the remarks according to the alphabetical order of their subjects. From Dailé Isaac Vossius, in the course of a visit which he made to Paris, procured the manuscript, but, as it appears, without any notion on the part of the lender that he would make any other than a private use of it. Having, however, got it home with him to Holland, he transcribed it, and some time after sent his copy to the press. The book was published in 1668, with the title of Scaligeriana, sive Excerpta ex orae Josephi Scaligeri: per F.F. PP., (con tractione Fratris Putanus.) This impression, however, so abounded in inaccuracies, that Dailé, notwithstanding his regret that the publication had taken place at all, felt himself bound to give to the world a new and more correct edition, which appeared accordingly the following year, with the title of Scaligeriana, editio altera, ad verum exemplar restituta; et innumeris etque fondamenti menda, quibus prior illa passae scutat, diligentissime purgata. This edition, again, which is a 12mo. of 368 pages, but in so much smaller a type as to contain a good deal more matter than the other, professors to be printed at Coligny, by Gerbrandus Scovelus. But it is said to have been really printed at Rouen. It is very incorrectly printed, and has a long list of errata prefixed; but, besides being considerably more full, it is purged from many gross blunders, which make the edition published at Rouen frequently unintelligible. In his prefatory address (to which he has not put his name,) Dailé complains in indignant terms of the publication at the Hague, which he says had taken place not only without the consent of those to whom the manuscript belonged, but in violation of their most stringent di- mensions. He also corrects the title, which, in the original, he says, is Scaligerana, not Scaligeriana. The word excerpta he thinks must be a printer's blunder for excepta. He likewise gives the true history of the manuscript, and refutes the assertion of the Hague edition, that its contents had been taken down from the lips of Scaliger by the Du Puy. It would appear, however, that Vossius, or his publisher, paid no attention to any of these corrections; for a new edition of all remaining sections was published by Vlaq at the Hague in 1668. Some of the copies of this edition bear the impress of Leyden; but they are said to differ in nothing else from the others. It happened, however, that the Vassans were not the only persons by whom Scaliger's conversations had been noted down. Before they knew him, and, indeed, while he lived in Tournay, and before he went to Leyden, a physician of the name of François Vertunien, who attended the family of the MM. Chaligners de la Rochepotai, in whose house Scaliger had been in the habit of gathering his conversations, namely from 1575 to 1592, of keeping a record of the remarks that dropped from the lips of the great scholar. Vertunien's papers remained for a long time after his death almost unknown; but in the year 1668, one of them, which had been bought in that year from a man into whose hands they had fallen, was printed by M. de Siguennes, an advocate of the parliament of Poitiers. By him they were committed for publication to the care of Tanneguy le Fèvre, (better known by his Latinized name of Tannuillus Faber;) and they accordingly appeared along with the former in 1669, bearing the following title, Prima Scaligerana, nunc quam ante hic edita, cum Praefatio T. Faleri; quibus adjuncta est altera Scaligeriana, quam autem neminem, dum notas Scaligeri observavit numerus. This volume is a 12mo., and the new matter fills 150 pages in a large type; that which had been printed before filling 257 in a much smaller type. Throughout both, the notes are in- vironed with the Greek and Latin characters. This edition was published by Peter Smithesius; but is understood to have been actually printed at Saumur. In the copy of this edition in the British Museum, which appears to be perfect, there is no preface, although one is announced in the title-page; the book was published, first in 1669, and a second time in 1670, by Utrecht by Peter Elzevir, in 1670, there is a strange address, made up principally of bursts of Greek and Latin verse, entitled, Ad Aetham Borealem Praefatio, and having Le Fèvre's name subscribed, in which the writer says, that he has determined not to publish the promised preface, having, after he had begun to write it, been induced to desist by certain considerations which he does not choose to specify. It would, he intimates, have contained some things not generally known, as referring to Scaliger as a Præm; are all, or nearly all, in Latin; the Secundus, partly in Latin and partly in French. They were afterwards mixed together and arranged under one alphabet; being first published in this form, we believe, at Cologne in 1659, in a large folio. This edition is entitled, Historia Scaligeriana et aliorum notabiliorum, M. J. Scaligeri, et illustrissimum doctissimum, nobilissimum, J. Scaliger, avec des Notes de M. le Fèvre et de M. de Co- limé. Such is an outline of the leading particulars, which have not always been correctly stated, of this curious piece of literature. It was a thorough analysis of Scaliger, by a learned commentator. Leeschel, published a short dissertation in 4to., at Witten-berg, in 1695, entitled Historia Scaligerana; and the object is examined at greater length by Des Maizeaux, in his edition of Petrus Comestorius, ac. in two vols. Amster- dam, 1740. As in all other collections of this kind, both the Scaligerana contain many things which it may be very much doubted if the person to whom they are attributed ever uttered. Any deficiency either of compen- tence, or of veracity, or of accuracy in the reporter, must have left its proportionate produce of error or misrepresen- tation. But even if we could be certain that the report had been given with the most perfect accuracy, it would be un- fair to regard statements and opinions, thus delivered in this程度, as affording a true measure either of the judgment, or the information of the speaker. They may convey to us an idea of the general style and spirit of his manner of talking, and in that way give us some insight into his character that had otherwise been unknown. As elucidations of that kind are treated of, they are commonly worth very little. The publication of the Scaligerana, accordingly, did not add to the reputation of Joseph Scaliger. The multifarious learning for which he had been distinguished was now shown to be only too frequently at fault in these extemporaneous displays; and having all the arrogance, with but little of the genius of his father, he was thought in most of his sallies, to have given more evidence of a bad temper than of a brilliant wit. The frequency and licentiousness of some of his jests also equalled their dulness.

The next of the Ana which appeared was the Perronia, being notes (in French) of the conversations of Cardinal Perroni, published 1667, in 4to., 280 pages, with the following title: Perroniana, sive Excerpta ex orae Cardinalis Perroni: Per PP. PP.; and, like the first published Scaligerana, which it closely resembled in all respects, bore the impress of P. Comestorius, at Geneva. It is believed, however, it had been published in France; and there is no doubt that this book also was sent to the press by Isaac Vossius, who had obtained it from Dailé in the same manner as he had the Scaligerana. These notes had been taken down by Christophe du Puy, or Perroni, as he is commonly called. It contained the following lines, but the copy purchased by Claude Sarrau in 1642; and from this copy Dailé had made another transcript in 1663, arranging the remarks in alphabetical order. Menage, we may add, in a letter, 1661, says that the edition given by Vossius was actually published at Rouen. However this may be, in the same year, and with a similar title-page, the same gave to the world another of these collections, the
Thaon, or remarks of the President de Thou. This he had also obtained from Duillé, to whom, like the others, they had come through Sarrant, the notes having been originally taken by one of the Du Puys, but which of the brothers is uncertain. Duillé was as much dissatisfied with the editions published by Vossius of the Persiana and Thaon as he had been with that of the Scaligeriana; and he caused both to be reprinted the same year at Rouen, as is believed, although the title-page says at Cologne. Both of these Ana contain some curious anecdotes; in the Persiana particularly; but mixed with what is valuable, are many other parts, pleasant to be recorded; and upon the whole, neither collection can be said to come up to the expectation naturally raised by its title.

Several publications, however, these works had extraordinary success; and the avidity with which they were read, produced a long succession of similar productions. It was in France, or at least in the French language, that most of the Ana appeared; and their popularity may be said to have procured for such copious annotation a history of French literature, therefore, an account of these collections would form an important chapter. In this place we must confine our further notice of them to little more than an enumeration of those that are best known.

The name of Châtelain, either of this or other class of publications, is the Menagiana, a record of the conversations of Menage, who was a man of distinguished wit and talent, as well as a great scholar. He died in 1692, and the following year the Menagiana appeared in a 12mo, volume, both at Paris and Amsterdam, which was an edition supplied, and the expense of the publication defrayed, were his friends Galland, Boivin, Dubos, Pinson, and De Valois. The same year was published a satire upon the work and the individual whom it commemorated, under the title of Anti-Managiana—the production of Rohault de Fleury, who had been with that of Jean Bernier, whose pen, however, was not a very sharp one. A second volume of the Menagiana appeared in 1694; the materials of which were principally compiled by a lady of leisure, so that the new addition of the whole was published at Amsterdam. The original edition, however, contains several things which were suppressed in those that followed. The book was re-published at Paris, in 1715, by Bernard de la Monnoye, accompanied with a number of essays written by himself. The edition was increased to four volumes; and in the following year a new edition of the same size appeared at Amsterdam, in which De la Monnoye’s additions were separated from the original, and placed in the two concluding volumes by themselves. This is the most valuable of this class of works, as Bayle passes a high eulogium in his dictionary upon the Menagiana, describing it as a nobler monument erected to the glory of Menage, than all the works published by himself, learned and able as they generally were. Upon this he remarks, Voltairina, a volume of Ana, the one that deserves to be set down in the list of printed lies, and, above all, of lies in which there is no wit. But Segrais was a man of true talent, as Voltairine himself, in his Age of Louis XIV., has testified.

There are also the Rubiconiana, the Sontoliana, the Conringiana, the Launoliana, the Varilliana, the Borboniana, the Cheveana, the Sorberiana, the Smegniana, the Longueuriana, the Boleaina, the Carpentariaea, the Ducetiana, &c. These may be a few German productions, such as the Tuubmanniana, the Wignadiana, the Schurzleischiana, the Gundlingiana. Of our English Ana, by far the most celebrated is the Walpoliana, being a collection of the conversational remarks of Horace Walpole, many of which, in the first volume of his papers, which was first given soon after his death in portions in the Monthly Magazine, and then published, with large additions, in a separate form. Both in curious information and liveliness of manner, the best English publications of the same class. Our other English Ana, such as the Addisioniana, the Johnsoniana, the Swiftniana, the Moiriana, are, most of them, merely collections of anecdotes taken from the common biographies of the persons to whom they refer, or of extracts from their works.

There are various publications, also, both in French and English, which might seem, from their titles, to belong to the class of Ana, but which are really of quite a different description. It may be sufficient merely to name a few of
those, such as the Caribbee, containing Letters and Dissertations, chiefly wrote by several hands in the West Indies, 2 vols., 4to., London, 1741; the Johntiana, or the Book of Scriptures, (by Samuel Patterson, cl.), 3 vols., 8vo., London, 1772; the Anomistia, or Miscellanies of Poetry, Eloquence, and Erudition, 12mo., Paris, 1799; the Goscoriana, a collection of bons mots of the Gesconens, by M. de Montfort, Amsterdam, 1708; the Pantalo-Thébäne, a satire, and several others, M. de Bourbon, a counsellor of the Parliament of Bourdeaux; the Panurgiana Panurgica, a critique by M. de Premouval, or the book entitled Les Mauves, which was written by François Vincent Toussaint, &c.

On the other hand, there are many works, which, without bearing the characteristic title of such collections, belong in all other respects to the class of the Ana. We have already enumerated several productions of the antients, which are of this description. One of the earliest and most celebrated, as it does little or nothing that is original, and consisting almost entirely of maxims which have no special reference to the person by whom they are said to have been uttered. It has been said that there was in existence another Saldimana, or Collection of the Conversations of the Antients, being a compilation from an Euphrates Ana, original entirely different from the Table-Talk. This is mentioned in a curious book entitled Mélanges d'Histoire et de Littérature recueillis par De Vigneul-Marville, first published at Rouen in 1693, which has itself been commonly reckoned as another Saldimana, and among the most valuable of that class of publications. It is, indeed, often referred to under the title of the Marvisiliana. Its author was Noel Bonaventure d'Argonne; but in the latest editions it has been extended to three volumes, the last of which is an addition to the original work, by the Abbé Badois. In the same head we may also mention the Mélanges Historiques de Paul Colomiès, first published in 1675, and since repeatedly printed under the title of Colomoniana. And we might add to the list, probably, several scores of works in both our own and the foreign languages, which are in the same class except in their titles. Boswell's Life of Johnson, for instance, is undoubtedly the most remarkable work of this description in existence.

Mr. Southey has published a little work in two volumes, with the title of Annales Ana, being a collection of detached remarks on a variety of subjects; but the same title had been previously adopted in a French publication, of which, however, we know nothing more than that it is called Omnima, ou Extract des Archives de la Société Universelle des Anciens, par G. A. Moucheron, son premier aide-de-camp, 12mo., Paris, 1808. It would appear to be a burlesque production.

One of the volumes of the great French work, the Encyclopédie Méthodique, bears the title of Encyclopédia, and productions of that class, which are not merely and properly of a similar description, had also appeared before this; Elitie des Rons Mots, &c., principalement des Livres en Ana, 2 vols., 12mo., Amst., 1707; and Nouvelle Bibliothèque de Littérature, d'histoire, &c., ou Choix des meilleurs Morceaux tirés des Ana, (by Guillaume Grivel, cl.), 2 vols., 12mo., Lille et Paris, 1765. We have in English Selections from the French Ana, translated, 2 vols., 12mo., Oxford, 1797. No complete collection of the Ana has ever been printed; but there are several partial collections. One of the best of these is the Thébais, and Colomécane, avec Notes par Pierre Des Maizieux, 2 vols., 12mo., Amst., 1740. Another larger collection, but without notes, was printed in 10 vols., 8vo., at Amsterdam in 1799, with the title of Ana; ou Collection de bons Mots, Contes, Péchés détachés, &c., des Hommes célèbres, tirés de différents Recueils. This is a complete reprint, with short prefaces attached to each work, of the Furetiertiana, the Poggiana, the Menagiana, the Marvilleana, the Courtieriana, the Vésalienne, the Hesmana, (to which is added Les Annales de Mercurius, ou l'Origeniana, de la Cruella, de la Ceschniana, and the Boviana.

The most complete list of these publications which has appeared, is that given by Peignot in his Répertoire des Bibliothèques Spéciales, Curieuses, et Instruites, 5 vols., Paris, 1819, to which 109 titles has been enumerated. This writer absurdly conceives the termination in question to be a corruption or contraction of the word anecdot, the title Menagiana, for instance, being, he says, when written properly and at full length, Menangrenodidae. For further information on the subject, see the Colloquia, or Table Talk of Luther, first published in German at Eisleben, in 1565, and afterwards in Latin at Frankfort, in 1571. There is an English translation of this work, by Captain Henry Bell, published in 1652. Another is the Locorum Colloquia, or Conversations de M. l'Abbé Panaguist, published in 1562, by John Manlius. There is also a volume, however, published at Altdorf, in 1771, by G. T. Strobel, with the title of Melanchthoniana. Another very celebrated work of this kind is the Table-Talk of Schleusner, which is stated to have been collected by Richard Milward, and was first published in 1689. But although this work is commonly reckoned among the Ana, it is hardly of the same class with most of those that have been so designated, indeed, as it does little or nothing that is original, and consisting almost entirely of maxims which have no special reference to the person by whom they are said to have been uttered. It has been said that there was in existence another Saldimana, or Collection of the Conversations of the Antients, being a compilation from an Euphrates Ana, original entirely different from the Table-Talk. This is mentioned in a curious book entitled Mélange d'Histoire et de Littérature recueillis par De Vigneul-Marville, first published at Rouen in 1693, which has itself been commonly reckoned as another Saldimana, and among the most valuable of that class of publications. It is, indeed, often referred to under the title of the Marvisiliana. Its author was Noel Bonaventure d'Argonne; but in the latest editions it has been extended to three volumes, the last of which is an addition to the original work, by the Abbé Badois. In the same head we may also mention the Mélange Historiques de Paul Colomiès, first published in 1675, and since repeatedly printed under the title of Colomoniana. And we might add to the list, probably, several scores of works in both our own and the foreign languages, which are in the same class except in their titles. Boswell's Life of Johnson, for instance, is undoubtedly the most remarkable work of this description in existence.

The verses may be found in his collected poems, and also in his edition of the Menagiana. In something of the same spirit, Voltaire has said of these collections, that we are indebted for them to the same authors, and that there was a special part to many bookmakers who live on the falls of the dead.

ANABAPTISTS, a religious sect. The word, composed of two Greek terms, properly signifies those who baptize a second time, or insist upon the necessity of a second baptism; and the early followers of this doctrine are, without any other name, called Anabaptists. It is sometimes applied to designate that large body of Christians in our own and other Protestant countries, one of whose articles of belief is, that baptism ought only to be administered to adults, and who, accordingly, rebaptize those who seek to join them. But the collections of this sect are quite unwarranted, and one against which the community in question have always protested. They do not maintain the necessity of a new or second baptism, nor are those who have been born and brought up in their persuasion ever baptized. Other sects, which have been baptized in infancy, are, indeed, baptized once again when they have grown up; but this is done on the principle that the former ceremony was no baptism at all. Baptists is the designation assumed by those who thus hold their doctrines. Further information in the form of Witsenh, and ana, from the output of the sect, and in the form of Neil and ana, will accordingly be properly noticed under that head.

We are not aware, indeed, that there has ever been a sect which maintained the necessity of two successive baptisms. On the other hand it is certain, that there were various sects in the earlier ages of the church which agreed with the modern Baptists in allowing no validity except to adult baptism. But the epithet Anabaptists appears to have been first employed to describe a body of fanatics, who maintained that no baptism after the commencement of the Reformation; and although it has been since frequently applied to other religious bodies as being alleged to have sprung from these, such a use of it can only be considered as an cunningly designed to attach the name to quite different sects, and in the form of Neil and ana, has been in the habit of assailing each other.

The Anabaptists were, no doubt, the growth of the Reformation though Protestant writers have laboured hard to make it appear that such was not the case. They were the most extreme, ultra-radicals of the Reformed Church, and Stork, who were the first heads and apostles of the sect, had all been disciples of Luther; although no person could have more earnestly condemned their proceedings, than that great reformer. They first began to prosper in the Low Countries, the province of Brabant, in the year 1521. In 1525, their followers, composed almost
exclusively of the lowest rabble, rose in a general rebellion against the established authorities throughout that province, and in particular against John Matthias, the Franciscan inspector, by which it is but fair to remark was partly of a political character, and occasioned by the oppression to which the peasantry were subjected, was soon defeated; and Manner himself, being pursued and captured, the novel notion, however, which he had propounded, spread as usual under persecution; and, some years afterwards, the mischief broke out again with new fury. In 1532, a numerous mob of these fanatics, conducted by John Matthias, a baker, of Hassegau, and John Beermann, a dealer in Lynn, sudden-}

From one of the stoutest sects, the Anabaptists of Münster; but the accounts of a proscribed sect by their enemies, it is to be remembered, are scarcely to be received with implicit credit. The doctrine which gave occasion to their distinctive appellation was one of the least remarkable of all their peculiar articles, in that it taught that baptism was not to be}
The army marched along the coast westwards for about 100 miles (direct distance) to Cotyora.

The narrative of Xenophon contains a statement of the army's marches, with some few omissions, expressed in Persian parasangs, at the rate of thirty stadia to a parasang. The following are the distances given by him in round numbers:

| From Ephesus to Cunaxa | 16,050 |
| From Cunaxa to Cotyora (eight months) | 18,600 |
| **Total** | **34,650** |

Xenophon adds the march of the Greek auxiliaries from Ephesus to Sardes (about 50 miles) to the distance from Sardes to Cunaxa.

The march may be considered as having terminated at Cotyora, as the army sailed from this place to Sinope, now Sinaih: their troubles, however, continued till they reached Byzantium, now Constantiple, and even beyond that point.

If we take the stadia of Xenophon at the rate of ten to a mile, an estimate which is above the truth, we find the whole distance marched to be 3465 English miles, which was accomplished in fifteen months, and a large part of it through an unknown mountainous and hostile country and in an inclement season. The reader will find the expedition of the younger Cyrus disussed in the work of Major Rennel, and the various difficulties that occur in the narrative of Xenophon explained, as far as means of information will allow, with the Major's usual good sense and sagacity. [See Xenophon.]

*Abasis* is also the name given by Arrian, who was in all things an imitator of Xenophon, to his work in seven books, in which he describes the campaigns of Alexander the Great. [See Arrian.]

ANACARDIA/CÉRÉS, or the Cashew tribe, is a natural order of plants, consisting exclusively of woody plants, abounding in an acid resin, which is easily discovered by bruising the leaves, but which is not indicated by its being collected in transparent receptacles in the leaves, as is most commonly the case. They are polypetalous dicotyledons, with perigynous stamens, a simple, one-seeded, superior fruit, and alternate leaves without stipule.

The best-known genera of the order are, in the first place, *Anacardium occidentale*, a small tree found

![Image of Anacardium occidentale]
lived to the age of 85. It is said that he was unable to take any food except raisins, from extreme old age, and that he was at last choked by a grape-stone, but this anecdote bears too much the appearance of a poetical fiction, founded on the imagination, and thus it is that we read of high esteem for Polycrates, tyrant of Samos, and Hip- parchus, son of Pisistratus, tyrant of Athens, two of the most eminent men of their age. The latter, we are told by Plato, (Hipparchus, 228 Steph.) sent a fifty-oared ship to bring the Teian poet to Athens. His old age seems to have been spent at Abdere in Thrace, whither the Teians emigrated, and found a new city, when Teos was attacked by the Persian troops of Cyrus, commanded by Harpagus (B.C. 538). Some persons have pretended that an amorous connexion existed between him and the Spartan princess and poetess, and there are verses extant, said to have been addressed by a manifest anarchy to Sappho, and by Sappho to Anacreon; (Athenaeus, xiii. 398-9, ed. Casaub.) but this involves a manifest anachronism. Of his personal character we know little; but if his own temperaments is considered, we can imagine how he could have succeeded in preserving the elegant simplicity of Anacreon, who seldom indulges in the forced conceits and extravagant prettinesses which so often disfigure the poems of his imitators. Some of the odes attributed to him are very delightful, and have a true grace and dignity; they are not of the character of that remote age in which the writer lived. Some also, if we may judge from the language, are undoubtedly the productions of an age long after that of the poet. Of those who have attempted to present him in an English dress, the most celebrated, and the most successful, are Cowley, who translated twelve odes, and Moore. But the translations of the former should rather be called paraphrases; and the version of the latter is too much loaded with the adjectives, to be, strictly speaking, an English translation. Some of the specimens of the poet (including one or two of Cowley’s translations) will be found in Merivale’s *Anthology*.

Anacreon was first edited by H. Stephens, who got possess¬ion of the first edition of 1603, and published it in 1818. A complete edition, by the Rev. Mr. Musgrave, 1756, contains little more than a translation of the earlier odes; and the later ones are almost entirely omitted, chiefly on the ground of metrical inaccuracy, and of their being written in the Dorian, instead of the Ionian dialect. His daughter, however, the celebrated Madame Dacier, who translated Anacreon into French, does not always think him inferior in the later odes, and in the *Annuaire*, 1766, are also little noted the odes bearing the name of Anacreon, though ancient. Among these belongs to that poet. Pawl and Fischer believe the greater part of them to belong to authors of much later date. Tanaquil Faber stigmatized the 6th, 16th, 23rd, 24th, 25th, 26th, 27th, and 29th, as most apparently being of the 500th year after Christ, and adduce various arguments to show that the linnenuleo me similis, Choc.” (Oliv. i. 23. 1.) This argument, however, does not appear conclusive.

The best edition of Anacreon, we believe, is by Melhorn, Glogau, 1825; the third of Fischer. Lips., 1793; and of the second edition, 1786, are also very much spoken of. There are many pocket editions of this author, and many remarkable only for typographical luxury, which we need not here particularise.

ANADYR is a river in Siberia, little known, and prin-

cipally remarkable for being the only considerable river of the globe, whose sources lie within the Polar circle, between the 68° and 69° N. lat. It rises in a lake in that range of the Aldan mountains, which traverses the north¬eastern extremity of Asia. The name is also applied to a hotelkoy-Nose, at Bering’s Strait. The first third part of its course is directed to the south-west through nearly 3° of lat. till it passes to the south of the Polar circle. It then turns suddenly to the east, and continues in this direction, though declining insensibly to the south; but the lower part of its course lies nearly parallel to the Polar circle, at the distance of about 24° of lat. In its eastern course it passes through 13° of long. It falls into the Bay of Anadyr, a large gulf of the Sea of Kamtchatka, forming an estuary of its mouth. The whole course of this river is upwards of 500 miles.

The country which is traversed by this river is almost entirely covered with rocky, naked, and barren hills, which sometimes rise to the height of mountains, though, as it advances, they do not in beauty exceed the *anguilina volans*. it winter lasts about nine months, and all this time the ground is frozen and covered with snow, even the patches of low ground along the river are not available to the rearing of cattle; and the rein-deer and the dog are the only domestic and wild animals which inhabit the vast region. The rein-deer in a wild state is very numerous, distinguished by its spotted skin, and forms the most important object of chase with the inhabitants. The nearest part of the population inhabit the country about the mouth of the river, which is in a state of a semi-civilised condition, and is supplied with the great number of fish and marine animals, especially of morses (*Tricerus Rosmarus, L.*), affords them abundant food. These people have fixed habitations, but those who live on the produce of their herds of rein-deer, and of the Lapland cattle, etc., have no settled residence.

The country on the north of the river is inhabited by the Tuhukhe, who, according to Captain Cook, are not of a diminutive size, as was formerly believed, but rather tall, well made, and strong. They have defended themselves with valour and courage against all the attacks of their neighbours, and are obliged to pay a tribute like the other nations of Siberia. To the south of the Anadyr, there is another nation, the Korakes, who are neither so tall, nor so well made as the Tuhukhe, nor so industrious. They are of the Russian tribe, and obliged to pay an annual tribute. (Captain Cook’s *Third Voyage, George’s Travels, and the Map in Pallas’ Travels*.)

ANAGA’LLIS, a genus of the natural order primulaceae, of which it is the principal, and one of the most celebrated genera. Some of the species are called *pimpernel*, or poor man’s weather-glass, so called because its flowers generally open at eight in the morning, being closed at five in the evening, and also refuse to open in rainy weather. It is a little trailing plant with brick-red flowers, very abundant in corn fields; it was once thought useful in cases of madness, especially such as arose from the bite of rabid animals, but it is in no esteem at the present day. The flowers, which grow in the drier parts of marshes, along with *sin¬guicula* and *drosera*; it has delicate flesh-coloured flowers, in the centre of which grows a cone of stamens covered all over with glittering transparent hairs; these and its pecu¬liarities render it to be accounted for the queen of the British wild flowers. One or two foreign species, with large blossoms, are cultivated in greenhouses.

ANAGNI, the ancient Anagnia, once the capital of the Hernici, now a town of between 5000 and 6000 inhabitants, situated in the Campagna of Rome, on a green hill above the valley of the Sacco, near the Via Latina, or road leading into the kingdom of Naples by San Germano, in the province of Lazio, a part of the Marche and Abruzzi. It is the residence of many noble families, and also of the Graces of Anagni, having at their head the family of Caetani, from which sprung Pope Boniface VIII., and that of Conti, which has given the Church of Rome four pontiffs, among whom is Innocent III. Anagnia often offered a refuge to the popes during the middle ages. Here Alexander III. ex¬communicated Frederic Barbarossa, and here the turbulent and irascible Boniface VIII. was surprised and made prisoner in 1263, by the Colonna faction, stimulated by his enemy Philip le Bel of France; owing to this affront, the
old man soon after died of grief. It lies 35 miles east by north of Rome.

ANAGRAM signifies a new word formed out of the letters of any given word by the process of writing them over again, as the term literally signifies, or placing them in a new order. Sometimes the anagram is formed out of two or more words, and sometimes not. It is always either a noun or a verb. Some traces of this species of trifling have been detected in the writings of the ancients; but the taste for it does not seem to have spread much among the Greeks or Romans. Although instances of the use of the anagram for various purposes may have been as plentiful and eloquent an affair, the art appears to have first become fashionable in modern literature in the early part, or towards the middle, of the sixteenth century. Many authors, instead of putting their names on the title-pages of their works, have, with an affection of modesty, used the anagrams of their names. At one time, the anagram was much made use of by mathematicians in announcing discoveries, the credit or property of which they wished to secure to themselves without revealing the secret in which they consisted. Hydropneum, Galileo, and Newton, intimated several of their discoveries in this way. (See the Life of Galileo in the Library of Useful Knowledge, chap. viii.)

ANALEPTICS, from a Greek verb which signifies to run up, is the state of the mind, or the regimen, which are generally employed to restore the vigour of the system when it has fallen below the healthy standard, either from previous disease or any other cause. The term analeptic was formerly applied indiscriminately to any medicine that raised the whole animal system of the body, whether it belonged to the class of stimulants or to the class of tonics; but as the progress of chemistry, anatomy, and physiology has enabled us to recognize a difference in the chemical composition of members of these two classes of medicinal agents, as well as in their action upon the human frame, we propose to limit the application of the word to the latter of them, or to tonics, reserving the consideration of the other till we come to the word stimulant. The following brief explanation of their effects will suffice to show that the term may be applied, without impropriety, to a nervous system, while tonics act primarily on the muscles and blood-vessels. Stimulants render the movements more frequent; tonics render them stronger. Stimulants, as we see with wine, exhaust the excitability; tonics, within a certain limit, maintain it. The action of the one is immediate and transitory, that of the other is slow and progressive, but more permanent, as is the case from Cinchona bark, or food. To take an example from their effects on the stomach, excitants quicken the digestion, as we see with epigastic or local stimulants, as well as with the particular food which we take, as with wine or with cumin seed, as with fresh fish or with salmon; while tonics render the digestion more perfect, as occurs when we use cinchona in convalescence from disease.

Though the most perceptible effect of tonics be upon the muscular system, and by a display of their powers that we judge of strength, yet the whole system feels the benefit of them when appropriately administered. Everyone who knows that he can, at one time, lift a weight with ease which, at another time, he cannot move but with difficulty and exertion. In the former case, he is pronounced strong; in the latter, weak.

The nature of the muscular fibre need not be discussed here; it is enough for us to remark, that to execute its functions properly, it must be in a certain state of tension, that is, must be subjected to the influence of a force, proceeding from a fixed point cannot influence a moveable body till it be drawn tight; so a muscle cannot raise a limb unless it possesses a certain degree of tightness. The difference of the power of muscles varies greatly, according to the nature or use of the member which is to be served. If a muscle be taken from an animal in good health, it will not only bear a greater weight than the same muscle taken from an animal which has long been sick, but the former will be many days before it goes to decay and allows the weight to drop, while the latter will become totally without strength. To maintain the muscular fibres in this condition, a due supply of blood and of nervous energy is requisite. The sources of these are in a healthful and vigorous digestion, and as this necessarily goes on when the system is much disordering, or suffering from any general disease, scarcely any morbid a-tion, or even the natural exercise of mind or body, if pushed to an extreme, can continue without producing debility. Tonics are, sooner or later, required, seldom, indeed, to remove disease, but to obviate its effects, or that of the treatment it has been necessary to employ. The use of these requires the greatest circumspection, for, till we have removed the cause of the disease, they can rarely be of service; on the contrary, they often do harm.

We have above pointed out the connexion between the state of the digestive functions and the energy of the other functions, and it is important to bear in mind that anything loading and oppressing the stomach and bowels will lessen the tone of the system, diminish the disposition for exertion, and the patient will require a stimulant. This practical practitioner will here give, according to circumstances, an emetic or a purgative, and repeat this last for three or four days successively: in proportion as these act well, the hunger and listlessness disappear, the mind resumes its wonted activity, for the cloud of ir regularity in the system, and partial mental faculties is dissipated, and all again is energy, elasticity, and strength. An unskilful practitioner, and still more frequently the patient or his friends, would recommend some stimulant, a little brandy, or some bitter herb as an aid, the influence of which all the systems become agitated.

It is a still worse case when the debility which occurs at the commencement of fevers, particularly ague and typhus, is so treated, though this is not so common an occurrence. A copious perspiration is occasioned by inflammation of the mucous or inner membrane of the stomach, is a frequent condition of that organ with the inhabitants of towns, particularly among merchants and others engaged in extensive business which engrosses their whole attention, and leaves little time to go out for exercise or food at proper times. The employment here of tonics, in the first instance, will only convert a manageable case into a difficult and serious one. It is, therefore, rather in the stage of convalescence from acute disease than in the general state of health, that tonics are requisite and it is in the weaker and more debilitated persons, as to medicines, than articles to be employed in the commencement, if we except some affections of the nervous system.

We need not enter into details respecting the particular action of tonics upon each set of organs of the body, as it will be sufficient to say, that there are three chief classes of tonics in general use: and these are, to act upon the heart and arteries, to act upon the lungs, and to act upon the stomach. A tonic may begin to execute his functions more vigorously, the stomach first feeling the beneficial effects. But this state of improved action follows their use (i.e. when they are medicinal or material tonics) only for a time; for these continued employment leaves the stomach in a state of debility, perhaps greater than at first—a fact of which we should never lose sight. These remarks will, I trust, induce all to observe caution both in taking upon themselves to use the articles termed analeptics merely because they feel a pull or a tug, which they attribute to a state of weakness, or in urging their friends to have recourse to them at the commencement of disease, or even when it is subsiding, as more relapses are occasioned by a premature employment of these medicines, whether medicinal or dietetic, than by all other causes combined.

It is impossible to enumerate here, and give directions for the use of, all the analeptics, comprising, as they do, medicines, food, and regimen. The medicines are either from the mineral or vegetable kingdoms: when the former, they are chiefly preparations of the metals, as the salts of iron and flowers of zinc (oxide of zinc); from the latter, they are invariably bitter substances, as Cinchona bark, Calumba, quassia, chamomile, &c. The analeptic mode of use was, in the first instance, to be applied after a severe illness, or after a long confinement, by bathing, exercise, and the diversion of the mind.

The employment of the medicines will be stated under the diseases to which they are suited; bathing will be treated of under that head: it is, therefore, only upon the last two modes of treatment that we shall enter in detail. An examination of the human frame demonstrates that it was intended for motion, alternately with repose, and not for a state of absolute quiescence. Nor is the mind, which is furnished with so many faculties and powers, so many or any of sense, which are not to be exercised either with the external world, less calculated for active exertion. Any attempt to contravene the law of nature which enjoins a reasonable exercise of mind and body, brings a punishment upon the individual; the mind which has been long shut up and allowed to lose its powers, desires the contrary; the body becomes a prey to disease in some shape or form. The action of the muscles is necessary to aid in circulating the blood and in completing the process of digestion, as well as...
to ensure a regular motion of the bowels. Where the muscles are not exercised, the blood, instead of reaching the surface and the extreme vessels, accumulates in the large internal trunks, leaving the skin dry and bloodless, as seen in young chlorotic females. When a young child, debilitated and enfeebled, is permitted to indulge in a quantity of juices, and to subsist on fruits and vegetables, they form a part of their education; young persons would then be furnished with motives for taking exercise out of doors—to the manifest advantage of the figure of the body and the tendENCIES of the mind. This is well known; there cannot be a short man or a tall one of middle size, yet the height of the short or tall man is an absolute quantity, and independent of the comparison. In the cases of a common property, or ratios of degree, there are words which denote the RELATION of one term to the other, as length, height, breadth and the first is simply both terms of the ratio; but there is no word which expresses the term of the ratio itself, as in the case of ratios of implication. (See Locke, On the Understanding, b. ii. c. 25.)

When two ratios are compared, that is, when it is affirmed that the relation of one term to the other is the same as the relation of two other terms, the two ratios together form an analogy, and each pair of the corresponding terms of the two ratios is analogous. Thus, the bark stands in a similar relation to a tree as the skin to an animal; and consequently the one is a sole to the other, or the one is analogous to the hair of a quadruped, the admiral of a fleet is analogous to the general of an army. Of this nature are all fables and parables, in which the circumstances of the person to whom the lesson is addressed are illustrated by a particular, the moral of which is analogous to the form in which he is placed. Thus the case of a man who affects to despise what is out of his reach, is vividly portrayed by the fable of the Fox and the Grapes; and in other cases: the parables of Holy Writ are instances of similar kind: instruction, only the examples are not, as in fables, chosen among irrational animals. [See FABLE.] The same is the principle of grammatical and etymological analogy: thus, if to give is conjugated I give, thou giveth, he giveth, and I live, thou livest, he liveth, it would be considered an innumerable number of inflections of the verbs standing in a like relation to each. So the verb ratlle is derived from to rate, as prattle from to prate, and hobble from to hop; little is derived from the old word lite, as myckle or myckie from much. Thus, the analogy is to king, as mice to the French ronger, rats to the Latin rex, or rather to the root reg, which two latter substantives have not been Naturalized in English. The formation and development of language proceed almost exclusively on this principle.

In times past, when has been the case? it is evident, 1. That in an analogy there must be two ratios, and consequently four terms or objects of comparison; and 2. That there is no connection between resemblance and analogy, and that things may be analogous without being similar, and similar without being analogous. 1. With respect to the analogy, it should be observed, that although in the first terms of a ratio, it is not necessary that all the four terms should be different. If there was such a necessity, one of the chief uses of analogy, as an engine of argument, and would be destroyed. What is required is, that there should be two distinct ratios: of what terms those ratios may consist is indifferent thus, in the case of brethren, the parents are in an analogous situation in respect of each: so the grandfather is to the son as the son is to the grandson. In the case of angry relations are known: frequently, however, the relation in which one thing stands to another being known enables us to discover, with greater or less certainty, the relation that has been to something else, but not as such, unknown. Thus the moral government of mankind by the Deity, in this world, furnishes a means of conjecturing his religious government, both in this world and the next, independently of a Divine Revelation. So the past conduct of a nation, a government, a minister,
general, a lawyer, an architect, a painter, a poet, a macaroni. A man of erudition is a good model for judging what will be their future conduct or performances under similar circumstances. It is to this most important use of analogy that Quintilian refers, when he says that its purpose is to discover what is unknown by what is known, to prove what is uncertain by what is certain.

2. Resemblance being the similarity of some sensible quality, as form, colour, taste, smell, or sound, it has evidently no connection with analogy; and if things analogous happen to resemble one another, their resemblance is a mere mode, independent of the other kind of resemblance. This is the case with law and comparison. The law is always the same in principle, but the comparison is always subject to some modification. Thus, two angels may resemble each other; but they might equally resemble each other without being brothers, and would be equally brothers if they did not resemble each other. The confusion of analogy and resemblance is, however, of very frequent occurrence, and numerous examples of it might be cited. It is, we believe, the opinion of several commentators on the New Testament, that, in the passage of St. Matthew where the Holy Ghost is said to have descended "as a dove," it is used in a metaphorical sense, and not meant, as elsewhere, to imply the descent of the Holy Ghost in any other form or manner.

The above examples may serve to illustrate an error of frequent occurrence in the use of the argument from analogy. Two instances just cited, which are not intended to be analogous, are made to resemble each other by the writer's own method. The same thing might be said of the similitude of a dove, which was the symbol of the Holy Ghost, and of a dove descending in the shape of a dove to the earth. In so doing, the writer has committed the error of making two things that are not analogous resemble each other.

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though the discoverer will naturally first try those methods which have been successful in preceding cases, he has no means of assuring himself beforehand which will be successful. The chemist is similarly circumstanced. Let a new substance, or one supposed to be such, be presented to him, from which he is to discover whether it is already known, or if not, of what it is composed. No effective analysis can commence without requiring the results of all his previous knowledge, for he must have some method of recognising each and every substance with which he is acquainted, previously to proceeding in the method which he best judges may be the correct one under consideration is one of them. He must then proceed to trials of that substance with various others, and nothing but the sagacity which arises from previous experience can direct him in his choice of the methods to be employed. No general rules of analysis can be laid down, that is, no processes which must end in the discovery of the component parts required. The same observations may be made on mathematical analysis. We give a geometrical instance, with its result, and the synthetic form of the proposition arising out of it.

The sides of a triangle ABC are cut in D, E, and F, by a straight line. Six segments are thus formed, AD and DB, whose sum is the side AB; AE and EC, whose sum is the side AC; and BF and FC, whose difference is the side BC. It is required to investigate the relation which exists between these six segments, if there be any relation.

Some relations will be thrown out of the question upon the slightest consideration: the sum of the six lines is not the same in every triangle, neither is their product. Leaving this unexamined, we may examine the solution, if CB were parallel to DE, the then similar triangles ADE, ABC, would give a well-known relation between AD, DB, AE, and EC. To try whether this may help us, draw CG parallel to DB, which gives the proportion

\[
AD : DB = AE : EC
\]

or if we represent the lines by the number of units which they contain.

\[
AD \times EC = AE \times DG \quad (1)
\]

Because GC is parallel to DF, we have

\[
CG : BD = BG : CF 
\]

and the equations (1) and (2) multiplied together, and the result divided by the common factor GD, gives

\[
AD \times EC \times BF = AE \times BD \times CF \quad (3)
\]

which is the result we were in search of, if the six lines is as follows:—Let them be separated into two lots of three lines each, in such a way that no two lines which have a common extremity are both in the same lot; then the product of the first three will be equal to the product of the second three.

If instead of asking for the relation, if any exist, between the six lines, the equation (3) had been given, and it had been required to determine whether it was true or false, the problem would have been simpler; and we should have found that the equation (3) is the necessary consequence of the proposition, that a line drawn parallel to one side of a triangle divides the other sides into proportional segments.

The analytical form of the preceding process differs from it much less on the paper than would be the case in the mind of a student, who had actually hit upon the solution in the progress of investigation. For, not being able to tell the various steps by which one of our readers would arrive at the conclusion, to which we are obliged to prompt him with a right guess, and thereby give him only a synthetic description of that which was in our minds an analytical process. It only remains, therefore, to make the demonstration synthetic in form, which, as will now be readily seen, will consist in assuming the proposition to be proved, directing to draw CG parallel to DF, without giving any reason, and combining the steps of the preceding demonstration.

The geometrical analysis is generally ascribed to the school of Plato; but, in reality, as we have already observed, must be of a date as early as geometrical reasoning itself. The use of propositions, or problems, [see also Loci.] admitting an indefinite number of solutions, the establishment of the properties of the Conic Sections, and the various efforts made for the discovery of some general and the projection of the angle, all of which were the work of the school already mentioned, most certainly increased the power of the analyst, that is, made the means of discovery more obvious and more successful: but there is nothing in the method which enables them to the exclusive appellation of geometrical analysis.

The peculiar distinction between algebra and geometry is, that the analytical method is pursued in the former from the commencement. The solution of a problem consists in the various steps of reasoning into the solution of the equation, which has to be found, by introducing at every step some known truth, such as will produce a more simple consequence, and thus reasoning backwards, so to speak, until at last the answer itself is directly produced in numbers, which was before impossible. The same investigation must be repeated to attain results which have since been shown to be impossible.

Analytic. Chemical analysis is the separation of compound bodies, either into their simpler or their elementary constituents. When merely the number and nature of these are ascertained, it is termed qualitative analysis; but when their proportions also are determined, the analysis is quantitative. If the analysis consist only in determining the quantities of the component parts, then it is called proximate, as when carbonate of potash is separated into carbonic acid and potash: but when the operation is extended, and the carbonic acid is resolved into carbon and oxygen, and the potash into potassium and oxygen, the analysis is ultimate for neither carbon nor potassium is divisible into two or more kinds of matter.

ANAMOUR, the ancient Anemurium, is the most southern part of Asia Minor, and described by Strabo (p. 669) as the nearest point of the mainland to Cyprus. It was in 366/7 B.C. in 36. E. by 32. N., and terminated on a high, bluff knob, one side of which is inaccessible; the other has been well fortified by a castle and outworks, placed on the summit, from whence a flanked wall with towers descends to the shore, and separates it from the rest of the territory. For the two miles cut in the rock, several miles in length, and on different levels, which supply the castle with water; where they are carried across the ravines, they rest on arches. Here are the remains of two theatres; and beyond these is a great number of detached tombs, built of two members, with arched roofs. No inscriptions were found. The place is now altogether deserted; and the present castle of Anamour is about six miles east of the cape, on the edge of the town.

ANANASA, or the Pink Apple, is a genus of the natural order Bromeliaceae, found wild in the woods of South America, and now commonly cultivated in the gardens of rich Europeans. It is distinguished from the genus Bromelia, to which it is often referred, by its succulent fruit collected in a compact head.

Of Ananas sativa, the common pine-apple, a great number of varieties are known, of which the Moscow and common queen, the black Jamaica, and the Antigua queen are the best for summer use, the Envil and the Trinidad the largest, the black Jamaica the best for winter use, and the blood-red the worst for any purpose or season.

The fruit is a mass of flowers, the calyces and bracts of which are fleshy and grow firmly together into a single
ANAPLON

ANONYMOUS

Astronomy's New Bath Onice may be quoted as a well-known example. The line is often reduced to eleven syllables, by the retrenchment of the first, or the substitution at the beginning of an initial instead of the antepass. Thus, in the following lines from the work just mentioned, the figures and, quoin of the discovery and the discovery of a new species of anastomosis are better than books for improving the mind.

But a great deal of judgment is required in the elimination of any syllable from a word, or in the substitution of one phonetic value for another. It will be observed, that the first foot of the second line consists only of one short or unaccented syllable followed by a long; and a similar retrenchment might be made of the commencing syllable of any of the others, without selling it profusely.

ANAPLON. [See NAUDPIA.]

ANARCHY properly means the entire absence of political government; the condition of a society or collection of human beings inhabiting the same country, who are not subject to a common sovereign. Every society of persons living in a state of nature (as it is termed) is in a state of anarchy; whether that state of nature should exist in a society which has never known political rule, as a hedge of savages, or should arise in a political society in consequence of revolution on the part of the subjects to the sovereign, by which the person or persons in whom the sovereignty is lodged are forcibly deprived of that power. Such intervals are commonly of short duration; but after most revolutions, in which violence already of government has been the usual period, during which there was no person or body of persons who exercised the executive or legislative sovereignty—that is to say, a period of anarchy.

Anarchy is sometimes used in a transferred or improper sense to signify the condition of a political society, which, according to the writer or speaker, there has been an undue remissness or supineness of the sovereign, and especially of those who wield the executive sovereignty. In the former sense, anarchy means the state of a society in which there is no political government; in its second sense, it means the state of a political society in which there has been a deficient exercise of the sovereign power. As an insufficiency of government is likely to lead to no government at all, the term anarchy has, by a common exagération, signifying use, instead of indicating the true, or altogether properly means the entire absence. [See Scarcity of Law.]

ANAS, the duck, a genus of birds under which Linnaeus included a great number of species now separated into several genera by recent naturalists; and even Temmink, Draggan, and other remarkable authors of the Linnaean genus, find it convenient to separate the geese and the swan, and to distinguish the others according as they possess or want a loose membrane covering the hind claw. Illiger ranks the swan with the ducks, from which it is separated by the down. In ordinary zoological works, however, they have proposed a great number of subdivisions, and Leach and Fleming have established several new genera. The following are Temminck's characteristics, with some slight modifications:

The bill of middle size, strong, straight, covered with a thin membrane, and always depressed towards the point, which is rounded, blunt, clawed: margins of the two mandibles toothed with laminae. Nostrils almost at the surface of the bill, at some distance from the base, somewhat oval, more developed in the male. The fronto-nasal bone is long. Legs short, feathered to the knees, drawn back towards the belly; three toes placed before, wholly webbed; hind toe free, and jointed high upon the Shank (tarsus). Wings of middle size, the first quill either as long as the second, or rather shorter than the second.

ANASTASIOI. I., Emperor of Constantinople, succeeded Zeno, A.D. 492, through the interest of Atalanta, Zeno's widow, who afterwards married him. Anastasius was then sixty years of age. He was called Stilicarius, because he was the head of the guard, or Stilts, as the palatine guards in the days of Justinian. He is said to have maintained peace and silence within the precincts of the imperial palace. Longinus, Zeno's brother, who aspired to the throne, was sent to Alexandria, where he took priest's orders. The beginning of Anastasius' reign was favourable; he alleviated several of the caprices of his predecessor, removed the abuse into Zeno, of selling the public offices to the highest bidder. He also encouraged men of letters, and was himself a man of some learning. Theodosius, king of the Goths, who, after defeating Odoacer, had made himself master of all Italy, sent an embassy to Anastasius, who recognised his title to the kingdom of Italy, and sent
him the purple in token of it. But their good understanding
did not last long. Theodoricus invaded part of Illyria and
Triphunia, and defeated the Greeks on the river
Margus, now the Morava in Servia. Anastasius, on his side,
sent a fleet and army which ravaged the coast of Italy as
far as Tarentum, in 508.

Anastasius became obnoxious, on account of his ava-
rousness and his desire to extort from the Greeks不论ed
saints and dragged them through the streets; and he
was himself assaulted by a shower of stones while in the
Circus, and with some difficulty saved his life. To add to
his misfortunes, the empire was attacked by the Bul-
gariacs, who advanced to Constantinople, and then
vanquished Armenia, and took the town of Amida or Diarbekr
on the Tigris, but were defeated by Justinus, who afterwards
became emperor. A truce was concluded between An-
astasius and Càscades, king of Persia, which lasted twenty
years, under the treaty of Parnes, to which the Persians never
were devoted. Then the vanity of appearing as a theologian, and of med-
dling in religious controversies. This nearly cost him his
crown; his attempt to introduce some changes in the
liturgy occasioned tumults at Constantinople, attended by
fires, which the Greeks then called apollonizing. They
were conducted by the late Patriarch of Constantinople, and Anastasius
only obtained peace on condition of becoming reconciled to
the church. He had involved himself in disputes with Pope
Ursus, and had written to Rome for the Bishop of
Rhodes, and returned to Constantinople, where
they proclaimed emperor one Theodosius, a receiver of the
taxes, who, however, alarmed at his dangerous promotion,
rushed away from them. The insurgents plundered and burnt
near two hundred churches into which the Persians had
broken in Bithynia, was defeated and obliged to surrender, with per-
mission to retire to a convent, and to become a monk.

Theodosius III. was then proclaimed emperor in 716, but
being unequal to the task, he resigned the crown to his
brother, who was crowned the following year. A man of
he was proclaimed emperor, and sent a new
excarch to Italy, and declared himself a follower of the
Western church. Constantinople being threatened by the
Saracens, Anastasius, to effect a diversion, sent a large fleet
with an army to Alexandria, but the troops revolted on
arriving at Rhodes, and returned to Constantinople, where
they proclaimed emperor one Theodosius, a receiver of the
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peled Rufinus from the communion of the church.
The latter wrote an Apology which is found in Constant's collec-
tion of the Epistles of the Popes. Anastasius died in 492, and
was succeeded by Valentine I.

Anastasius I., Pope, a native of Rome, succeeded
Siriacus about the year 396. He was a contemporary of St.
Jerome, and ascended the chair of St. Peter in the year 398.
He condemned the doctrine of Origen, and he also ex-
peled Rufinus from the communion of the church.
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tion of the Epistles of the Popes. Anastasius died in 492, and
was succeeded by Valentine I.

Anastasius I., a native of Rome, succeeded Gelas-
lius I. in 496. He endeavoured to put an end to the schism
then existing between the see of Constantinople and that of
Rome about the question of precedence. He also wrote a
complimentary letter to Clovis, king of the Franks, on his
conversion to Christianity. He died, after a short pontificate,
in 498.

Anastasius III., likewise a Roman, succeeded Ser-
gius III. in 911, and died the following year.

Anastasius, Bishop of Sac-
bina, was elected Pope in 1153, after the death of Euge-
nius III. Rome was then in a very disturbed state, owing
to the schism of Arnaldo of Brescia and his followers.
Anastasius died in 1154, and was succeeded by Adrian IV.

Anastomosis, from αναστωμισις, through, and to a single
mouth, signifies the communication of blood-vessels with
each other by the opening of the one into the other. The
blood-vessels are the tubes by which the different parts of
the body are supplied with nourishment. If the blood-
flow is a part of this nourishing process, and if it cannot receive a due supply of blood, that part must neces-
sarily die, or, as it is technically termed, mortify. But
the blood-vessels are soft compressible tubes, liable, by in-
umerable circumstances, to have their sides brought so
close together as to prevent the free passage of a single
particle of blood through them. In order to prevent the
consequences that would result to the system from the operation of causes thus tending to impede the circulation,
provision is made for the freest possible communication be-
Taneously, in the main arteries, and between
branches, and between one branch and another. It will
be shown hereafter [see Aorta] that all the arteries
of the body spring from one great trunk which issues from the
heart, and which passes from the heart through the chist,
and passes the abdomen, or that in the lower extremities will receive a sufficient supply of blood to
maintain their virility through these collateral or anastomos-
ing branches. The knowledge of this fact enables the modern surgeon to perform with ease and safety operations which
the surgeon of former times would have pronounced imprac-
sible. Anastomosis is of two kinds, that between large trunks, and that between small branches. When the communica-
tion is direct between two large trunks, there is no difficulty in connection, provided the branches which
are to be joined are of the same size; and, however
large or small the branches given off below the obstruction, are in like manner
dilated and admit a correspondingly free passage of blood to
the inferior part of the limb. At first the circulation is in
the manner carried on through congeries of minute anas-
томizing arteries, but in a short time a few of these channels
become more enlarged than the rest: as these increase
in size, the smaller vessels gradually collapse, and thus
ultimately a few large communications constitute permanente
tributaries. It is obvious that the blood-vessels are the
which it is destined to supply. Such is the beautiful
provision established in every part of the body to secure to it
due supply of blood, if any obstacle should obstruct the
course of this vital fluid through its accustomed channel.
sense the term anithema (αναθήμα) was employed, and not anathema, though both are really the same word. In the decrees of popes and councils, also, a common form of expression is, whosoever shall do, or not do, or believe, or not believe, breach of it. Anathema may be translated as that is, let him be held excommunicated, separated from the society of the faithful, and branded with the curse of the church. On the other hand, a heretic, when he renounced his errors and was received into the bosom of the church, was accustomed to declare his hresy anathema; as a thing accursed. In English we more frequently use the term anathema in the sense of the curse or severe denunciation itself than for the object of the curse; as when we speak of the church directing its anathema against any particular person.

ANATIDA (Leuck), the duck kind, a group formed by Dr. Leuch to include his genera formed from the great genus Anas of Linnéus, and comprehending Oedemia, Somateria, Clangula, Nyroca, Taborna, Spatulina, Querquedula, and Querquedula, and Querquedula, and Querquedula.

ANATOLIA, or NATOLIA, is a geographical term now generally considered as synonymous in extent with Asia Minor. It is derived from the Greek Ανατολή, (Ανατολή) the 'east,' or the 'part where the sun rises, and may be compared with the Persian term Ḥarānt, which is used to express generally the countries bordering on the eastern shores of the Mediterranean. The word Anatolia, as a geographical term, originated under the Greek empire, and referred to the countries bordering on the eastern Mediterranean. Anatolia or Anadolu, in a more restricted sense, is used to indicate that tract of country which stretches along the western and a large portion of the northern shores of Asia Minor. Adopting such a restriction, geographers divide Asia Minor into the following parts, Anatolia, with islands, Turkey on the south-east, and Rum to the north-east. But Captain Beaumont, who surveyed the southern coast of Asia Minor, remarks, that however convenient as a geographical distinction, the term 'Karamania' is not used by the present inhabitants, nor is it recognised by the government.

The Pasha of Anadolu (Anatolia) has military jurisdiction over all authorities within the barrier of the Euphrates. Anatolia, taken, then, in its extended sense, represents the whole territory contained within 36° and 42° N. and 40° and 60° E. longitude. The Euphrates, which is the boundary of the Black Sea, the Black Sea, on the west by the Aegean, or Archipelago, and on the south by the Mediterranean; its eastern frontier extends to the Euphrates and Armenia.

If we are to give the name to a natural boundary on the east for this portion of the country, it would be Anatolia, which should be somewhat in accordance with the received notions as to its political limits, we might consider it as commencing at Cape Hyurou on the Gulf of Scanderon, and running between Asia Minor and Asia Minor, 10° N. along the mountain range of Anatus to the neighbourhood of Malatiah near the Euphrates, and up that river to the point (about 10° N. lat.) where the Euphrates, from a course due east and west, takes a course to the S.W. From this point a line drawn along the coast through Messina, and thence along the Black Sea, by the Black Sea, the west by the Aegean, or Archipelago, and on the south by the Mediterranean; its eastern frontier extends to the Euphrates and Armenia.

The term Asia Minor is one of comparatively recent date: it was unknown to Greece, and, we believe, Roman geographers, at least under the early emperors; nor do we know when the term first came into use. It is, however, now properly used, and is the ordinary term for denoting that extensive country of a peninsula form, the limits of which we have just attempted to define. From a notion early prevalent and long-continued, that the distance from the Gulf of Scanderon on the south coast of Asia Minor to the Black Sea was the boundary of Asia Minor, the north was much less than it really is—arose a vague idea of Asia Minor (as we understand the term) being a kind of insulated mass from the rest of the continent. The Euphrates running along its eastern frontier for so considerable a distance from north to south, favoured this idea. Before Hadrian recedes Asia Minor among one of his Annals [See Actium and Asia]. From the coast of famous Cilicia to Sinope on the Euxine, he assigns a breadth of 30, and to the Gulf of Sinus to the Black Sea, the breadth assigned by Eratosthenes, 100°. The real breadth of the narrowest part, which is relatively less than the true breadth of the line described by Herodotus, is somewhat more than 300 English miles, near in from the gulf of Issus to Farsah, west of Cerasus, west of Cerasus, on the Black Sea. The width assigned by Eratosthenes, 30°, is very near the truth: Pliny, with his usual inaccuracies, gives it 200 Roman miles, about 160 short of the n.m. Dalouville, in his Map of Asia Minor, made the isthmus to be narrow by a whole degree, or about seventy miles, which can only be accounted for in his ignorance of the true breadth of the country, and compelled him to make amends for the loss of space by pushing the limits of the peninsula too far to the east. (See Major Rennell's Treatise on the Comparative Geography of Western Asia, vol. i.) Major Rennell says that the coast from the Gulf of Issus to the Black Sea.

Asia Minor was known to the later Greeks under the divisions of Mysia, Lydia, and Caria, occupying the western shores. Those of Lycia, Pamphylia with Phaedia, and Cilicia, to which Lycia was sometimes added, bounded it to the north, and on the north coast were Bithynia, Phrygia, and Lydia. The north of Asia Minor was bounded by the empire of the Romans, which lasted from the reign of Augustus to the beginning of the 5th century, when it fell into the hands of the Persians. The boundaries of Asia Minor were divided into two great internal divisions: the north part, which included the inhabitants of the Roman province of Anatolia, and the inhabitants of the Roman province of Pontus. The province of Asia Minor was bounded by the Euphrates, on the west by the Aegean, or Archipelago, and on the south by the Mediterranean; its eastern frontier extends to the Euphrates and Armenia.

By the Romans this country was sometimes divided into Asia Minor and Asia beyond the Euphrates. Our imperfect knowledge of the country prevents us from placing any reliance upon statements of the divisions in existence. It is certain, however, that the province of Asia Minor was divided into two great divisions: the north part, which included the inhabitants of the Roman province of Anatolia, and the inhabitants of the Roman province of Pontus. The province of Asia Minor was bounded by the Euphrates, on the west by the Aegean, or Archipelago, and on the south by the Mediterranean; its eastern frontier extends to the Euphrates and Armenia.

The account of the division of Asia Minor is derived from the following sources: the officers of the Roman government, who were appointed to parcel out this territory into pashalics under seven governors, confounding all the antient distinctions. The account is taken from the Rupee, which was the ancient coinage of the country, and preserved in the Royal Library at Paris. The following are its divisions:

1. The Pashalic of Anadolu, (Anatolia) including the regions of Mysia, Lydia, Propontis, Lycia, Caria, Pamphylia, Pisidia, and the larger part of Pisidia, Paphlagonia, the Pashalik of Sivas, (Sebastia,) containing Eastern Galatia, and the upper part of Pontus; 2. The Pashalic of Tarabogaz, (Trebizond,) being Cappadocia Pontus and southern Caucasus, Hadji-Khalafkal, the geographer, mentions the country of Ayastepe, which is preserved in the Royal Library at Paris. The following are its divisions:

4. The Pashalic of Konia, (Konia,) containing Central and Western Cappadocia, Lycia, and Lausoria; 5. The Pashalic of Mersache, (Mesara,) bordering on Syria, and containing Commagene, Cappadocia Pontus, Samosata, and the country of Cilicia Proper; 6. The Pashalic of Adana, (Adana,) containing the country of Cilicia Proper; 7. The Mesaultik of Cyprus, held of the Grand Vizier, being an appanage of his office. The word Anadolu is of recent date, and no mention is made of the feudatory possessions of the Seljuks on the borders of Asia Minor, nor in the annals of the Saracens, who were, in fact, the protectors of European travellers. Before the formation of the Seljuk revolution, important changes had occurred in the general administration of Anatolia. These great feudatories had been swept from the land by the Seljuks, and by oxide (Samsun), and since that event, Smyrna and Ionia have been elevated to a pashalic. The following divisions are given by Bali as those now constituting the districts or eyalets of Asia Minor: Anadolu, Adana, Carmania, Marsch, Sivas, and Trebisund.
Asa Minor, though the seat of early civilisation, and still containing numerous traces of former prosperity, is a country very little known. The southern coast was surveyed by Captain Beaufort, who commenced at Yedi Booroon or the Scenadery; but few first the sea on the north side of the large Xanthus in Lycaonia in July 1811. The survey was continued along the coast to Ayas, (Δεμοθέα) in the gulf of Scanderoon, and was unfortunately interrupted before that interesting bay could be examined, owing to the commanding officer being disabled by two accidents to the men and thirty men being detained. The west coast from the entrance of the Dardanelles to the point where Captain Beaufort’s operations commenced is not yet so accurately laid down; but Captain Copeland, who has finished his survey of the coast of Macedonia, is now in touch with the line of coast. An eye-witness, however, may have an opportunity of peeping into the Dardanelles. There is a Spanish survey of the Dardanelles, of the sea of Marmora, and the channel of Constantinople, with some additions made by the Hydrographical Office of the British Admiralty; and the north coast of Asia Minor is laid down from French and Russian surveys, (the French survey by Captain Gauvain) but not with that minuteness that is still desirable.

The southern coast, as far as it was surveyed by Captain Beaufort, presents an irregular outline, formed by two huge semicircular sweeps presenting their convex side to the sea, and by two other bold sweeps with their convex side running into the land. There is, however, no deep Gulf or bay with the exception of the Dardanelles. The coast of Asia Minor, between Asia Minor and Syria. Few coasts present so bold a front to the sea. From the Gulf of Glauceus to the extensive plain which opens behind Adalia, an almost uninterrupted mass of lofty mountains presses near the shore, and forms a definite series of mountain-passes on the boundary of the waves. From the mouth of the Eurymedon to the peninsula of Cape Cavaliere there is a series of bold promontories; and in some parts bare rocky hills form the coast, as between Selinty and Anamour, backed by lofty mountains, and the whole forming a kind of capacious cleft, the wilder, the plains of the level Cilicia open on the sea, commencing near the city of Soli, and extending some distance along the N.W. coast of the Gulf of Issus. There are very few steep cliffs along the island coast, and the fact is true of the northern coast: the reason will be apparent when we come to consider the direction of the principal mountain ranges of the peninsula.

The western coast of the peninsula presents as jagged and irregular an outline as that of any coast in the world, and in many respects very much resembles the opposite shore of Greece. Deep bays with bold projecting peninsulas, and islands which are continuations of the adjacent promontories of the main-land, characterize this coast. Thucydides, in his relation of the course of the Meander, the Caystrus, the Hermus, and the Caicus, which exceed those of the southern slope, (with the exception, perhaps, of the rivers which water the eastern Cilician plain,) and their general direction from west to east separate other parts of the coast, which mountain barriers extend to the coast of the Archipelago. The channel of the Dardanelles, the antient Hellespont, separates Europe from Asia by a strait about forty miles long, and at its narrowest part not more than one mile broad. The widening of the Propontis, or Sea of Marmora, about 140 miles (taking the longest line,) and 45 broad in the widest part, is succeeded by the narrow channel of Constantinople, (14 miles long,) which unites with endless more, and the coast of the Black Sea presents no very deep indentations or bays; and though the mountains are never very far removed from the shore, a considerable extent of coast from the entrance of the Black Sea along the shore of Bithymia is comparatively open. The Sanguin is the only river of any magnitude on the coast which lies near the shore, and the depth of water as marked on the charts very great. From Cape Karapni (Carambia) for some distance eastward, the coast is marked as high; and from the neighbourhood of Sinub (Sinospe) as far as the town of Samoun (Antiochus) it has the same general character.

From the mouth of the Yeshil Ermak to Cape Yassoun, a distance of 70 miles, the coast is low; the remainder, as far as Trebizond, is more elevated, though as far as we know, not lined with such high cliffs and rocks as characterize the

The great mountain ranges on the north and south sides of the peninsula have a general direction corresponding to that of the coasts, and as the rivers on all the three sides of the peninsula enter the sea at right angles to the general coast line, it follows that the valleys of the streams that enter the sea and flow northwards must be of the most different character from those of the Meander and the Hermus, which enter the sea on the west. But few streams on the southern coast traverse any considerable ranges of hills, and, perhaps, none penetrate from the north side of the great barrier of Asia Minor and Syria. Any approach to the mountain-passes by a deep cleft through the mountain barrier (Strabo calls it Taurus: Cassub. p. 536) which unites the range of Amanus with the range of Taurus, after it has taken its great turn to the north. According to the description of Screenus, the little river of the Tauri must be wider than any mountain-passes in the world. On the north side some considerable rivers intersect the mountain-chains, forming deep gorges and narrow transverse valleys that give this country quite a different appearance from that of the western side of the peninsula. Such is the gorge which Anasia, the birth-place of Strabo, stands on, the Iris (Yeshil Ermak).

The grand characteristic features of the geography of Asia Minor are the mountain ranges which traverse it; two chains detached from the plateau of Armenia, the more southern, the Anti-Taurus of the antients, the other, the Poryades, known by the modern name of Tcheldir, or Keidir, unite probably near Kasaria, in the district of Tmolus, and at its exit into the Tauric coast. Covered on its summit by perpetual snows, this circumstance must determine in so low a latitude the elevation of this mountain to be from 9,000 to 10,000 feet. The southern chain, which is, in fact, the Taurus, in its extending itself, and the Anti-Taurus, first takes a southerly direction to the neighbourhood where the Pylos Cilicia (the mountain pass of Cilicia) is situated. It then runs in a general westerly direction, but in an irregular line like the coast; it is divided by a number of lesser mountain-chains of the peninsula of Cnidos and Halicarnassus, forming the southern boundary of the valley of the Meander. The highest part of the Taurus seems, however, to take a southerly course and then a westerly direction. The valley of Adalia; and its bold summits press close on the whole coast of the antient Lycia, and perhaps nearly fill the interior. Strabo traces the range of Taurus as far as the coast of the mainland opposite to Rhodes. The mountain above Phaselis, called Takkuti, the ancient Solyma, is 2800 feet high; but some summits in the interior must be still higher, for while Takkuti, in August, bad but a few streams of snow on its peak, many of the distant mountains in the interior were completely white for a fourth part of the way down their sides. (Beaufort, Voy. of the L. G. 2. p. 12.)

This range of Taurus is the great southern wall which is the boundary of the high lands in the interior: its steep side is on the south. A branch, the Sultan-Dagh, detaches itself from the main mass in about 37° 40' N. lat., and near the lakes of Kender it turns to the N. and N.W. where it is the Paroreus of Strabo, and continuing a westerly course, forms by one branch the northern boundary of the Meander valley, under the antient name of Messogia. The range of Tmolus, which lies between the two main and Cysaros, appears to itself from the Messogia at the head of the valley of the Cysaros. Along the northern part of the peninsula we find mountain ranges, of considerable elevation, extending eastward from the Hellespont into Armenia. Though there is nothing to mark or, as it were, their outer limit, they are here bordering on the chief one, and running in this direction, still we trace the great mountain line from west to east under the antient names of Ida and Tmounion in Mysia, Olympus in the neighbourhood of Bruss, and eastwards, called the Sanguin and Erina, the main prominence on the line of the mountains. The Amanus range approaches the Hials it had the name of Olygassus, now Ulug-Dagh. Strabo appears to give the name of Olygassus to a parallel range farther north than the continuous chain of the Olympus, which is the Olygassus of Polyten, and runs in the direction from Osmari to Amanus, where the range is continued to Trebizond, and is consequently, during the greater part of its course, at some distance from the sea, between which and the main range there are plains and hills, but no high mountains. This range east of Anasia is merely omitted in some maps.

Major Rennell considers that the northern and southern
ranges are connected by a western range, the ridge named in modern geology Mount Meren, which separates the Black Sea from the western reaches of the Sea of Marmora. This range, which extends from N.W. to S.E. Mount Olympus with Taurus, and at the same time separates the waters of the Sangarius from those of the Maeander and Hermus. But this western range, if we are to understand it by a continuous chain, appears to be less than the line of the Maeander. The interior of the Sea of Marmora between the greater western wall and the northern barrier which we have described, is, no doubt, intersected by numerous chains, which, however, have in general a western direction, though they are no doubt often connected by offsets in a transverse direction. The mountain of Mount Meren can be considered as nothing more than the general line, along which we may trace the declive of the central plateaus towards the west; and the high points in it would appear to belong to the central mountains which prolong their course on a base of less elevation as a mountain in the mountainous basin of the western shore. The mountain Tros, seen by various travellers from Olympus in a southerly direction, is apparently a knot formed by the angular junction of the western mass of Tennes with the more eastern system of Olympus.

The centre of the Sea of Marmora is an immense basin, which is supported by the ranges of mountains which we have described. Part of it is drained by the rivers that flow into the Black Sea; but an extensive tract, bounded by the great barrier of Taurus to the south, is covered with salt marshes, lakes, and bogs, and is covered with a low vegetation, about 200 miles long from N. and E. to S. and W., and 150 miles broad. The chain of lakes is described as extending from the neighborhood of Symmata (35° 30' N. lat., 31° E. long.) to the Tyrnus, which lies at the foot of the Chianic Taurus, and is about 100 miles in breadth where it turns to the north. In summer and autumn, when these lakes overflow, and, Leake says, would entirely submerge a hundred miles, were it not for the ridges that traverse the plains and separate them into basins. He further states, that these basins form themselves into three principal lakes, having no communication with each other in most extraordinary seasons. These are, 1. Kara-Hissar and Ak-Sheer; 2. that of Iznin and Ludik; 3. that of Konie, receiving the overflowing of Solishel and Bey-Shel; 4. the lake lying between the Chianic Taurus on the southeast, and the Narrative Cappadocia on the northwest, now called Hassan-Dagh. To these we may add the basin of basins west of the Sultan Dagh range, the Porouches of Strabo, which contain the large lakes of Eylerder, and Burdack, and another basin, which is very salt, and numerous small lakes. Under other governments these inundations would produce most abundant harvests; but they now run nearly to waste in watering pastures. The salt lake of Tuzla, the Tratta of Strabo, in his account of the potteries in this basin, is described as 30 miles in length, and furnishes with that useful article a vast tract of country. Strabo says, that anything immersed was soon covered by the saline inundations, and birds were unable to fly if they dipped their wings into it. Leake states that Sultan Murad V. made a cannon, which crosses the lake, on the occasion of his army marching to take Baghdad from the Persians. Consequently it must be extremely shallow, and subject to excessive evaporation during the summer and autumn heats. The salt lakes of this high plateau, which borders on the great range of Taurus, are found at intervals from the interior of 30° to beyond 34°, and on both sides of the parallel of 38°, for, perhaps, sixty or seventy miles. They appear to belong to the basins of the high lands, which afford no outlet. The formation of the elevated surface of the basin of the Sea of Marmora, being a native of the peninsula and personally acquainted with many parts, might have left us a description more complete than any modern has had the opportunity of making, if accuracy of detail and of observation had always characterized the geographical descriptions of the ancients. But the excellence of the present description is, from the nature of the subject, not easily attainable, and appears still to wait for improvement from more exact observation and a better nomenclature. The mountain plains (lat. Lyocanna) says Strabo (p. 539), are cold, wild, and treeless, and serve as pasture for the wild beasts.

The river of the Sea of Marmora have more celebrity than importance. The most considerable flow into the Black Sea. The Halys, now the River Euxine, is described as taking its rise in Usakos in the basin of the Seiva, in the basin of the Scamander, and flowing through more than three degrees of longitude, about 35° 10' N. lat., from which point the course of the river

northward is exceedingly irregular. It falls into the Euxine 20° 30' lat., and flows in a winding channel along the boundary of Pontus and Bithynia. Strabo speaks of it as being at its mouth about the width of the Scamander. The whole course is probably not less than 400 miles. The Halys is the most western of the principal rivers of Asia Minor, which are all mentioned in our common maps: this will be briefly discussed in the head of the Halys. The Halys is the largest river of Asia Minor; it formed once the boundary between the Lydian, the Median empire, and was considered by the early Greeks as a mountain river. It runs eastwards, and, as the peninsula might, perhaps, seem fit to derive its name from, in Greek word for salt (祓). To; see Strabo, 340, it is hardly hard to believe that the name is descriptive, as first given by the Greeks to this upper waters which drain the salt plains. It runs as a part of its course. The modern Turkish name, Kizil-Ezmi, means the Red River, but its true name is said to be Euxine. The iris, now the Yeshil-Ermak, runs entirely to the north of the Sparydas, but its remotest sources are, according to Strabo, not far from the river Halys, which runs in direction of the deep valley to Anamolis, the battleplace of Strabo. A few miles below Anamolis it is joined by the river of Kara Hisar, the Lycaeus of Strabo: the mountains flows through a lower country and enters the Black Sea at about 35° 30', N. lat., and 11° 30', E. long. Some Thessaymis, the fabled abode of the Amazons, was to be wooded by the Thermidus, now the Tarnou; its source and its course are not well known, but its length is said in some maps more marvellously and incorrectly. West of the Amazons is the Bithynia and Paphlagonia in the lower part of its course, which does not appear to traverse the great mountain range of the northern side of the peninsula. Its outlet is into the west of the ancient Amastus.

The Sea of Marmora, or Imbros, is a large basin, as said to be formed by two chief branches. The Asin branch is formed by various streams, one of which, the river of Angora. The Asin joins the S.W. branch of the ancient Tymphans, at about 30° 50', lat., 27° 45', long., taking first a N.W., and then a N. course, thus entering into the Euxine through a part of the great Sea of Tres, which runs east towards Bol. The Sangarius with the Halys and the Iris are probably the only three rivers between the ancient Pontus, in the north, and the Greek settlements in the high central plateaus, and whose courses trace the northern mountain boundary of the high lands. All other streams that flow into the Euxine are almost in number, but their sources are in the lower and smaller plateaus, and they are more temporary than the Sangarius and its eastern prolongation, and consequently their sources are short and their volume of water insensible. A few streams which enter the sea of Marmora from the great Olympus and its western prolongation appear to be

The rivers that flow into the Archipelago have been already alluded to as running in valleys of a different character from those of the Euxine. The four chief rivers, going from north to south, are the Caicus, Hermus, Sangarius, and Bosphorus. The Sangarius and the Caspian, probably originate in the western extremity of the central plateaus, but the upper streams of the Caspian are by no means satisfactorily described. The Bosphorus, which is the necessary start to all such courses, though the volume of water brought down from the mountains is sometimes very considerable, and carries with it such quantities of sand and small stones as to be shored apparently very considerable changes on the banks of the river. The Bosphorus, which is 99 feet wide at its mouth, has a curved bar across the whole river, with only 60 feet of water, on which all the fishing must be on. The Caicus, the modern Gymnus, brings down a prodigious quantity of muck and earth to the outlet of the strait being acted on by the current, and has formed a large projecting deposit to the west of the river's mouth. Between the mouth of the Caicus and the

Siboon (the ancient Sarus), which are near one another, and similar changes have taken place.

This description rolls out a continued volume of sand and earth, and is described by Captain Beaufort of the width of only 490 feet at its mouth. Almost all the rivers of Asia Minor make these deposits; and bars and external banks being allowed to form, the character of the coast is often affected. In this way alterations occur in the relative positions of places, which puzzle geographers in their attempts to reconcile differences.

In the survey of Captain Beaufort, we have every evidence of the former grandeur of this southern country, of the number of its cities, and of the extent and excellence of its bays and harbours. So changed and degraded are its cities in these days, that their existence now presents only a scene of listless inactivity. During the winter they reside on the coast, in a number of little huts, which are usually crowded together.

They frequently lead a course of lawless violence in open opposition to the Porte, and are described as especially suspicious and inhosiptable to Europeans.

A most remarkable feature of Asia Minor is its fresh and salt water lakes. The sea is formed by the being formed by the parallel ranges between the Mediterranean and the opposite Euxine, and these being often connected by transverse channels, cut up the coast into an immense number of longitudinal valleys, deep gorges, high plateaux, and low basins. Thus the fresh water rises from the mountains, like many of the higher levels of the south, and the west, the Bithynia, the region of the fresh-water lakes, contains five large and beautiful lakes besides smaller pieces of water; of these the Ascanius (to be distinguished from a southern lake of the same name,) though now reduced to a mere pond, is still beautiful; at its eastern extremity stands Nicom, celebrated in ecclesiastical history for its great council.

A few remarks are necessary on the existing roads in the interior of Asia Minor; but not in the European acception of the term, as they consisted of the own from any central em- the empire of the Turks. Asia Minor still presents remains of the Roman lines of communication; and of the Roman bridges many yet in use. Relays of post-horses were established on each by intervals.

They are principally stationed at the large towns of the leading routes. The most frequented road is that from Smyrna to Constantiopole, and the only one by which there is a regular communication, except by caravans. Important is it to the commerce of the whole of Europe, this correspondence takes place both twice a month, and is managed by the Austrian mission and consulate, which, as well as the Russian, despatch, at stated periods, a post to the European capitals. The Porte keeps in view the maintenance of these, by the number of whom they make all their communications. On a small scale every pasha has a similar establishment. The route from Smyrna to Constantinopole passes over the rugged tops of the Sipylus to Magnesia at the foot of the mountains. Presently it leaves the high road, and passes within sight of Thysdrus to the east. This is a considerable place, and contains a large Greek population. Its size is about that of Magnesia. Much cotton is grown in the neighbourhood. The valley of the Caicus is then crossed: the direction of the course being constantly north with a slight bearing eastward. The country displays a remarkably bold outline and every capability of fertility, though little favoured by the hand of man. The land journeys of the great caravans, the daily of the traders, the route of post-horses, the roads of the Lacedemones, the roads of the Moslems, the roads of the Christians, the roads of the barbarians, all combine in the appearance of the Caria. In Turkey, the traveller is frequently astonished amidst the general desolation at the extreme care manifested in keeping up the tanks and fountains, stationed at convenient distances. The burial places are always placed near to some sacred spot, more as a memorial of art than the habitations of the living. Both the khans, where travellers are received, and the mosques, but too frequently betoken the ruined state of the country. No exact road has been described.

The route traversing Asia Minor from north to south, that from Constantinople to the southern pashalis proceeds from Moudania to Brussel, already mentioned, and by its beautiful and fertile territory across the range of Olympus, to Kus- tifya, formerly Koyceum on the Thymbrius, the residence of the beylerbey of Ancyra. Both pasha and beylerbey are of a very trifling extent, being a little country, bounded by a fertile plain to the south. It is a large place, and though not so flourishing as formerly, still contains 50,000 or 60,000 people, of whom 10,000 are Armenians carrying on a profitable trade, and about 10,000 that number Greeks. Kinneir, between Kusifya and Konieh, visited Aphiwm-Kara-Hissar. Another route, entirely by land, leads from Constantinople to Konieh, through Isnik (Asarna) and Eski-Shehr, by means of the most important, watered by the Thybrurus, and now, as formerly, known for its natural hot baths. The two lines join at Kuta- yea, the ancient Ionium, the seat of government of a pasha of three tails, was the residence of the sultans of the Seljukian dynasty. It contains about 50,000 inhabitants, and has little or no trade, the territory being much neglected. To the east are extensive marshes. The plain of Konieh is considered the largest in Asia Minor, and according to Leake, presents an uninterrupted level of the finest soil, quite uncultivated in the immediate neighbourhood of some widely-dispersed villages. Another characteristic of these Asiatic plains, he says, 'is the exactness of the levels, and the peculiarity of their extending without any previous slope to the foot of the mountains, and the islands of the ocean. Proceeding to the chain of Taurus, Leake passed Karaman, a poor, and greatly reduced town, and ascended the mountains in the direction of Mout (Claudio- polis), a place wretched in itself, with a yet more wretched prospect' from the foot of a precipice, where it appeared to the traveller, that the highest mountain near the pass must have a height of between 6000 and 7000 feet. Thence the route led down to Gulner, or Celenderis, in Cilicia, and reached the Aegean sea.

Another route, advancing in the same direction from the Bosporus, at Eski-Shehr pursues an exact eastern course, and reaches Angora, through a country everywhere in fested with tribes of Turcomans. Angora (Ancyra) is the seat of the government of the Province of Angora, famed for its fruit, and produces goat-hair nearly as fine as silk, which is made into camel. Angora has fallen from its importance as a place of trade. Pococke, an old traveller, calls its population 100,000. Kinneir states it at 20,000. Both accounts may possibly have been correct, but a recent change is a probable consequence of the misery of Turkish rule. Kinneir tells us, that the valuable Angora goat is only to be found within the boundary of Wulli-klan, to the west, and the Halys, to the east. It immediately deteriorates on leaving this, but to the south, in the kingdom of Smyrna, is covered with Turcoman encampments. These people pay no tribute to the Porte, which is without power to enforce it, or to rid the country of them. From Angora, Kinneir proceeded to Osocat, the capital of Chapuan Oglu, a great Turk, who has a race of little men, about 3 feet in height, but now probably, since the destruction of the family, in utter ruin. Hence a route leads past Kesariah to the celebrated pass of the Taurus, known to the ancients as the Pyli Cilicie, where the Romans had a military station, to protect the position. But the regular road to these defiles from the Bosporus, and the north-west of Asia Minor, is much more direct than by Kesariah. Having reached Angora, it proceeds in a course far to the west of the other line, and reaches Tarsus, formerly Tarsus Dei, in the east, and from thence to the north, by the route leading entirely overland from Constantinople to Kesariah, by Irnikmied, Angora, and Kir-Shehr, the great caravan, which is annually formed at Scutari, proceeds to the east for the purpose of taking the pilgrims of the capital, and for the purpose of its wealth. From the west, the caravan proceeds to Damascus, from Damascus to Medina. From Smyrna, two great trading lines proceed. The caravans frequently the first, march in a direction due east to Allah-Shehr, (Philadelphia,) at the northern base of Tarsus, and are known to have a revenue of from 6,000 to 7,000,000. Hence they proceed by Afurat, and cross the Euphrates near Konye, carrying the manufactures of Europe and colonial produce into the heart of the country. From Philadelphia, a route proceeds across the Ak-Dagh, or White Mountains,
(the ancient Messogis) to Adalia, on the Pamphylian sea. It passes by Hierapolis. The town is a mass of grand ruins; and Arundel tells us 'that the road up to it is at the eastern end a petrification, overlooking many green spots, vineyards, and gardens, separated by partitions of the same material.'

The other line of trade, direct south of Smyrna, crosses the valley of the Caystrus, and proceeds to Gexil-Hissar, the ancient Tralles, a large and important place in the rich and fertile plains of the Macedonians. It is said that between such a town as this could not fail to have a large population. Though subject to malaria in autumn, it is supposed to contain from 20,000 to 40,000 people. The trade consists chiefly of corn, flax, and fruit. The road proceeds through the fertile plains of Melas (Mylasa), famous for its produce of tobacco, amongst the best grown in Turkey. Taking a south-eastern direction here, this line ends at Patarea in Lycaea. Since the commencement of the Greek war, all the trade of the western and southern parts of Asia Minor to the markets on the Black Sea has been conducted by the internal lines of communication; the sea having been literally swept by the cruisers and pirates of all the small vessels engaged in commerce. Other roads besides those mentioned have at various times been followed by the carriages of the adjacent seaport, the Meander, and continues along the north side of Taurus and through the lake counties to Konieh, which is a great central point towards which the routes leading to the Plym. Cilicia necessarily tend. The route usually followed by trade is from Upper Paphlagonia, through Kara- Hissar, Tocat, Abaris, Osmanjik, the forests west of Boli, (see Morier's Travels, p. 328,) across the Sayangris to Ismikmad, the ancient Neo media, and thence to Scutari on opposite Constantinople. The mountainous character of the country and the distance being navigated by small vessels during more than six months of the year, and this facility of water-carrying bestows commerce upon the north-west coast of Asia Minor.

No general description would convey a correct idea of the climate of Asia Minor, which presents probably more varieties than the peninsula of Spain and Portugal, with which we have compared it as to extent of surface. The climate of Asia Minor is far more uniform than that of Spain, where there are many mountains, which traverse the high plateau, and in the variety of climate depending on the configuration of surface, there is a considerable resemblance between the two countries. The climate of both is also materially affected by the adjacent seas. The western shores of Asia Minor occupied by the Greek colonies, and known by the ancient names of Adiars and Ionia, have been celebrated in all ages for their genial climate, and for the fertility of their valleys. The summers here, as generally through Asia Minor, are long and dry, and even in the most northern parts of the country, the local situation does not allow the passage of a free current of air. Smyrna, owing to its situation, is never considered a healthy place. But even on the west coast severe cold is occasionally felt in winter, and neither the southern latitude nor the proximity of the sea has prevented the same effect of the immense masses of high land which lie to the north in Europe, and to the east in Asia. The snowy peaks of Taurus continue even to the valley of the Meander on the south side. The high plains of the interior are described as excessively cold in the winter season, though of their absolute elevation no certain statements appear to exist. The contrasts sometimes exhibited between the high regions and the adjacent lower valleys are such as characterise all countries which possess a similar character. At Siwias (Sebaste), says Fontanier, 'the plague made no great progress, owing to the salubrity of the air, the proximity of the high mountains, and the elevation of the plateau on which the town stands. It is not so at Tocat, where the climate is more humid, and our writer says, 'when we carried on, but at Siwias they are obliged to import fruits and grapes, which will not grow there. Yet Tocat is only twenty hours' journey N.N.W. of Siwias, and though it lies in a deep valley of the Ira, is still considerably elevated above the shores of the Black Sea.

The general effect of great elevation upon vegetable productions, even in southern latitudes, and the application of this principle to the physical structure of Asia Minor, were well observed, 'It is not at all surprising that the elevated and mountainous parts of these countries (he is speaking of Bactrian and Aria) are cold; for even in southern climates mountains are cold, and in general all elevated surfaces are cold, even if they be plains. Accordingly the parts of Cappadocia on the Euxine are much farther north than those bordering on the Taurus; but Bagara, a plain which lies between the sea and the Taurus, has hardly any fruit trees, though it is farther south than the borders of the Euxine by 3000 stadia. The vicinity of Sinope, Amius, and Phanaros, on the contrary, for the most part, allow the culture of the olive. (Casuall. p. 72.) Carabine is spoken of as being taken about the 310th stadia: the distance is not so much.

The northern shore of Asia Minor being exceedingly humid, parts of the mountain slope, from the edge of the sea, are covered with moss and forest, and as the route proceeds towards the extremity of the peninsula and the borders of the Black Sea, they present a great variety. The forests, stretching west from Boli, the great and almost inexhaustible source of supply to the Turkish navy, contain ash, elm, plane, poplar, larch, beech, and some oaks of large size. (Morier, p. 359.) It is the sea to the latitude of six and seven hundred feet, a character very different from that of the north side of the peninsula. The amount of rain is much less, and the summer heat of the coast is often excessive. Unlike the northern shore, which appears to be well watered, the south-western parts of the Lycian coast, where the mountains press close on the sea, have no water from April to November, but what they can keep in reservoirs. The winter torrents cease with the rains. (Beaufort's Karahormia.) The mountains of Asia Minor are mainly supplied with water from the sea. The timber of this coast, at least near that shore, is mainly pipe, but not in general of large dimensions. The mountains of Taurus contain a great variety of forest trees and shrubs. (Leake, 1817.)

This country, has, no doubt, some parts been the seat of violent volcanic action, though perhaps not within the limits of authentic history. Volcanic products are abundant in the peninsula; and the Greek name Katoecavokari or burn, which was applied to the district on the coast of Lydia and Phrygia, and especially to the historical record of those great physical revolutions. The western part of Asia Minor has also often experienced most destructive earthquakes, which have not only shaken the country from Sardes to the valley of the winter and summer sea, but have changed the whole aspect of the district of the Troad, and Cynus. (See Thucyd. vi. 41.) The country in which the earthquakes were most violent in antient times is the same which Strabo describes (p. 578) as the Burnt Region; of the country near the Meander, he says in his usual obscure manner,— 'neither can it be said that it is subject to earthquakes, and is buried under by channels full of fire and water as far as the interior of the country.' The whole western part of Asia Minor is full of thermal springs; they are found also at the junction of surface, and up to the river head. Of the rocks of this peninsula we possess but little information from travellers, though, perhaps, no country in the world would better repay the labours of a skilful observer. The great interior range of Taurus has never yet been described; it shows itself at almost every point, the rivers also being bordered with culcious, and, like the streams of other countries where limestone prevails, are found unfit for drinking. The bold limestone cliffs are generally of a white colour; those of Caviestone, of white marble, rise perpendicular from the sea. (Cavilstone, p. 127.)
Beaufort has given a sketch. On the low parts of the shore a breccia, compound of gravel, sand, and fragments of quartz cemented in a calcareous paste, sometimes presents a hard yielding beach. The singular effects produced by the rapid deposition of calcareous matter are noticed by Captain Beaufort at a place on the coast called Laara, near the outlet of the river Carcharhantes, and he refers for similar instances to Chander's description of the petrified cascade at Hierapolis in the valley of the Menderes.

The quarries of the Lydian kingdom were overlaid in the high ranges on the north side of Asia Minor; and, according to M. Fontanier, the mountains which bound the east side of the valley of Siswas exhibit calcareous rocks at the base, covered on the south slope by enormous masses of gypsum, in which dead lime, as far as it extends, forms countless caverns; the waters, loaded with sulphate of lime, run off along the calcareous mass beneath, and, forming a lake in the plain of Siswas, discharge the dissolved streams into the hitherto pure waters of the Kizil Ernak. In the mountains on the route from Kara Hisar to Siswas this traveller observed, between Andras and Tchiiftikli, the limestone of the Pyrenees alternating with serpentine; above the older limestone he remarked a marly recent formation containing a great deal of earth, which had taken a westward course from between Siswas and Tocat, we remark the prevalence of limestone, though other rocks appear also; and the same may be remarked of the neighbourhood of Amasia. In going on the west route from Amasia, Fontanier remarks between Maltab and Aca, the present descent of the road; the word granite is often rather vaguely used, and as the information does not go beyond what we have stated, it is difficult to know exactly what is meant. Malte-Brun's remark, that the quarries of Siswas are in the Molostai, with nothing but granite rocks, is absurd, and contrary to well-known facts. In the neighbourhood of Tossia, west of the Halys, and on the route to Constantinople, Fontanier marks his 'secondary limestone and chalk.' The mountains near Tell-Holl, the ancient Hadyropolis, which lies farther west on the same route, are of a white calcareous material, with veins of black, and susceptible of a fine polish. (Fontanier.) In fact we may trace the limestones of Asia Minor from the neighbourhood of Trebizond and Akkerman on the northeast, to the Euphrates, which derives its denomination from its quarries of marble. There is no doubt that Asia Minor presents one of the most extensive deposits of calcareous matter in the world. The marble quarries of Smyrna, from which the wealthy Romans imported large blocks to their capital, are in the very centre of the peninsula at the north-western extremity of the basins of the interior lakes.

Asia Minor abounds in mineral wealth, as we know both from its commerce, and from its commerce at the present day. The Chalybes, in the north-east angle, near the coast, were known in the earliest ages as the workers of metals; and the same region is still the great mining district of the peninsula. But it is only in the mountains of the northern portions of the peninsula that we are acquainted with the working of mines; nor, as far as we know, do any writers speak of them in the great southern range of Taurus, a region that belongs to the terra incognita of the world. Copper is worked near Trebizond, Siswas, Niksar, Amasia, Samosun on the Black Sea, and numerous other places. Fontanier mentions a mine also at Maden in Karamania. Lead in combination with silver is found at Gurcouch, Huseinabad and other places (Fontanier, p. 254); and lead not without silver is found in the north-western mines of the great branch of the ancient Iris. Unich on the coast east of Samosun exports rock alum: in the time of Strabo the cinnabar mines of Olgassy were worked, though we believe they are now no longer known; and the gold mines are principally deposited in the mines of Timouls once helped to fill the treasures of the Lydian kings.

The political history of Asia Minor forms a large chapter in the history of the world. Its position has been, from the first, a principal cause of its perturbation; its close connection with the sea has rendered it the theatre of numerous struggles for sovereignty; its extent of sea-coast at one epoch developed its maritime capabilities, and the diversified nature of its surface has in all ages saved many of its inhabitants from being overwhelmed with Turcoman and Pagan invasion. It is interesting to us that in his day (between n.c. 488 and 490) this peninsula contained thirty nations (Sweas), which attested the numerous revolutions it had already undergone.

Though there might not be thirty peoples essentially distinct in physical character and language, we can have no doubt that conquest and colonization had in the time of Herodotus given this country as varied a population as it now possesses. The Phrygians claimed the highest pretensions to antiquity of any of the inhabitants of Asia Minor; next to them the Lydians, under Croesus, became the rulers of the country from the Aegean to the Halys, at that time the western boundary of the empire of the Medes. But the Persians, who had occupied a large part of the western coast of the peninsula, and established themselves firmly along this seaboard. In course of time the colonies of this nation spread northward along the shores of the Propontis, and the Aegean Sea, and the Bosphorus; and the Greeks from European Greece had occupied a large part of the eastern coast of the peninsula, and established themselves in a similar manner along this seaboard. In course of time the colonies of this nation spread northward along the shores of the Propontis, and the Aegean Sea, and the Bosphorus; and the Persians, who had occupied a large part of the eastern coast of the peninsula, and established themselves firmly along this seaboard. The Persians, who had occupied a large part of the eastern coast of the peninsula, and established themselves firmly along this seaboard. The Persians, who had occupied a large part of the eastern coast of the peninsula, and established themselves firmly along this seaboard.
the numerous authorities referred to by both; Fontanier, *Voyages en Orient.*

A **ANA** town of western Greece, or antient Asia. It is built on a rocky island in the midst of the lagoons, or salt-marshes, which form part of the gulf of Mesolonghi, 38° 40' N. lat. 21° 35' E. long. It surrendered in March, 1826, to the Egyptian troops under Ibrahim Pasha, and its capture, together with that of the islet of Vassilada, which was the advanced post of Mesolonghi, contributed to the fall of the latter place, which happened in the following April. The inhabitants of Anatolico, about 2000 in number, were sent free to Arta, in Epirus, and were allowed to retain them only by paying a certain sum they could carry. Anatolico belongs now to the new kingdom of Greece. The fishermen of the lagoons of Anatolico use canoes, which they call monoxyla, (single pieces of wood,) formed of the hollow trunks of trees.

**ANA** from a Greek term (αισθανέω), which literally signifies ' the separation of a thing into parts by cutting; ' the term anatomy is used to signify, particularly, dissection, or knowledge acquired by dissection. Anatomy is at once an art and a science; a number inasmuch as the pursuit of it requires skillful manipulation; and a science, inasmuch as certain general principles are deductible from it. The object of anatomy is to ascertain the structure of organized bodies. Of the two great kingdoms of nature, the inorganic and the organic, it comprehends the range of the latter. Like the organized kingdom itself, it forms two divisions, the one including the structure of plants—vegetable anatomy; the other the structure of animals—animal anatomy. Animal anatomy is divided into human and animal, human anatomy includes an account of the structure of all classes of animals, excepting that of man; human anatomy is restricted to an account of the structure of man only. Human anatomy is subdivided into descriptive, general, and pathological. Descriptive anatomy comprehends a description of all the various parts or organs of the human body, together with an account of their situation, connexions, and relations, as these circumstances exist in the natural and sound, or, as it is technically termed, the normal and perfect, condition of the body, The subject, for example, is composed of a number of membranes, which are united in a particular manner; a number of blood-vessels which are derived from particular arterial trunks; a number of nerves which proceed from a particular portion of the brain and spinal cord; a number of absorbent vessels, and so on. The human body, then, is always taken in a particular cavity of the body, and is always found to have certain specific connexions or relations with other organs. The anatomy of the human body comprehends an account of the particular organs of this kind, which are uniformly found to concur in all human bodies in which the conformation is regular or natural; and so of every other organ of the body: and because such an exposition of the structure of the body includes a description of all the circumstances that relate to their organization, it is called descriptive anatomy.

After the study of the human body in this mode has been carried to a certain extent, with a certain degree of success, it necessarily gives origin to a second division of the science, that termed **general** anatomy. It is found, that many of the circumstances which belong to any one organ, belong at the same time to several organs; and that thus several individual circumstances are common to many organs, or organs themselves, for which, although it had been stated that the stomach is composed, some are common to it and to the intestines, to the bladder, to the uterus, to the air-passages, and so on. In like manner with respect to any one of those membranes, when its structure is carefully examined, it is found that in many points its organization is exactly similar to that of all other membranes. This view extended leads to further important and interesting results. All the arteries of the body, whatever their situation or functions, are found to be of the same substance, disposed in nearly the same order and form. All the veins have, in like manner, a structure essentially the same. All the absorbent vessels, all vessels of every kind, all the bones, muscles, and nerves, the whole external organs, and of the body, are found to be of the same substance, disposed in nearly the same order and form. The various organs of the body are divided into what are called common systems, and these common systems are said to consist of common substances or tissues. All the vessels, for example, are collected and arranged under one common class. All the organs, in like manner, all the bones are collected and arranged under another class, called the osseous system; all the muscles under another, called the muscular system; all the nerves under another, called the nervous system, and so on. The material that enters into the composition of each of these systems consists of a substance of a peculiar nature; but as this substance is more or less generally diffused over the whole body, entering as a constituent element into the various organs, it is termed a common substance, or tissue. It is obvious that it is only from the connexion and thus, the structure of the body, analysed in this mode, innumerable and complex as the substances appear to be of which it consists, is ultimately reduced to a very few simple materials, by the combination and modification of which all the different animal substances are produced. That part of anatomy which displays those common substances, and which describes all that relates to these differences, analogies, combinations, and so on, is termed **general** Anatomy. Descriptive and general anatomy, then, includes the whole of the subject. It comprehends an account of all the parts or organs of the body as they exist in the state of health; general anatomy comprehends an account of all the separate substances of which these organs are composed, not as these substances exist in the body, but as they exist in the individual organs, and in the state of health. It comprehends an account of all the changes of structure produced by disease, whether in individual organs, or in the primitive or common substances of which these organs are composed. It comprehends an account of all the diseases of the body.

The object of anatomy is to ascertain structure; it is the object of physiology to ascertain function. An organ is constructed in such a manner as to fit it to perform a certain action; the action cannot be understood unless the structure be known; and, often, the structure cannot be known without directly leading to a knowledge of the action. Until the art of anatomy began to be cultivated, the science of physiology was without existence. In proportion as anatomy has been practised, physiology has advanced.

2. In the second place, anatomy and physiology are the basis of the science of medicine. Disease, which it is the object of the physician to detect and to cure, is denoted by disordered function; disordered function cannot be understood without a knowledge of healthy function; healthy function cannot be understood without a knowledge of structure; and structure cannot be understood unless it be examined. The organs in which the most important functions have their seat are in all cases placed in the interior of the body, and are completely concealed from the view. There are no means of ascertaining their situation and connexion, much less their nature and operation, excepting that of inspecting the interior of the body. As the function of each organ is usually confined within a certain space, which is placed in the interior of the body, so those internal organs are also the seats of the most frequent and fatal diseases. Consequently, an accurate acquaintance with the situation of these organs is indispensable in order to ascertain the seats of disease;
out as these organs are completely concealed from the view, it follows that their situation cannot be learnt without the study of anatomy. In several regions of the body, organs the most different in structure and function are placed close to each other. Diseases the most diversified, requiring not only not the same, but opposite treatment, may consequently exist in the same region of the body. Without the accurate discrimination of these diseases, it is often impossible to save life; but the discrimination of them is rendered impossible by the want of a knowledge which the study of anatomy only can impart.

It has been justly observed, that one consideration, which shows in a striking light the importance of anatomical knowledge in leading to the detection of disease, is, that the seat of the disease is often separated from the point of exit of the vessel. In disease of the liver, pain is generally felt at the top of the right shoulder, because a nerve which goes to the liver is united with a nerve which supplies the shoulder. In disease of the lung, there is often no pain in the lung, but much uneasiness at the top of the windpipe. In disease of the hip-joint, there is often no pain in the hip, but severe pain at the knee. In all these cases, the attention is apt to be carried away from the real seat of the malady. Even in diseases which are treated by surgical means, remedies to the seat of the pain, wholly ignorant of the true seat of the disease: mistakes of this kind, often fatal, are inevitable without a knowledge of anatomy, while with that knowledge they are scarcely possible. It is true, that to be thus obviously important to the physician, it is still more manifest that it must be indispensable to the surgeon. Without a minute and exact knowledge of the structure, situation, and relation of the parts, the surgeon is often at a loss to know what is the proper practice of his art without the most imminent peril. Many opportunities will occur in the course of this work of illustrating this truth; but perhaps the most striking proofs of it are afforded under the heads AMPUTATION, AEVURISIM, HEMORRHAGE, HERNIA, and LARYNGOMMA. It has been justly stated, that no one can form an adequate conception but those who have witnessed it, of the confusion and terror occasioned by the sight of a human being from whose body the blood is gushing in torrents, and which none of the spectator is able to check. The operation is one thing proper to be done, the prompt performance of which is generally as certainly successful, as the neglect of it is inevitably fatal. It is impossible to conceive a more terrible situation than that of a medical man who knows not what to do on such an emergency. But the ablest surgeons were constantly placed in this situation; and the dread inspired by it retarded the progress of surgery more than all other causes put together. Not only were they prevented from employing those facilities of external pressure, which experience has proved to be capable of safe and easy removal, but in general they were afraid to cut even this the most trivial tumour. They never thought of amputating until the limb had mortified, and the dead had separated from the living parts; and being ignorant of the means of stopping hemorrhage, they were afraid to cut into the living flesh. But surgeons now know that there is one simple and effectual means of stopping hemorrhage, namely, compression of the bleeding vessel. If pressure be made on the trunk of an artery, though blood be flowing from a thousand branches given off from it, the bleeding will immediately cease. Should the situation of the artery be such as to allow of effectual external pressure, nothing further is required; but if it be too remote to admit of the ligature being stauched at once: should the situation of the vessel lie beyond the reach of external pressure, it is necessary to cut down upon it, and to secure it by the application of a ligature. Part may be pardoned for supposing that he who had to do with the life and death of man, would be possessed of the inspiration of the Deity. By means of it the most formidable operations may be undertaken with the utmost confidence, because the wounded vessels can be secured the moment they have been cut. In this situation, bleeding is stauched at once: should the situation of the vessel lie beyond the reach of external pressure, it is necessary to cut down upon it, and to secure it by the application of a ligature. Part may be pardoned for supposing that he who had to do with the life and death of man, would be possessed of the inspiration of the Deity. By means of it the most formidable operations may be undertaken with the utmost confidence, because the wounded vessels can be secured the moment they have been cut.
with the disease in producing death. The great distinction between the enlightened and the ignorant physician is, that the former knows the state of the internal organs, and adopts his remedies to that state; while the latter knows nothing of the morbid processes that are going on, and prescribes for a fancy or a name. Compare, in like manner, the knowledge which enlightened physicians now have of the diseases of childhood, with the obscurity in which the disease of old age is shrouded in its less culpable involvement. The same process of dissection, as an example, the knowledge now possessed of the true nature of a malady which used to be exceedingly frequent and almost uniformly fatal among children, namely, water in the brain. A child dies without or scarcely whilst at play. A child has been proved to die in the child's century or in the physician was sent for in alarm. He found the child restless, irritable, flushed, constantly moving its head on the pillow, the skin hot, and the pulse quick. In a few days the pulse became slow and intermittent; the child from being in a state of constant restlessness, attended with an occasional sudden shriek, fell into stupor; vomiting was often superadded; and in a day or two more, the pulse having become again extremely rapid, the child expired in convulsions. Such is the brief history of the attack, progress, and termination of a malady which used to destroy hundreds of children, and often individual after individual of the same family. But was the history of the disease really that plain and obvious as it really is? On the contrary, the concourse of symptoms was in fact exceedingly numerous, and their progress remarkably slow. The disease, at the point of time at which the history of it is here taken up, appeared to be seated solely in the head. The head, however, was the point first affected, and the brain suffered entirely in consequence of its sympathy with other and distant organs. The disease commences in the abdomen. The child, long before it gave that ominous scream, had been fretful, hot, feverish, either without appetite or with voracious appetite, and the bowels often alternated with each other; either with a constipated or a relaxed state of the bowels, and those states also alternating with each other, the stools meantime being always unnatural, and in some cases of the Children tumid, hard, bloody. These symptoms, because they did not lay the child prostrate upon its bed, were overlooked, or deemed of no consequence. But at last, from the total failure of all the means employed to save the child when the symptoms of brain disease came on, physicians began to take another view of the matter. They availed themselves of every opportunity they could obtain of inspecting the bodies of the children who died of this terrible malady. In the brain they found water indeed, but often only in very small quantity, and something, as they thought, water. There were always signs of inflammation, and, in general, signs of recent and active inflammation, in contradistinction to the signs which denote inflammation of a slow or chronic nature. On looking over, they found even more striking appearances of disease in the abdomen; appearances which denoted a disease of a slowly but constantly progressive character—the source of irritation to the whole system—an irritation not perceptibly yet uniformly increasing day by day. The real nature of the malady was now discovered. The first appearances of disease were observed; the disease was attacked before it had time to be developed; the remedy was applied to the true seat of the malady, the head, and not to the abdomen, which as yet remained unaffected. Under early and judicious treatment, the head thus almost always remained unaffected; and now water of the brain in children is an exceedingly rare disease, hardly ever coming on but in neglected cases of disordered bowels—cases neglected on account of a more than ordinary degree of ignorance or inattention on the part of the mother or the nurse. This is an example of the manner in which an examination of the body, after death, has led to the detection of the true seat and nature of diseases; and it is sufficiently remarkable that there might be a disease of almost every disease, the seat and nature of which are clearly and certainly understood. It cannot be necessary to say more in illustration of the necessity of an inspection of the body in the case of death. The examination to the dissection of the human body, which has hitherto prevailed in all ages and nations, is one among the many and grievous evils inflicted on man by superstition. It is the progress of civilization to change this aversion into respect and gratitude. A remarkable proof of this has been recently given by the legislature of our own country. The British legislature had already acquired a bad notoriety among the civilized nations of Europe, for allowing the continuance of a barbarous practice of a barbarous age—for permit the lowest rank schools of anatomy to be supplied with subjects for dissection by the odious means of exhumation. At length Scotland, first, and afterwards England, gave an appalling lesson to the government of the consequences that sometimes follow its own example. It was proved that the disease had undergone its revision only two months before his death. (June 1506.) and that this part of it was again deliberately and solemnly convicted, and the body delivered to his physician, with the advice of a diocesan and friend, who had delivered a public lecture over it; the body was then used in the inspection of a course of lectures in the chair of anatomy; the skeleton and head, together with several of the organs, were preserved, the two last constituting one of the most beautiful preparations ever made.

* By a will, dated as far back as the year 1729, Mr. Bentboth, then a young man, left his body for public dissection. The reason at that time for this extraordinary act was, to enable the following names nearly any; while of his desire, having hitherto had small opportunities to contribute thereon; not being satisfied with the view of the malady, he had undergone his revision only two months before his death. (June 1506.)
Confining ourselves to this point of view, we shall endeavour to exclude a few very general, and consequently imperfect, notions, of the principal classes, as they are conceived by the naturalists, and are applied to a systematic arrangement of the animal kingdom.

In its connexion with zoology the universal knowledge of animal structure is properly called comparative; for it is the aim of the science, as far as it can, to establish their analogies in organization, which are to determine the separation of the vast number of beings that compose the animal kingdom, into classes, orders, and species. Without a knowledge of anatomical structure, at once the most minute and the most extensive points of view, to which attention may be directed in the classification of species; and if we follow the history of systematic arrangement, we shall find that it began with the rudest and most empirical divisions, and did not assume the precision of a science until a knowledge of the organs of the classes and orders was attained, and the mere observation of the functions of animals without reference to their organs. The most ordinary observation of mankind would enable them to arrange animals into three great classes, according to their faculties of locomotion, and the general character of the place of their movements; and thus all beings would naturally be divided into those which swim in the water, those which fly in the air, and those which only walk on the earth. A more precise investigation would, however, show extreme differences between the groups possessing the same sphere of locomotion. For instance, the great external differences of structure and habit would point out, amongst the inhabitants of the air, the necessity of forming two distinct groups, birds and insects; and the same considerations would probably lead to the formation of similar classes, or at least of families, in the class of animals which walk on the earth. This observation of actions became connected with the observation of external organs: it was found that a large group of animals could be separated, and the animal world according to the number of their feet—from the birds which possess two feet, the insects which possess six, and the serpents who move without feet—by the name of quadrupeds, or four-footed. It was thus that the five great classes were established, of quadrupeds, birds, serpents, fishes, and insects.

When zoology assumed the character of a science, and ceased to be only a crude collection of isolated facts, (and this was not attempted before the labours of our own illustrious Ray,) it was gradually perceived, that the most important class, that of quadrupeds, was a very unsatisfactory division. A cow was a quadruped, and so was a tortoise; but the one was covered with hair, the other with scales; the one produced its young from the female, and nourished them, the other laid eggs. For some time these distinctions were not reconciled, till science stepped in with the distinction of viviparous quadrupeds, and oviparous quadrupeds. In the first editions of the Systems of Nature, Linnaeus thus divided the class of quadrupeds, into viviparous and oviparous, (since changed for reptiles, and including serpents and oviparous quadrupeds,) fishes, insects, and worms. Nearly twenty years after the system of Linnaeus had been given to the world, Brisson, a distinguished French naturalist, separated the cetaceous animals, or whales, from the fishes, and placed them next to the viviparous quadrupeds. He saw the anomaly of classing them with fishes, knowing that they suckled their young, and were in many other important characteristics of organization similar to the highest class in the animal kingdom. Linnaeus acknowledged the importance of the distinction, and he even carried the principle farther than Brisson. He rejected the old division of quadrupeds, which excluded man at one extremity of the scale, and the cetaceans at the other; he adopted the name mammalia, which, expressing the mode in which the young of viviparous animals are nourished, makes this great distinction determine the first class of the animal creation.

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In attempting to estimate the importance, and to point out the peculiar character, of a system of classification of the animal kingdom founded upon comparative anatomy, it will be impossible for us to enter into any minute details, interesting and instructive as they might be, which have reference to the distinctions of species; but it may be desirable to take a rapid view of the leading principles of the larger zoological arrangements.

The division of vertebraed animals is one which very happily marks a chain of affinities, connected with the gradual development of the highest organs and functions. The vertebral column, the means of support and locomotion of the animal, is, with one exception, a skeleton: it supports the head; and the canal, which passes from one end of it to the other, incloses the common fasciculus of the nerves, which communicates with the nerves of the circulatory system. When reduced to the smallest vertebrated animals, the skeleton no longer exists; the bony substance is altogether wanting, or is external, instead of internal; and the nervous system assumes an entirely different character, till it is gradually lost in the mere irritability of the lowest classes in the scale of animal life.

The organization of the first class of vertebraed animals,
### THE ANIMAL KINGDOM—ARRANGED ACCORDING TO THE SYSTEM OF CIUVER.

<table>
<thead>
<tr>
<th>Division</th>
<th>Kingdom</th>
<th>Phylum</th>
<th>Class</th>
<th>Order</th>
<th>Family</th>
<th>Representative Species</th>
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<tbody>
<tr>
<td>Division I</td>
<td>VERTEBRATA</td>
<td>Tetrapoda</td>
<td>Reptilia</td>
<td>Squamata</td>
<td>Pythonidae</td>
<td>Cobra</td>
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<td>Division II</td>
<td>MOLLUSCA</td>
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<td>Buliminida</td>
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<td>Snail</td>
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<tr>
<td>Division III</td>
<td>CHITINOPODA</td>
<td></td>
<td>Pteropoda</td>
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<td>Pteropod</td>
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**Section I:**
- Compound eyes placed on pedicels and movable.
- Eyes small or immovable.

**Section II:**
- Entomostraca, divided into 8 Orders.

**Class I:**
- Echinodermata (Echinodermata) including Two Orders.

**Class II:**
- Intestina (Tarentina) including Two Orders.

**Class III:**
- Aculeata (Aculeata) including Twelve Orders.

**Class IV:**
- Insecta (Insecta) including Thirty-three Orders.

**Class V:**
- Arachnida (Arachnida) including Two Orders.

**Class VI:**
- Infracrustacea (Infracrustacea) including Twenty Orders.
the mammmifers, (mammalia) presents an articulated skeleton, generally much more perfect than that of the three other classes of the same division. The greater number have four articulated limbs, parts of the skeleton; and all have a diaphragm between the chest and the abdomen; a heart with two ventricles containing blood red and warm; lungs filling the cavity of the chest, through which the blood passes in the course of its circulation. These are the only viviparous animals, properly speaking. The distinctions of orders amongst the class of mammalia is in general structure, the blood vessels of the limbs and the teeth. The first five orders possess the common character of having nails at the extremities (Unguliculata). These animals are therefore possessed, more or less, of the power of seizing upon objects. The first three orders of this class are—chiroptera, the seeing the three sorts of teeth; the canine, the incisive, and the molar. But the first order (Bipedia, Man) is distinguished by having hands (that is, four fingers and an opposable thumb) upon the interior extremities; while the second (Quadrumana) have hands at the four extremities; and the third (Carnivora) have no opposable thumb upon either extremity. The fourth order (Rodentia) have no canine teeth; and the fifth (Edentata) no incisive. The latter body is composed of rings; they are the Chiroptera, and the Echidna and the Luminantia. These are unfitted, from the character of their extremities, for seizing upon objects; they employ them only for locomotion. The eighth order (Hipposa) have no hind limbs developed; and their fore limbs being very long, they are supported by the middle finger only, which they are fitted for an existence in the water, although it is necessary for them to breathe above the surface.

The second class of vertebrated animals (Birds) have many peculiarities, both in their parts and in their general characters, and their general habits—much more so than either of the preceding classes. Some have the fore-limbs which distinguish the mammalia and birds; others have the same number of fingers, and others they are wholly wanting. But they all agree in having but one ventricle to the heart; in the coldness of their blood; and in their imperfect respiration, consequent upon a portion of the blood passing through the lungs.

The fourth class of vertebrated animals (Fishes) differ essentially from the preceding classes. The limbs have disappeared, and fins supply their place; the skeleton, in many species, very incomplete. They breathe by gills, or branchial openings instead of lungs; and they have consequently neither trachea, larynx, nor voice. The two great divisions of fishes are the bony and the cartilaginous. In some of the latter, the peculiar character derived from the skeleton of the vertebrated animals has almost disappeared.

When we arrive at the second great family of the animal kingdom, the Invertebrated—when we endeavour to classify that vast series of beings, which, possessing no vertebral column, or skeleton, gradually depart more and more from what may be called the vegetable organization—they are so much possessed by the extreme differences of the organs, faculties, and habits, of particular classes, as by the unbounded variety of the species which those classes compose, that the distinctions amongst the invertebrated zoologists have encountered the greatest difficulties, especially since they have founded their science upon the distinction of anatomical structure. At every step of their knowledge they have felt how much they have yet to know. They have been forced to banish many of the most important principles and facts.

In all this great family of the invertebrated animals, the supports of muscular motion are not furnished by the internal parts of the body—none of the classes or species respire by cellular lungs; none have a voice; and the nervous system, where any exists, has not its middle part enclosed in a cavity of bone. These are the great general distinctions between the invertebrated and invertebrated families. But the distinctions between the three divisions of the invertebrated animals, and the classes even of the same divisions, are so manifold and important, that we cannot attempt to furnish any adequate notion even of the universal characteristics of each of them in each division; and must content ourselves with the most general outline.

The Molluscous division (Mollusca)—the fleshy bodies clothed with a shell—have a true circulation of the blood through arterial and venous vessels; they respire by gills; they have neither fore limbs, nor hind limbs; and their nervous system. Some have the organs of sight and hearing, while others appear to be limited to those of touch and taste. Some masticae their food, others can only swallow.

The Artericulate division (Artericatea), although possessing the common character which is indicated by their name, are so different in other important particulars of their organization, that we must briefly point out the leading peculiarities of each class. The Annelida have a long body, their body is composed of rings; their feet are respiratory; their blood passes through the outer covering of bony or cartilaginous tubes, and a new formation of cells is created by branching. The Arachnida (often confounded with insects) require by narrow trachrea, and, not undergoing any transformations, have always articulated feet, and eyes in their head. Their characteristic division is, they have, in their perfect state, two eyes and two antennae in the head, six articulated feet, and two trachrea, which extend through all the body.

When we descend to the last division, the Radiated (Radiatae) we find some of the classes which appear to be essential to life, as we see them developed in the preceding divisions, do not exist. The nervous system, whether consisting of a spinal cord, or a system of ganglions, totally disappears; the sexual system does not appear to exist; the head, properly so called, is no longer found; and the organ of sense is extinguished. It is unnecessary for us to trace the last degree in the scale of animal life, to that point when the animal kingdom appears to lose itself in the vegetable; and when the investigations of man, however skilfully conducted, are baffled by the minute-ness, as well as the number, of the objects which he desires to examine and to register.

As it may be desirable to refer to the general arrangement by Cuvier of the animal Kingdom, in Divisions, Classes, and Orders, we have given, in the opposite page, a Synopsis of the Table drawn up by M. Achille Coute.

(See Cuvier, Lepin de l'Anatomie Comparée; Cuvier, Oeuvres Posthumes; Blumenbach's Manuel, by Lawrence and Coulson; Lamarck, Philosophie Zoologique; Geoffroy St. Hilaire, Cours de l'Histoire Naturelle des Mammifères; Home's Lectures on Comparative Anatomy.)

ANAXA/GORAS, a philosopher of the Ionic school, born at Claizomenes, one of the Greek towns of Ionia, in the first year of the seventh Olympiad, or in B.C. 500, three years before the death of Pythagoras, and ten before the battle of Marathon. Born both to rank and wealth, he had studied philosophy to discipline his mind, and out of the instructions of Anaximenes. In the twentieth year of his age (that of the battle of Salamis) he went to Athens, where he continued thirty years, engaged in the propagation of his philosophical opinions. He composed in number nine or ten books on zoology, some of which are destroyed. He was the first to distinguish and to mark off, from the opinions of his predecessor, the school of Democritus, I. He obtained the surname of solv (the mind). It is said that he was the first who distinguished between the minerals and the organic. It is probable, unless we understand the first who taught that doctrine at Athens. Of the persecution which drove him from that city, there are different accounts. One is, that he was accused of being in communication with the Persian king, and condemned to death for another, that he was banished for his opinions, and starved himself to death at Lampessus; a third, that he was found
guilty of impiety for his opinions respecting the Sun, and condemned to death, but saved by the intercession of Pericles; while Plutarch affirms that Pericles was his only accuser. Montucla, without citing his authority, says it was for the same reason. The cause of eclipses that he was condemned. However this may be, he departed from Athens, and lived at Lampæcus on the Hellespont till his death, a period of twenty-two years. He died B.C. 426, aged seventy-two.

No works of Anaxagoras have come down to us, nor any of his treatises; but from his opinions preserved to us we might form an opinion of his knowledge. He regarded the heavens as his country, and expressed himself to that effect when reproached for his indifference to his terrestrial birth-place. He is said even to have abandoned his wealth, and his honours from zeal. He was put in prison, where he wrote a treatise on the Quadrature of the Circle; and he also wrote, according to Vitruvius, on Perspective. He is said to have written a treatise entitled Actinographia, which Montucla conjectures to be that identified with the kite.

Among the various opinions attributed to Anaxagoras are the following:—that all substances are composed of their proper parts, which are small and capable of infinite divisibility (see Lucret. i. 830, &c.); that the stars are stones torn from the earth, and set on fire by the aether which pervades the whole upper part of the universe—that the sun is a burning plate or globe, bigger than the Peloponnesus—that the moon receives light from the sun. (Plato says this opinion is anterior to him.) he held that the stars are suspended in air, and that the milky way is the shadow of the earth thrown upon the heavens: others say, he thought it consisted of stars of too feeble light to be seen by day—that the rainbow is caused by the clouds being held as a mirror by its own shadow—that the sun's heat rarefying the air—that earthquakes are caused by the effort of confined air to ascend—that snow is not white, but black (this opinion of his is reported by Cicero)—that the earth is flat, and that its inclination is the cause of the seasons—that the soul has an aerial body—and that sound and echo are conveyed to us by the air. Montucla protests against many of these opinions being supposed to be those of Anaxagoras, but we cannot see with what reason. That they are given by very various and doubtful authorities is true, but there is nothing so absurd in the opinions themselves, compared with others which we know to have existed at the same time, to warrant us in rejecting any one of them on that ground.

He is said, in the seventy-eighth Olympiad, to have foretold the falling of a large stone at Pegæ Potami. [See Aesop. p. 151.] Sixty-two years afterwards, the prediction was said to have been fulfilled before the defeat of the Athenians on that spot by Lysander.

Anaxagoras is the king of the Ionia, successor, and pupil in the Ionic school, of Thales, was born at Miletus in the third year of the forty-second Olympiad, B.C. 610, and died there (as is supposed) about B.C. 547, aged 63. Little is reported of him, except that he was the first who constructed maps of the earth. He could draw a map on which he could lay the latter of which he erected at Spartæ; and that he first discovered the obliquity of the ecliptic. The latter is improbable; though, if he were the first who constructed a gnomon, it is probable that he would also be the first who gave anything like a measure of the obliquity. He is said, on the authority of a passage in an ancient history of astronomy cited by Fabricius, to have maintained the motion of the earth; but as most others assert that he placed the earth in the central region of the universe, Montucla believes that the passage καὶ οὐ περὶ τού τῆς σφαίρας, ποὺς ῥοϊς τὴν ἐνεπενδυμένην καὶ τῆς κατάλθρων τῆς ἐπικεφαλίας ἂν θυγατρική τοῦ οὐρανοῦ, should be read καὶ περὶ τοῦ τῆς καταλθρών ποὺς ῥοϊς. Some say he thought the earth spherical; others that it had the figure of a drum. At Sparta he is said to have predicted an earthquake which threw down the greater part of the city.

The similarity of the names of Anaximander, Anaximenes, and Anaxagoras, who succeeded each other in the Ionic school, has induced many opinions as to who may be considered as by others given to another. It is, however, we believe, said of Anaximander alone, that he believed the sun, moon, and stars to be enormous wheels, encompassing and revolving round the earth, each having a round orifice in it through which the air was let in and out of which the stoppage of this orifice is the cause of eclipses. The latter part of this opinion is also attributed to Anaximenes.

Anaximenes, the pupil and successor of Anaxim-
scribed to various persons. The first anchors were, most probably, what they are now among uncivilized nations, namely, large stones, or crooked pieces of wood loaded with heavy weights. The Chinese, who may be supposed to adhere to ancient forms, are said to use chiefly crooked pieces of heavy wood.

Among the Greeks, the anchor was made latterly of iron. The first anchors had but one fluke; afterwards the other was added; but the anchor was yet without a stock, as appears from ancient monuments, and must have been very incomplete till the stock was added, which may, therefore, be considered as the last step towards the present form. Each ship then had several anchors; the chief one was called proper, or sacred, and reserved for the last extremity. The custom and its proverbial application have come down to us in the expression 'sheet anchor,' but the veneration paid to its name has much declined since the custom of paying 5l. to the master on letting it go was discontinued in the navy.

The number of anchors carried at both the bows and stern of a ship have been finally reduced to four principal, and these all at the bows. The anchors supplied to men-of-war are the best and smallest, the sheet, and the space: these are of the largest size; to which are added, the stream and the kedge, which are used for particular or for temporary purposes, and are usually carried in board. Since there is but small difference in the form of anchors of different weights, the stream of a large vessel serves for the bower of a smaller. The several parts of an anchor are shown in fig. 1.

The principles of the construction may be considered under two heads—the purposes the machine is to fulfil, and the nature of the stock to which it is exposed. We will take at once the modern form to exemplify these considerations.

When the anchor is let go from the vessel's side, whether from a horizontal position of the shank (when it is held by thestem), or from a vertical position (when held entirely by the cat-stopper), as in fig. 1, the heaviest end, or crown, will tend to descend fastest, and the anchor, on having reached the bottom, will, most commonly, fall,—not in the position for holding, but upon the crown and end of the stock, because the stock moves with less resistance through the water in the direction of its length than of its breadth. From this position, therefore, the anchor is to be turned over or cented before it can hold. Now, it is evident that, if the stock were very short, the length of the cable would tend rather to drag the end of the stock along the bottom than to lift up one of the flukes, as must be done in canting the anchor; whereas, if the stock were longer, the cable would act with increased leverage, whatever might be the length of the shank in either case; hence the longer the stock, within the practical limits of stowage, the more certain will the anchor turn properly, and, when hooked in the ground, the more powerfully will it resist any effort to overset it. Also, it is evident that the anchor will turn the more easily as the arm is shorter. In repairing old anchors, it is common to shorten the shank; in doing this, it is the custom also to shorten the stock in the same proportion. This, which is equivalent, in fact, to lengthening the arms, might, if carried to any extent, prevent the possibility of the anchor turning; and this tendency will be diminished when the shank is shortened, the stock should remain unaltered.

The amount of force required thus to overturn any given anchor might be found by calculation, or by actual trial; and it is remarked that the result of the former may be diminished by one-seventh when the anchor is under water.

The anchor being in the position of fig. 2, its weight, supposed to be collected at the centre of gravity, G, (not including the stock,) tends to force the fluke F into the ground; and this pressure on F will evidently be greater, as the vertical line G G passes nearer to F; this pressure is W. A A cos F = f (W = the weight, exclusive of the stock).

As soon as the cable pulls from A, it causes the fluke to catch or hook deeper, that is, it forces the fluke down; and the position of the fluke should be such as to form the angle most favourable for this purpose.

Suppose the arm CF immersed, or the shank lying along the bottom, and the cable acting in the line CA with a tension t; then the pressure on the fluke taking place perpendicular to its surface, draw in the line F perpendicular to the fluke, and draw F P, tangent to the fluke, meeting A C produced in P; then if P represents the position of the cable, F P will be the perpendicular reaction of the fluke, and P F the force which tends to drive it into the ground; draw F H perpendicular to C A, then H F is that part of P F which is perpendicular to the horizon, or is the igon of t; F P = cos a, then F P = cos a, and F H = P sin t = t cos a sin a, which is a maximum when a = 45°; or the fluke should be placed at 45° to the shank. Now, it is remarked by seamen, that when an anchor is once started, it is difficult and often impossible to get it to hold again, and once the anchor is the most urgent of all, it is apparently the one to which the position of the fluke should be calculated.

It would appear, since the weight of a large anchor bears a much higher ratio to any given tension of cable than the weight of a smaller one, that the solution of the problem ought to involve the weight of the anchor, which would give a different angle for anchors of different weights; but it appears from numerous experiments which Lieut. Hodgson has made on the qualities, as well as on the strength, of anchors, and which it is to be hoped will be made public, that an anchor, when dragged, always tends to rise out of the ground, thus following the direction in which the loosened soil affords a free passage,—since, therefore, it will not sink till it rests, and since its weight becomes less effective in pressing it farther the deeper it sinks, while the tension of the cable remains the same, it is thus constantly tending to the most favourable angle (when = 45°) till the arm is entirely buried.

It appears from fig. 2, that in shortening the shank, the fluke, making already in most anchors the angle with the shank, or F P I in fig. 3, too great, will become still more nearly perpendicular to the horizon. In many such cases the pull of the cable will produce scarcely any tendency whatever to sink the fluke; besides which it is to be observed that by lessening the horizontal distance A F, while F G remains the same, the pressure on the fluke is diminished, and thus both accounts the qualities of the anchor impaired.

We now come to considerations relative to the strength of the anchor. It is obvious we have not the means of determining the amount of any of the forces concerned, but long experience has marked pretty nearly the limits beyond
which the dimensions of anchors need not be carried. With these we can determine satisfactorily the preference which should be given to one form over another.

The first strain that comes on the anchor when the cable is strained falls on the ring, which had been often broken or strained, till its dimensions were of late years increased. This pull is conveyed along the shank to the lower arm, which it tends to break off at the greatest distance from the fluke. The thickness of the arm should increase towards the throat.

The crown, which formerly was a circular arc, of late years formed an angle, still changed by Mr. Pering.

The force, first break the arm CF, Fig. 3, is the moment perpendicular to the face of the shank, and, therefore, the force of the cable. And the moment of this force to break the arm CF at C, is as the perpendicular from C on PI. If the arm FC is straightened into F P, and AC in P, then the moment of the same force is as F P, which is considerably greater than before. It would be curious, therefore, to know what reason led to change from the curved to the angular form.

In lifting or weighing the anchor, the cable acting perpendicularly to the end of the shank tends to break it, and hence the thickness of the shank should increase with its distance from the ring; also the breadth of the shank should be downwards, and the like holds good of the arms, the chief dimension of which should be in the plane of the cable and shank, thus opposing the greatest strength to the bending, which are the only strains it is subject to. The cable being thus 'up and down,' the smallest motion of the sea is carried to the anchor, and it is supposed that the chain-cable has thus, from its want of elasticity, frequently broken the anchors. An anchor weighing by the usual methods, the length of the shank, or that part of the shank between the throat and the end of the fluke, is then found to convey any greater thing than increased by: but increasing the length would require an increase of size or strength of the shank, whose length had already been found too great for the strength necessary in the employment of chains; in other words, therefore, to obtain this increased length without either increase of weight or loss of strength, Lieutenant Rodger constructed his patent hollow-shanked anchor. The principle on which a hollow rod or bar is stronger than a solid one of equal sectional area is well known, in order to increase the strength of the anchor within other limits, it may be that the proper notion of the manner in which the difficulties which attended the application of this principle to the shank of the anchor, were surmounted. An account, with drawings, is given in the Report of Patent Inventions of 1850, which states the results of experiments tried at Hawks and Co.'s manufactory, Newcastle; from these it appears that his anchor broke short-shanked anchors of much greater weight without indicating any distress; and similar superiority has been exhibited on other grounds.

Since the fluke from its breadth opposes greater resistance to being disturbed in weighing than the arm does, the axis of rotation will be towards the fluke, and accordingly the greatest amount of weighing force will be less than that displaced by fair pull—and moreover the full-crm or axis being near the throat in direct pull,—it seems that the force to lift an anchor out of the ground will be considerably less than the force sufficient by fair pull to bring the anchor home. Besides these strains to which the anchor is exposed by its office, it is liable to accidents; for instance, an anchor let go on a rocky bottom has been found, on heaving it up, to have lost an arm, which was, probably, caused by its striking against a rock obliquely in its descent; and the same effect would also be produced, and incorporated in the anchor, of a chain broken by a strain. Pering, of an anchor broken by swinging from the wharf against the side of the lighter brought to receive it. Again, the shank has been found broken in the middle, though this does not seem to have been ascribed satisfactorily, whether attributed to the chain-cable or to a sudden jerk; and it may here be observed generally, that the anchor descends much more swiftly with a chain-cable than a hemp one, for the stiffness of the hemp opposes a retarding force, while the greater density of the chain adds a continually accelerating force.

The shank and arms were formerly made of iron bars, welded together;—that this was done very imperfectly appears from the fractures in the old anchors. The arms and shank are generally kept separate, this has been joined together.

A great improvement was made by Mr. Pering, who formed the shank of flat bars, of breadth equal to the depth of the shank, which could be perfectly united. But the greatest of this improvements is considered to be the formation of the arms and part of the shank together, which is done by splitting, or dividing in two, these bars, and throwing the ends back opposite ways for the arms. This opens the angle or arc thus formed, is fixed a truss, and then to this are joined the flukes, and at the other end the remaining part of the shank. The bars are placed with their breadth downwards, thus receiving the strength of the cable in width, edgewise, horizontally, forming the upper and lower sides of the (solid) shank separately, to be united afterwards, in order that the iron may bend rather than break, and with this object the iron is likewise divided in the manner given for the dimensions of anchors, as, for instance, that the shank should be four-tenths of the main beam (Aubin's Mar. Dict.)—but it is evident that neither beam nor tonnage relate directly to the magnitude of the anchor, because two similar ships may be of different sizes at their anchors. The rough rule in the navy is 1 cwt. to a gun, thus an 80 gun-ship will have an anchor of 80 cwt.; and a merchantman of 200 tons having an anchor of 10 cwt., 5 cwt. is added afterwards for every 100 tons; thus 300 tons would give 15 cwt. and so on.

The principal dimensions of the anchors in the navy may be stated shortly thus,—the shank 10, the arm 3, the breadth and depth of the palm about half this, the thickness or depth at b, or the small, 1/2, at the throat, 5, which are the dimensions given for the dimensions of the breadths of these, the edges being rounded. These general dimensions are taken from Pering's Treatise, 1819, since which other alterations have been made, principally in giving the section a diminution at the throat.

The weight of an anchor of 10 feet in length is, according to the same authority, about 11 1/4 cwt., and since, if the forms of all anchors were alike, the weights would be as the cubes of the lengths, the weight of any anchor might thus be found by dividing the length by 11 1/4. Thus the weight of an anchor of 3 1/2 feet in length would be 114 = 31 3/4 cwt.; the weight of this anchor is by the table, 30 cwt., hence as 30 or 32 cwt., the rule is nearly enough, but for larger anchors it gives the result of the weight of the anchor, including the iron of its parts, of the shank, and the shank is rather more than in proportion. The weight of the anchor includes that of the ring.

As to the cost of an anchor, the labour per cwt. is about 24s. for an anchor of 10 cwt. and under, and for the largest anchors about 8s.; the value of an anchor of 80 cwt, in cluding iron at 15 cwt. per cwt. is about 3500.

The stock consists of two beams of oak, bolted and hooped together;—the length is that of the shank and half the diameter of the ring; it is square; the side at the middle is an inch to a foot of the shank, and tapers to half of this as the ring. Small stock is necessary in the weight of the anchor. Lieutenant Rodger has proposed a solid stock of African oak, for the greater convenience of stockering or unstockering.

Of last we treat iron stocks, whose weight is from one-fourth to one-fifth of the anchor, have been much used. Whatever convenience may attend them in small vessels, it seems very clear that their smaller diameter and greater weight under water will cause them to sink deeper in a soft bottom in the event of the anchor turning over at once, and thus render this more difficult to do, especially as their length is limited to that of the shank. Small vessels require heavier anchors in proportion to larger vessels; the sea, sudden gusts of wind, and the pull of the cable affect larger vessels than it does these very rove thy this at last, and the strain.

In forging an anchor, care is taken not to render the iron brittle. The effect of the hammer is to harden the surface by contracting it more than the interior. This is remedied by heating the whole of the anchor, and, by expansion, softening the iron to a uniform state, and it then suffered to cool gradually. This process is called annealing. A large mass of iron requires a very heavy blow to work it equally, or the outside only will be affected by the hammer, the steam-engine is applied for this purpose in Woolwich dock-yard.

Various forms of anchors have been proposed to answer particular ends; these our limits prevent us from entering upon. We have confined ourselves rather to their principles of formation. Most of the forms have been very little considered, and have omitted several points. (See the Ency. Metrop. Pering's Treatise on the Anchor, &c.)

An anchor is said to be 'foul' when the cable is any way
entangled with it; to 'come home,' when the ship drafts it; to be 'a-wash,' when the stock is hove up to the surface of the water; to be 'a-ock-bill,' when hanging vertically, as in a list.

ANCHORET, sometimes written, and more correctly, Anachoret, a Greek word, signifying a person who has retired from the world. Under Christianity they sprung up about the middle of the third century in Egypt and Syria as the only proper consequence of the barrenness of the caves and solitary wilds, from the fury of the persecution which arose under the Emperor Decius. Paul, commonly called the hermit, has the credit of having been the first regular anachoret. A distinction, however, came after, when certain hermits came together and assumed a more fixed and common form, the former being given only to those who rigidly confined themselves to their caves or cells, and the latter to those who, although they had broken off all communion with the world, still wandered about the large in the wilds to which they had retired. Both descriptions of recluse were entirely distinguished from the Cenobites, or those living in communities. Many of the anachores were laymen; and there were also female as well as male anachores. From nearly the commencement of the seventh century, the church assumed a jurisdiction over anachores; and persons were not allowed to enter upon the mode of life in question except by permission of their ecclesiastical superiors, and after an appointed ceremony had been performed, whereupon the candidate, or candidate, and religious houses in the middle ages would sometimes keep an anchorite shut up in a cell, which was usually attached to the choir of the church. Such an attraction brought by the prospect of a holy place, which benefited much by their offerings. It was eventually found necessary, in our own as well as in other countries, to lay down certain regulations with a view of discouraging the adoption of this solitary life. The most singular species of anchorite, or, rather, recluse, is the church which is arose in Syria in the fifth century, and of which Simeon Stylites was the founder. This zealous and his followers, instead of resorting, according to the maxim of the Essenes, to wide solitudes, retired to the air, on lofty pillars of stone, on the tops of which they passed their lives. They have hence received the names of pillar saints, holy birds, and aerial martyrs.

ANCHOVY (Engraulus, Cuvier), a genus of abnormally melanopterygious fishes, separated by Baron Cuvier from the eel or herrings of Linnaeus, from which they are distinguished by the superior number of their branchiostegous rays, amounting to twelve or upwards, by the gape of the fish, with extending behind the eyes, and by the straight and pointed form of the scale, which form a small muzzel, projecting considerably beyond the mouth. The genus, as at present constituted, consists of six or seven species, all of diminutive size, and with the exception of the species of E. Cuvier, all the other nearly allied species distinguished from it by M. Cuvier, (E. meleeta) all inhabitants of the tropical seas of America and India. Whether these latter agree with the European species in the favour and other qualities of the flesh, for which it is so highly esteemed among civilized nations, is a doubtful question; at all events we are not aware that the fishing of the native species has ever been attempted either in America or India.

The common anchovy is a small fish, not much longer than the middle finger, of a bluish brown colour on the back and silvery white on the belly. The anal fin is remarkably short, and the dorsal situated immediately above the ventral; these characters will serve readily to distinguish it from the sprat and other kindred species, with which it might otherwise be confounded, and which are, in fact, not unfrequently imposed upon the public for the real anchovy. It abounds in the Mediterranean along the shores of Spain, Italy, and the coasts of Portugal and France, and occasionally has been taken off the shores of England and Holland. Considerable fisheries of anchovies are established along the coasts of Provence and Catalonia; but the most productive of all is off the coast of West Africa. In this region the anchovy is carried on only during the months of May, June, and July, at which period the anchovies quit the deep seas and approach the shores for the purpose of depositing their young; it is then only that they are found in the Mediterranean, which they enter in enormous shoals, by the straits of Gibraltar, at the commencement of the breeding season, and leave it, after fulfilling this duty, to retire again to the depths of the Atlantic. They are fished for only during the spring, and are the lowest round by means of charcoal fires which are kept burning in the stern. At being caught, the heads, gills, and entrails are separated from the bodies, which are salted and arranged in small barrels, varying from five to twenty pounds in weight; this barrel they are taken, being previously taken to be dried, and being sent to market; and if proper means be taken to exclude the air, they will in this state keep for a very considerable period. If, when the barrels are opened, the fish are found to be small and firm, round-backed, with a silvery skin and red bellies, and a white fish, they are probably the true anchovy; if, on the contrary, they taper very much towards the tail, are of a dark brown colour without, and have flabby pale-coloured flesh, they will probably turn out to be the sardine (E. meleeta), another Mediterranean species frequently mixed with real anchovies, or even sold separately as the genuine fish.

No condiment is more generally known and esteemed than anchovy sauce. Among the Romans, who called it garum, and prepared it exactly in the same manner as we do at present, its reputation was, if possible, still greater than among modern nations, and it appears to have formed an indispensable article of seasoning in their most exquisites and luxurious suppers. The mode of preparing anchovy sauce is simply in braving boiling the fish over a slow fire with pulped butter; the action of the heat dissolves the whole body to a jelly, and in this form, when brought to a proper consistence, is poured over the most costly dishes. The anchovies are sometimes considered as the true anchovy, but it is also sometimes brought to the breakfast table whole, and is then eaten raw. The importation of anchovies into the port of London is very considerable. Up to the year 1829 the average quantity annually imported was about 500,000 lbs. In that year, however, the duty was lowered from a shilling to twopence a pound, in consequence of which the importation of 1830 amounted to 260,000 lbs, but declined in the following year, 1831, to about 30,000 lbs.

ANCHOVY PEAR. [See Laurus.]

ANCHYLOSSIS, a Greek word (ἀνχυλωσις), signifying a bending. If the Greek orthography were strictly followed, the word would be written anchylosis.

An essential part of the apparatus of locomotion in animals consists of the structure termed a joint. (See Joint.) Joints are so constructed as to produce various kinds and degrees of motion, in the execution of which it is necessary that the different parts constituting the joint should be in close contact with each other, and remain in this contact with each other, have a tendency to grow together; but such a union would at once destroy the action of a joint, and a specific apparatus is provided for the expression of this event. In the soft and articular surfaces, that is, the surfaces of joints, are covered with a thin and delicate membrane which secretes a peculiar fluid of an unctuous or oily nature, termed synovia. This synovia, the oil of joints, is in general effectual in keeping separate and distinct the different parts of the joint, however closely and for however long a time they may be in contact with each other; nevertheless, it does occasionally happen that a firm and complete union takes place between the different articulating parts of the joint, which constitutes what is technically termed anchylosis; or, in common language, a stiff joint. An anchylosis, or a stiff joint, consists then of the immoveable union of two bones naturally connected together in such a manner as to form a moveable joint. All the moveable bones forming joints may become consolidated together, or anchylosed; and cases are on record of a general anchylosis of all the bones of the human body. Whatever keeps a joint motionless gives rise to the different articulating parts of the joint to it is apt to occur after the fracture of a bone in the neighbourhood of a joint; because it is necessary to the cure of the fracture that the limb should be fixed in one position, while the inflammation, occasioned by the violence that takes place at the fracture, spreads to the joints in one of the ordinary effects of inflammation to agglutinate and consolidate the parts inflamed. Hence inflammation, sprains, dislocation, shocks occasioned by leaping or falling on the feet from great heights, ulcers, are the common causes of anchylosis. But anchylosis cannot always be
considered in the light of a disease; at any rate, it is sometimes the happy termination of a formidable malady. The natural cure of many painful and dangerous diseases of the joints is the formation of an anchylosis. When an anchylosis is forming, and is clearly inevitable, and is, indeed, a thing to be desired, the position in which the limb is kept, or the position in which the bones are allowed to unite, is a matter of great importance to the future comfort of the individual. When, for example, from injury done to the hand, the joints of the elbow and of the hand are being permanently fixed in a position which is very important to keep the fingers bent, because, if they anchor stole in that position, the hand will be more useful than it could be were the fingers permanently extended. On the contrary, when it is desirable to prevent the elbow joint, the limb should be kept as straight as possible, because, if the leg be extended, the limb will be more useful than if it were permanently bent. On the other hand, when anchylosis of the elbow-joint cannot be prevented, the limb should always be kept bent. Considerations of this sort are of great importance; they are never neglected by the intelligent surgeon; and they tend to lessen the inconvenience and suffering of an inevitable calamity. They ought in such a case to be presented to the public, as a matter which could be made familiar to the generality of mankind. The ground on which that plan may be pursued is adopted, in order that he may co-operate with his medical attendant in lessening the evil that cannot be avoided, and in securing the advantage it is possible to obtain.

ANCIENT, ANCIENTS; or ANTIENT, ANTIENTS. The term ancient, which we derive from the French word ancien, has the primary meaning of 'very old,' as when we say 'an ancient building,' 'an ancient family,' in preference to the word old, which is generally used when a thing is not new, though it may be old, that is, the original sense. The word is applied to the ancients, to the time of the ancients, and generally to a period centuries, if not millennia, separate from our own. The ancients, the ancients, as a collective term, is used generally. The ancients, in the meaning of 'ancient ancients,' is, of course, a term of contrast for the moderns. The boundary line between ancient and modern in this latter sense is not very accurately drawn; but according to the vulgar acceptance of the terms, the period of the ancients seems to be closed by the final overthrow of the western Roman empire. The Roman empire marks the commencement of a new order of things, when we begin to discover the rudiments of those powerful independent nations, of those various languages, and peculiar institutions, which so remarkably distinguish a large portion of what is called modern Europe, from Europe under Roman dominion. The latter interval is more accurately demarcated, as doubtless ground, for the possession of which the terms ancient and modern will always be allowed to contend. It is plain that the reason here given for the commonly received answer is applicable only to the west and south of Europe; yet the same distinguishing terms are familiarly used, and in many cases the same date arbitrarily assumed with reference to the rest of the world. This practice is attended with many difficulties, and produces no little confusion. The eastern Roman empire, for instance, survived the western by many centuries; nor can any good reason be given why the subjects of Justinian and his predecessors should be classed among the ancients, and those of his successors among the moderns. If the question were asked, whom do we mean when we speak of the ancient Greek or the ancient Roman empire, we could not call him either an ancient or modern Greek writer without giving cause for considerable misapprehension. In the case of the oriental nations, the same terms are still applied, and often perhaps with no very distinct notion of their meaning, even by those who employ them. We bear commonly of ancient and modern Persia, ancient and modern India. Now, in the case of the Persian empire, in seeking for a date, we might choose any of the events consequent upon the irruption of the Parthians, the restoration, as it is called, of the old Persian dynasty, and its subjugation by the Mohammedans. Any one of these events, and especially the latter, furnished perhaps better ground for the distinction of ancient and modern Persia, than which occurred at the time of the overthrow of the Roman empire. It might be expected that the convenience of having at hand such terms as ancient and modern would often lead to some abuse, and this is particularly observable in the vague reference so frequently made to 'the ancients.' There is no definition which excludes from their number any who lived from the time of Noah down to the last Roman emperor, and it is obvious, that there is not much which can be safely predicated of a class so large and comprehensive, yet we often hear of what 'the ancients' said, and did, and thought. Allusion is made to the military tactics or the philosophy of the ancients, or to any of the literature of the ancients and moderns; and we are told of the sentiments on certain subjects entertained by the heathen ancients. The truth is that, by 'the ancients,' we must understand, on many of these points, the Romans at least; it is of that kind of their historical history; and even thus limited, there are few assertions which will hold good of 'the ancients' generally. For the most part, perhaps, the looseness of the expression is corrected and limited by the subject or the context; but it is also true, that real misapprehension has arisen from the practice of throwing together and confounding the most dissimilar things by the help of this comprehensive term. This is not the place to enter on the consideration of ancient and modern history, but there is an evil in such use of these terms, which it may be worth while to notice. It is to be feared that the common division of the subject of history into two parts, ancient, and modern, too often conveys the notion of an actual separation which, in reality, it is our object to obtain. When we use the ancient part of the subject, we imagine himself to be conversing with beings of a different nature from himself. He believes the narrative, but is affected by it much as he is by the beam of the sun; his very being is drawn to and gulf, and passed from the obscure regions of ancient history into the stronger realities of modern times, he converses freely with beings of the same flesh and blood with himself. It is not requisite to enumerate all the bad effects which must result from this impression. It is only necessary to conclude, that the student must necessarily overlook the important fact, that the subjects of what are called ancient and modern history are so far one and indivisible, that a liberal and comprehensive view of the ancient part is necessary for the profitable study of the modern. ANCIILLA or ANCILLA/RIA, are the names given by Lamarck to a genus of spiral, univalve, marine shells, allied to the olives. Like them they are covered with a hard shining coat, destitute of any peristome, and fastened in the large foot of the animal, so that the middle of the back of the shell can be alone discovered. They chiefly differ from the olives in the suture of the whorl, being callous and not furnished with a groove, formed by a threadlike impression. The species are numerous, and are chiefly confined to tropical climates: some have a small tooth, like the unicorn shell (Monoceros), piercing the outside of the shell. When he has crossed the gulf, and passed from the obscure regions of ancient history into the stronger realities of modern times, he converses freely with beings of the same flesh and blood with himself. It is not requisite to enumerate all the bad effects which must result from this impression. It is only necessary to conclude, that the student must necessarily overlook the important fact, that the subjects of what are called ancient and modern history are so far one and indivisible, that a liberal and comprehensive view of the ancient part is necessary for the profitable study of the modern. ANCIILLON (CHARLES), the son of David Ancillon, was born at Metz, on the 28th of July, 1659. After having studied at Marburg, Geneva, and Paris, he was admitted to the bar in Paris, and then commenced the practice of his profession in his native place. He was admitted, however, to the French bar only after passing the post in the court of the Edict of Nantes. When the elder Ancillon, some time after settled in Berlin, Charles followed him thither, and the elector of Brandenburg appointed him judge and director of the French habitants of the province. He was afterwards promoted to the offices of inspector of the tribunals of justice for the refugees in Prussia, superintendent of the French school, and royal historiographer; and was also employed by the elector on a diplomatic mission to the Swiss Cantons. Ancillon was esteemed at Berlin. Under the Government of Frederick William of Prussia, he was one of the most learned lawyers of his time, is the author of various works, both upon subjects connected with his profession and others, the principal of which are enumerated in the Biographie Universelle, our authority for the above facts. He is also the author of a work on the French law, called his Traite des Euanques, 12mo. 1707, which is said to contain a great deal of curious learning. ANCIOLLON (DAVID), a very learned French Pro-
testant clergyman, the father of the subject of the preceding article. He was born on the 17th of March, 1617, at Metz, where his father was an eminent lawyer. Having attended for some years the Jesuits' College there, he went to Geneva, in 1633, to complete his studies in philosophy and theology; and in 1641, was licensed to preach by the synod of Charenton, and appointed minister at Meaux, a most important post of the stations under their jurisdiction then vacated. He has always been, in the mean time married a lady of large fortune. The match is stated to have been arranged by his congregation, with the view of retaining him among them. In 1653, however, he accepted the pastorate of the town of Beaut, and continued to officiate with great reputation till the revocation of the Edict of Nantes, in 1685, when he retired to France.

He was soon after chosen minister of the French church at Hanau; but this post, after a short time, he voluntarily resigned, having been induced, it is said, to take this step by the annoyances which he suffered from his brother clergyman, who were jealous of his superior eloquence and reputation. At first he went back to France; but soon proceeded to Berlin, where he was received with great favour by the elector of Brandenburg. Here he continued to reside till his death, on the 3d of September, 1692. He is the author of several works, principally in defence of the reformed faith, the titles of which make a very large number of volumes. Perhaps, however, the most favourable impression of his varied literary labours is to be obtained from the work, entitled *Mélanges Critique de Littérature Recueilli des Conversations de feu M. Ancillon*, published at Basle, in 1698, in two volumes, 12mo., which is the most remarkable. It is a collection of apologetic and miscellaneous remarks, and contains the quintessence of the learned. It is often to be found forming the third volume of the *Mélanges Critiques* with the title of *Discours sur la Vie de feu M. Ancillon et ses Dernières Heures*; and he is also the subject of an article of considerable length in the second and subsequent editions of Bayle. The above particulars have been chiefly taken from the latter source. (See also the *Biograph. Universelle*.)

ANCLIFFE, or ANCLIFF, a hamlet near the town of Whitchurch, and formerly, a sinister locality, is now called by the inhabitants the 'burning-well.' The true cause of the phenomenon appears to have been the escape of carbonated hydrogen gas from the earth at the bottom of the well, which, passing rapidly through the water, gave it the property of boiling, and the scalding water was applied to the surface. Leigh (Nat. Hist. of Lancashire, &c., Oxford, 1700) thus describes it:—'It is about two miles from Wigan, in a village called Ancliff, in the ground of William Molineux, Esq. of that place. The well is at the bottom of a tree, the water cold, and without any smell; when any person comes to see it, a man clears the well from all its water: that done, you will immediately hear a hissing noise in a corner of it, and by holding a lighted candle near to it, you will find the water boiling upon the top, and afterwards spreads itself upon what water has issued in, and it is only then indeed it ought to be called the burning-well. It is observable, though this sulphureous *halitus* continually mixes with water, yet the water continues cold, nor will it yield to the soda and vinegar. In the Philosophical Trans. No. xxvi. p. 482, corroborates the above statement in its main points. 'When the water was cleared away, the cone of the flame ascended a foot and a half, and on occasion, and that the tree was free from the compass of a man's hat about the brim. I then caused a bucket full of water to be poured on the fire,' adds Mr. Shirley, 'by which it was presently quenched. I did not perceive the flame to be discoloured like that of sulphureous water, but the end of a staff, and the edges of my fingers were scorched when they broke out of the earth and pressed against my hand were not, to my best remembrance, at all hot.' The well, or its peculiar property, is now lost. Beauty. of Eng. and Wales.
favour with the young king, persuaded him to deliver the queen-mother from the power of her favourite, and urged him to order the Maréchal to be arrested, and even to be put to death if he resisted. Vitry, a captain of the king's guard, was espoused with this Emision, which was ordered to the fullest extent. Ancere was shot dead as he was entering the palace of the Louvre. On hearing the shot, the king looked out at the window, and expressed his satisfaction, which he testified by raising Vitry to the rank of Marescal. The body of Vitry was first buried secretly at St. Germain l'Auxerrois, but was soon after torn from the tomb by the infuriated mob, who dragged it through the streets on hurdles and then threw it into the highway. Concini's son, sixteen years of age, was otherwise fortunate, after this one exposure, like many other sorts of insults, and deprived of his father's titles and riches. Eleonora soon shared the misfortunes of her husband. She was accused and convicted of sorcery, Judaism, and corruption; and was executed at the Place de Grève on the 8th of July, 1617. During her trial, and at the moment of her execution, she displayed the greatest firmness of mind, saying, the only sorcery she had used towards the queen was the power of a strong mind over a weak one. It is said she was the founder of the order of the Blue Friars.

ANCUS MARCIUS, the fourth king of antient Rome, belongs to a period when it is difficult to separate history from fable. The reigns of the kings of Rome seem to mark the chief stages of progress in the political condition of the places, rather than of individuals. The names of Romulus, Numa, and Tullus Hostilius are respectively connected with the origin of the three patrician tribes, the Ramnes, the Tities, and the Luceres, and with their settlement upon the seven hills called the Palatine, the Aventine, and the Quirinal. Tullus, under the three first kings, the patrician part of the Roman constitution had received its full development. To Ancus Marcius, tradition assigned the honour of laying the first foundations of the Jupiter temple, that important monument in the state, to which Rome, under the commonwealth, owed nearly all her greatness. His predecessor,attentive solely to war, had neglected the religious institutions established by Numa, and for his impiety had been destroyed by a thunderbolt with all his family. Ancus Marcius, whose mother, according to the tradition, was the daughter of Numa, restored the neglected rites, and endeavoured in all respects to imitate the pacific policy of his grandfather. But the neighbouring states, mistaking his love of peace for timidity, now inveighed against him, and provoked him to the greatest aggressions on the Roman territory. In the successive wars with the Latins, the Veientes, and other states, which ensued, he was invariably successful. From the Latins he took towns, and even amongst the Umbrians, Tullus had transferred their inhabitants to his capital, giving them as a place of abode, not indeed any ground within the walls, but a part of the Aventine and the valley near the temple of Venus Martia which separated that hill from the Palatine. Ancus was thus the founder of the plebes, and his assignment to the public domain to that body procured him in after times from one party the title of the ' Good Ancus,' (Ennius in Festus, v. Sos, quoted too by Lucertius, iii. 1039); others condemned his unworthy love of popularity (Verg. Aen. vi. 616). The Latin towns just mentioned are supposed to have been situated between Rome and the coast; and indeed the conquests of the king extended to the mouth of the Tiber, where he established a colony under the name of Aricia, on the opposite a river just near the navigable river. In his war against Veii he was equally successful; and to protect his people on that side he fortified the Janiculum, and connected it with the city by means of the Sacred Bridge called the Pons Subiactus, in the construction of which not iron or iron was used. This bridge, repaired from time to time under the direction of the college of priests called Pontifices, (bridge-makers,) who religiously adhered to the principle of excluding all metal, lasted until the year 23 B.C., when it was carried away by an extraordinary inundation of the river. Before this place was submerged the following stone bridge erected by the censor Eumelius Lepidus. A still more durable monument connected with the name of Ancius is the prison formed out of a quarry in that side of the Capitoline hill which overlooks the Forum. It would be idle to copy from Dionysius the detailed account of the transactions which are said to have filled the reign of twenty three or twenty-four years assigned by the chronicists to this monarch. Ancius was said to be the grandson of Numas. In this tradition Niebuhr sees a trace of the regulation by which the kings of Rome were chosen alternately from the two leading tribes. Some moderns answer Ancius's inscribed title to refer their origin to this king. (Iatty l. 38-35, Dionysius iii. 36-45, with Niebuhr's Roman History, translated by Hare and Thirlwall, v. p. 346-350.)

ANCYGUS is the name of the shell which is usually called the Callopholis, Marseilles, callophorophy, or mascaran; this name is derived from a compressed triangular tentacles, with the eyes sessile on the outer base; and a respiratory cavity placed on the middle of the back, with an aperture closed by a valve opening in the middle of the left side.

This genus is very nearly allied to the pond-snail, Lema, from which it chiefly differs in the simple conical form of its body and shell, and some species, as Ancylius, are allied to it by having the apex bent on one side, as if the shell was broken. Ancylius has been described in several others, but there is little doubt that its true situation is with the lung-breathing mollusca. Treverianus has mistaken the lid of the respiratory opening for a gill, and Raup places it with the senicíl-siledenses. They are generally found in fresh water, and are frequently fed on stones and plants, and they live a considerable time out of the water. They are easily known from the Sphorer, which are the only shells they can be confounded with; by their being sinistral, very thin, and covered with a hairy mantle, like the Citellus.

ANCYRA, now Angora, or Eugoue, was one of the most important cities of Asia Minor. Tradition ascribed its origin to Midas, and its inhabitants exhibited in a temple of Cybele, near the Taurian, and, at its summit of the hill, was a holy place or temple, which was covered at the time of its foundation. This was, probably, a Greek invention, to account for the name of the city, but this as it may, an anchor appears on the coins struck in the reigns of Antoninus, Severus, and Caracalla. When the borders of Galli or Galatia established themselves in the heart of Asia Minor, Ankyra became the capital of a tribe which had originally come from the neighbourhood of Toulouse, called Tectosages. In B.C. 189, the whole of Galatia was subdued by the arms of Manlius, and from this time till the present it has been the capital of the country. Towards the close of the Republic, Deiotarus, who, by right, was the Tetrarch of the Tectosages alone, had extended his authority over the other Galatian tribes, and been made a tribune of the people, Medullus, a citizen of Rome, was accused of sedition by Caesar, and, by the law (c. 23) was found guilty of reducing the whole country to the form of a province, of which Ankyra was still the capital. Though deprived of its nominal independence, the city flourished under the favour of Augustus, and the inhabitants in their gratitude appear to have offered religious honours to the monarch. The city was permitted to assume the name Sestiae, (the Greek term corresponding to the Latin Augusti,) and at the death of the emperor, when an inscription on brass was erected at Rome to commemorate his achievements, the citizens of Ankyra procured a copy and had it inscribed on marble in Greek and Latin, and placed in one of their public buildings, which was probably a temple dedicated to Augustus, under the character of Ankyra. This Ankyra, or Annyrion, was discovered in 1534, by Wrantz, bishop of Aria and ambassador from Ferdinand II., at the Ottoman Pott, a more correct copy was taken by Tournefort in 1701, and by him communicated to Chishull, who ably supplied many of the lost words, and published it in his Asiatic Antiquities. It has been repeatedly printed since, particularly as an appendix to the writings of Tacitus. (See Oberlin's edition, tom. ii. p. 586.) The greater part of the Latin inscription was still standing in the building, but had been mutilated in the attempts to remove the copper cramps with which the different pieces of marble had been connected together. Suetonius, in his Life of Augustus, c. 101, says of the original inscription at Rome, that from which the monument Annyrion was copied. Augustus, says, f.
besides his will left four volumes, one of containing a summary of all his achievements, which he wished to be cut in tables of brass and erected in front of his mausoleum. This inscription, by its historical importance, fully deserves the title of a national monument. Ancyra, but also to the former, to which some others which are worthy of mention, particularly that which Montfaucon has given in his Palaeographia, p. 154, containing an enumeration of public festivals at the expense of certain individuals there named. Among these public benefactions, it is recorded by the church of the Most Holy Apostles, those names which bear a strong resemblance to those which occur in Caesar’s History of His Gallic Wars, as Dumnonior, &c. Other inscriptions may be seen in Tournefort’s Voyage du Levant, tom. ii., but this traveller was wrong in supposing that Ancyra was the site of ancient Anchises. In his inquiry, he observes, would still find inscriptions enough to occupy a year in copying. The high importance of Ancyra under the empire is proved by the numerous coins it issued, and by the immense number of its public buildings, the scattered remains of which are seen in all quarters of the present city. Above all was it celebrated as one of the chief seats of religion, so that Libanius calls it the sacred city. Coins and inscriptions refer to the worship of Jupiter, Ceres, Bajazet, and others. In the strata or rock-cut tombs of Serapis, the Diocouri. It was also the seat of one of the earliest Christian churches, founded, probably, by the apostle St. Paul: accordingly, in the years 314 and 358, Christian councils were held here. Pagan worship, however, even when Christianity had obtained afoo. In 625, Ancyra was taken by the Turks, but in 1102 recovered for a time by the Franks. After being for a considerable period the capital of the Turkish empire, it again changed masters. The consequence of the great battle between Tamerlane and Bajazet, which was fought in the adjoining plain, July 28, 1402. In 1415, it was recovered for the Turks by Mohammed I., and since that period has always belonged to the Ottoman empire. The town itself consists of about 13,000 Turks, 4000 or 5000 Armenians, having seven churches, and 600 Greeks, having two churches. The present population is not known, though it is considerable. Its chief commerce consists in articles manufactured from the bright, silk-like wool of the Angora goat. At the beginning of the last century, there were resident merchants there from England, France, and Holland. The town is situated near the sources of the most eastern of the Algarves, and 100 miles, as the crow flies, of the city of Almeria, on the coast. It is 32° 46' E. long., 39° 52' N. lat. (See Tournefort’s Voyage du Levant, tom. ii., p. 244; Mémories de l’Académie des Inscriptions, etc.) There was another Ancira in Phrygia Epicetetus, the precise position of which is unknown. The coins of both towns have the name in the form ANKYPA, not ANACIRA.

ANDALUCÍA or ANDALUSÍA, the most southern of the provinces of Spain, comprises the four Moorish kingdoms of Seville, Cordoba, Jaen, and Granada. It is situated between 36° 4' and 35° 25' N. lat., and 2° 7' 20" W. long.; it bounded on the north by La Mancha and Extremadura, on the east by Murcia, on the south-east by the Mediterranean, and by Portugal on the west; it extends, in its greatest length, 320 miles from east to west, and 144 from north to south. It was included in the Roman province of Lusitania. Its greatest length is 144 miles, and its greatest breadth 100 miles. The present name, according to the most general opinion, it received from the Vandals, who established themselves in it about the beginning of the fifth century of our era.

Two chains of mountains traverse this province; the most remarkable of these is called the Poento-Betic range by some geographers. It extends from Tarifa to Cape Gata, a distance of about 240 miles in length, without reckoning its sinuosities or windings; its breadth, from the Sierra de Bedmar to Cape Sacrifices, is from 75 to 80 miles. The direction of this chain is first from south to north, and then from east to west; in its course it takes different names. The Sierra de Garailes, which forms the backbone of the mountain, extends from 36° 4' to 36° 30' N. lat. The Sierra de Romual Abdalazís, and Prieta then follow in a direction from south-west to north-east from 3° 12' to 3° 57' west long.; then follow the Sierras of Loja, Alhama, Tujada, and Lujar, and the Sierra de Mediavél, which, running north-west to south-east, from 3° 57' to 2° 57'. From the Picacho de Veleta it takes the name of Sierra Nevada, and then runs from west to east as far as 2° 27', after which, taking a direction south-east and afterwards south, it becomes the Sierra Garailes, and divides itself into two branches, one of which abuts on the sea at Cape Gata; the other branch proceeds eastwards to the Torre de Roldán. The interior range of mountains parallel the Sierra Nevada, for a distance of about 45 miles, from Motril to Almeria, is called Alpujarras, an Arabic name, meaning grass and pasture mountains. This chain includes the Sierra de Gador and Contraviesa, and its western extremity joins the heights of Lujar and Jolulcar, from the principal town of Almeria, and divided in a direction almost parallel to that of the central chain. The slope of the Alpujarras is abrupt on the north, but on the south it extends itself gradually, so that the hills slope down to the sea-shore.

The Sierra Nevada is mainly composed of mica-slate which passes into grise and clay-slate: on the south slope the clay-slate rests on the mica-slate, and is covered by a black transition limestone rock, rich in sulphur of lead. Near Granada there is a quarry of serpentine at Picacho. It is green, or bluish green, and is used for farm buildings, and for sculpture, being of a fine hard stone. From the Sierra Nevada the mountains extend for about eighty miles, and on the south they bend at its feet, forming the western end of the Mediterranean. The Sierra Nevada is 523 feet high, and covered with snow three parts of the year. The Cresta de Gallo, or Cock’s Comb, in the Sierra de Ronda, to the S.E. of the town of that name, is the first point discovered by ships approaching Cadiz. The hermitage of Nuestra Señora de las Nieves, (our Lady of the Snow,) on the same mountain, is elevated 6011 feet (See Orographe de l’Europe.)

This range being so contiguous to the sea, the rivers on the south side may more properly be called torrents than rivers: the principal of these, the Guadal, the Guadalajar, the Alhama, the Almeria, and the Guadalclo, fall into the Mediterranean. The Genil, the Darro, celebrated for the particles of gold found in the sand which it carries, and the Guadajava, run into the sea southwards, and with their waters the current of the Guadalquivir. A branch of the Poento-Betic chain which serves as a boundary to the plains of Granada on the north, connects it with the Mariane range by its greatest breadth between Cordoba and the river Guadalmez nearly sixty. From the Sierra Nevada, which forms the western extremity of the Spanish range, the Guadalmez and Guadalmez demarcate the boundary of Spain and Portugal, between 2° 32', and 6° 12' W. long., it runs from E.N.E. to W.S.W., that is, almost parallel to the Poento-Betic, and takes the names of Sierra de los Peñoles, Cordoba, Constantina, Guadalcaz, Guadalmez, and above Motril the name of Sierra Nevada, from Motril to Almeria, one of which takes the name of Sierra Alibailer and runs in a western direction to the banks of the Guadiana; the second proceeds south-westwards under the name of Sierra
de Arco, and is separated by the Guadiana from the Sierra
of Cadiz, and from Monelopa, in Portugal, and the Cabo
In., and the latter S.W. and partly form the
south limits of the province of Alentejo in Portugal.
This range does not contain any remarkable summits, nor
any of sufficient elevation to retain the snow for nine
months in the year. Their height is broken, and their
flanks are covered with plants of shining and dark green leaves, with which it is
grown, give it a dark appearance, from which the name of Sierra Morena, or Dark
a and the other part of the range. Its formation is principally schisteous; the
Summits present a series of table-lands, and there is found near Almargue on the high road from Madrid to
Calcis. Though the Marianic range is the great boundary
between the waters of the Guadiana and Guadalquivir, yet
many rivers which have their sources on the north side of the chain intersect its range, and fall into either the Guadalquivir
or the Tinto and a few more, which empty them-

selfs into the ocean between Moguer and Huelva.
The Sierra Morena contains the richest deposit of minerals in Spaii;
it produces mercury, lead, copper, silver, and gold; it is also exceedingly abundant in pasture, and well adapted
to cultivation. The high road from Madrid to Andalusia cuts
this chain in its northest and most elevated part, called
Despeña Perros, or the Precipice of the Dogs. Another
colony is a great step open in the chain, which converts
Andalusia with Extremadura by the Puerto de Monsaritio. These
are the only roads in the Sierra Morena: there are other
communications through it, which, if not impracticable, are
at least very incertain.
The Guadix is the largest river in Andalusia.
Bore de St. Vincent says that its real source is the Guada-

The Spanish geographers place the sources of this
eriver in two fountains, distant about seventeen miles from
each other, near the Sierra de Cazorla, and the Sierra
long. The windings of this mountain force it at first to
follow an irregular course. After having received the Guada-

The extent of country which this river traverses from the
Sierra de Cazorla lait. 38°, to the Puente de Chipiona,
situated, according to the Derrero de Tajo, in 36° 41' 18",
is about 276 miles; but the course of the river, following
all its windings, is at least 334 miles. The Guadalquivir
is navigable as far as Seville; and a company has under-
taken to remove the obstacles which impede the navigation
to Cordoba. The affluents of the Guadalquivir, besides those
mentioned, are the Guadal, the Guadiana, the Jandula, the
Vegaes, Arentas, Guadaladiven, Guadalupe, Bembexer, Guadalucaer, Galapag, and Viar, which flow into it on
the northern bank; and on the southern Jandullita, Nimeche,
Torres, Guadalbalban, Saladas de Arona, or salt streams
of Aragon, Corbones, Gues, and Tegueros, and the
northern side, the Marianic range presents nothing ho-

The plains of Andalusia, notwithstanding their being
situated in one of the warmest climates of Europe, are still
generally speaking a of a moderate temperature. It never
freezes in them, and the snow never remains long upon the
ground. Heavy and scorching winds, which come from Africa, are cooled and purified by the snowy summits
of the Sierra Nevada, and rarely produce those pernicious effects observable in the country from which they blow.
On leaving at Despeña Perros, on the route from Castle
to Andalusia, the most inattentive observer will immediately
perceive that the productions of nature are changed. On the

comprised in 41 cities, 458 towns, 314 villages and boroughs. Andalusia is divided into two military departments, having each a captain-general, and a Chancilleria, or high civil and criminal court, one at Seville, and another at Granada.

The people of Andalusia appear to be a mixture of five different nations, which successively have had dominion of that region,—the Carthaginians, the Romans, the Vandals, and the Goths, mixed with the original race, very probably of African origin. The Moors invaded it in 711, and for 250 years they were the sole inhabitants of the country. Granada, their last hold. Notwithstanding their expulsion, many truces of their character are still discernible. The complexion and features of the inhabitants, their dances, music, and musical instruments, many of the most beautiful persons, their prejudices, their system of agriculture, their hospitality, and part of the dress, especially among the women of some villages, and even their harsh mode of aspirating the Castilian language,—everything points the attentive observer of the Andalusian cestors. The Andalusian, inhabiting one of the finest climates in the world, where nature so liberally supplies his riches, lives contented with what he possesses, is never anxious about the future, and is a stranger to sorrow. This sort of comfort and indolent disposition has caused him to be accused of indolence. The inhabitants of the plains of Seville may perhaps deserve that character; but the labours of the Serrania de Ronda, of the Hoya de Malaga, of the Alpujarras, and in general all the people inhabiting the sun when the birds and grasshoppers are buried in their occupations, which they never quit until after its setting, cannot justly be taxed with indolence. In those districts the women are seen working in the fields, while the men are employed in reaping the crops. And these men and women work together, the former are observed to stop in their work now and then to smoke their paper cigars, while the latter, who do not enjoy that luxury, proceed in their task; which circumstance may probably oblige those who attempt to render erroneous statements about the supposed idleness of the Andalusian people, and the miserable condition to which the women are reduced in that province. The same amount of credit is due to all the accounts and wonderful tales about the jealousy of the Andalusian, and of the passion for the confinement in which they keep their wives. Possessing a powerful and lively imagination, the Andalusian express the most simple ideas in a figurative and energetic language, which may perhaps entitle them to the epithet of the Gascon of little France, and of the Provençal, or Attic wit, though not so pungent, is not less celebrated in Spain, than the Attic wit was in Greece. The Andalusian women are remarkable for the gracefulness of their forms, for their expressive, large, and black eyes, and for their height, and the rare occurrence to find among them some with blue eyes, a fair complexion, and light, flaxen hair. Andalusia has at all times produced eminent men. The great Trajan, the two Senecas, the poet Silius Italicus, and the agronomist COLUMELUM, did honour to the Andalusian name under the Romans. The list of the eminent Arabs, who were born and educated in that province, is still more numerous: and, in modern times, the Granadas, Leones, Morillos, Cespedes, Herreras, Rijegas, and also the best-lyric poets in the Peninsula, were Andalusians by birth. If ever a rational and enlightened system of government should secure the property and allow the free development of the intellectual faculties of this people,—if the fixed rule of the law should ever be substituted for the capricious will of the most inconstant province in Spain. At present, though there are universities at Seville, Granada, and Cordoba, besides several colleges at Cadiz and other principal towns, education is not in the most flourishing condition. The general division of the land and large property of which is in the hands of the grandees, who never visit their possessions, and of monks, who care little about improving them,—keeps agriculture in a very backward state; and an oppressive and injudicious fiscal system, governs the advancement of trade and industry. (See MiliUS; Recueil de Voyages de la Société de Géographie de Paris, vol. iii., pp. 8, 9. Antitoll; Malte Brun's Geography, viii., book 138. Bory de St. Vincent's Résumé Géographique de la Peninsule Iberique, section i., chap. 3, section l., p. 472—492.)

For the subdvision of Andalusia, and the chief towns, see the names mentioned in this article.
with mud, which hardens in the sun, and serves as a protection against the attacks of insects which swarm in the island and would otherwise be a constant torment to them. This plastering, and the custom of painting their woolly heads with red ochre, does not tend to improve their naturally hideous appearance.

The origin of this race of people,—so different in their appearance from any of the races on the continent, or the neighbouring islands,—is an object of some curiosity. The people to whom they bear the greatest resemblance in their persons and dispositions are the mopptheaded Papuas of New Guinea; but how they should have found their way to such a distant isle, is a matter in which it is difficult to imagine. The language used by the Andamaners, as far as there are means for judging, appears to be wholly dissimilar to any spoken in other parts of the east.

A settlement was attempted by the English in 1791, on the south part of the largest island, which settlement, two years afterwards, removed to Port Cornwallis, near the northern end, in 3° 28' N. lat., and 92° 54' E. long. One object for making this establishment was the possession of a commodious harbour on the east side of the Bay of Bengal, which might be a place of shelter during the prevalence of the north-east monsoon. The place was abandoned in 1798, in consequence of its proving extremely prejudicial to the health of the settlers. It is probable that this disadvantage might have been remedied by cleaning the approaches to it without the necessity of removing the whole island.

In 1814, when Port Cornwallis was visited by an English ship, very few vestiges remained of the British settlement. In April, 1824, the ship Archibald Campbell, despatched against the Burmese, assembled in the harbour, where some of the ships remained about a month; but it was not found possible on that occasion to establish any intercourse with the natives, who, on account of the agitation of their feelings by discharging their arrows at all the Europeans who came within their reach.

The Little Andaman was visited, in November, 1825, by the Earl Kellie transport, for the purpose of procuring water for the troops, as it was not possible to obtain it on the island. The inhabitants showed an equally fierce disposition, and endeavoured as much as possible to obstruct our people while filling their water-casks. This smaller island does not possess any harbour, but has tolerable anchorage near the shore. It is twenty-eight miles square, and has an average breadth of seventeen miles. (Syme's Embassy to Ava, and MS. documents at the India Board, as quoted in Hamilton's East India Gazetteer.)

The above notices of former days, of Corelli, Handel, &c., which we agree to call antient music, was generally much slower than that which prevails at present, and andante was then used to denote a moderate degree of quickness: now it indicates a steady, calm motion, rather inclining to slowness than the reverse. It also enjoins a more than ordinary attention to the measure, to the equality of time given to each bar. It must be added, however, that composers often differ from each other in the meaning they annex to this word, and to each composition which can only be remedied by invariably marking the commencing time of each bar of music by the metronome, or some kind of pendulum.

This term is also used substantively: thus we say, an andante of Haydn, &c.

**ANDELYS** (Les), a town in France on the right Bank of the Seine, in the department of Eure. It property consists of two towns, Grand (great) Andely, and Petit (small) Andely; though they are usually considered as one, they are a busy place, and contains a population of 5000 (besides), who are engaged in the manufacture of ratteens, a coarse woollen stuff. Many apples are grown in the neighbourhood.

A very fine and a popular road for excursionists, leads from a village called andante, or in the town itself: at Little Andely there is a monument to his memory. A castle in the vicinity is said to have been built by Richard Cœur de Lion. It is now in ruins.

The mound, on which was erected the ancient esting hamlet, or in the town itself: at Little Andely there is a monument to his memory. A castle in the vicinity is said to have been built by Richard Cœur de Lion. It is now in ruins.

The mound, on which was erected the ancient esting hamlet, or in the town itself: at Little Andely there is a monument to his memory. A castle in the vicinity is said to have been built by Richard Cœur de Lion. It is now in ruins.
stone, gravel, and ashes, in many parts, but it is supposed to be not less than five miles in length, and nearly three miles in width visiting from the great extent of the excavations, and the forms of the lava, which separates into gigantic columns from fifteen to forty feet in height. Five miles north of Anderson is the village of Lower Eiel, and one not only for its beautiful scenery, but on account of its containing vast accumulations of an indurated volcanic mud, which by subsequent denudations has been broken into detached masses, presenting great vertical precipices and many varied picturesque exhibitions of natural luxuriance. It is not unlikely that much of the growth has been initiated in mathematical science by his mother. Of the same family, probably, was an Alexander Anderson, a native of Aberdeen, who graduated Doctor of Medicine at the University of Paris, and whose son was James Gregory, the inventor of the reflecting telescope. A book, entitled De Morbis Acutis Puerperarum, is remarkably thick with scriptural and classical quotations. (See Chalmers's *Bibl. Dict.*, and Brewer's *Edin. Encyclopa.*). In the Supplement to the *Encyclopædia Britannica*, there is a notice of the Alexander Anderson, or Professor Leslie, in which warm praise is bestowed upon the ingenuity, cleverness, and classic elegance of his works.

ANDERSON (SIR EDMUND), an eminent lawyer of the sixteenth century, in the early part of which he was celebrated as a defender of other authors and of himself. Edmund, who was a younger son, was educated at Lincoln College, Oxford, after leaving which he entered into the Inner Temple, and having been called to the bar, passed through the usual promotions, until, in 1582, he was made chief justice of the Common Pleas. This high office he held till his death, on the 1st of August, 1605. Chief Justice Anderson was one of the ablest lawyers of his time; he was learned in the laws of Queen Elizabeth, and was also one of the most rigid of the high prerogative lawyers of that time. He particularly distinguished himself by the zeal which he showed in favour of the established church, and with which his chief justice was commanded to put down dissent. We should scarcely, indeed, be going too far in saying of him that he was accustomed to regard law more than reason, and the will of the sovereign more than either. He seems, by his severity, to have made himself unpopular and odious with all parties. His printed works are *Reports of Cases argued and adjudged in the time of Queen Elizabeth*, in the Common Bench, folio, Lon. 1644; and *Resolutions and Judgments on the Cases and Matters agitated in all the Courts of Westminster*, in the latter end of the 16th century. These two works are reckoned of great authority. Three families, descended from this chief justice, through two of his sons, received baronetcies in the reigns of Charles I. and II.; and by his four daughters, who lived to be married, he became the progenitor of his family. Edmund was the eldest son of Martin, third baronet, of Buckinghamshire, the earl of Warrington, and the lords Monson. (*Biograph. Brit.*.)

ANDERSON (ALEXANDER), a native of Aberdeen, in Scotland, who in the beginning of the seventeenth century, while yet a student at the university of there, a private teacher of the mathematics in Paris. Neither the year of his birth, nor that of his death, is known. He is the author of the following works: *Supplement Apollonii*, 1613; *Ad Angulatarium Sectionum Analyticum Theoremata*; a *Francisco Vieta Foenenecris primum exegolgia*, at *Tractatus de curvae undulatiore additamentibus confirmatis*, quarto, Paris, 1615; *Vindiciat Archimedis*, quarto, Paris, 1616; *Exercitationum Mathematicarum Dicas Prima*, quarto, Paris, 1619. All these works are very scarce. Mr. Anderson also appears to have been selected by the executors of the eminent Vieta, who died in 1603, to superintend the publication of his unprinted manuscripts. Two treatises of Vieta, accordingly, entitled *De Equalizatione Recognitione et Emendatione*, appeared at Paris, in quarto, 1615, with a dedication, preface, and appendix, by Mr. Anderson. Mr. Anderson of Finchau, a brother (other authorities say, a cousin) of this Alexander Anderson, was the father of Mrs. Gregory, the wife of the Rev. John Gregory, minister of Drumoak, in Aberdeenshire, and whose son was the celebrated James Gregory, the inventor of the reflecting telescope. It appears that the name of Anderson has been initiated in mathematical science by his mother. Of the same family, probably, was an Alexander Anderson, a native of Aberdeen, who graduated Doctor of Medicine at the University of Paris, and whose son was James Gregory, the inventor of the reflecting telescope. A book, entitled De Morbis Acutis Puerperarum, is remarkably thick with scriptural and classical quotations. (See Chalmers's *Bibl. Dict.*, and Brewer's *Edin. Encyclopa.*). In the Supplement to the *Encyclopædia Britannica*, there is a notice of the Alexander Anderson, or Professor Leslie, in which warm praise is bestowed upon the ingenuity, cleverness, and classic elegance of his works.

ANDERSON (GEORGE), was born at Tunsford, in the shire of St. Albans, in Hertfordshire, in the beginning of the seventeenth century. He appears to have been reared in a great degree self-educated. In 1644 he left his native country to travel in the East, from which he returned in 1650, after having visited Arabia, Persia, India, China, Japan, Tartary, Mesopotamia, Syria, and Palestine. He was then taken into the service of the Duke of Holstein-Gottorp, who often pressed him, but without success, to publish an account of his travels. At last the strategem was resorted to of placing Adam Olearius behind the tapestry...
try of a room in the palace, while Anderson, who was very communicative in conversation, was led to relate his adventures to the duke; and in this way the whole story was first come to time out of hand, and committed to writing. He was afterwards prevailed upon to revise the manuscript, after which it was published in folio, at Sleswig, in 1669, under the care of Olearius. Anderson's travels, we believe, have never been translated into English. (See Biog. Unit.)

The first attempt at a publication of an Essay showing that the Crown of Scotland is Imperial and Independent; being an answer to W. Atwood's tract, entitled the Superiority and direct Dominion of the Imperial Crown and Kingdom of England, for the Sake and利益 of Scotland, and the Kingdom of Ireland, which had appeared the preceding year. As the subject discussed was one in which the people of Scotland at that moment took a very warm interest, the parliament, besides bestowing upon Anderson a pecuniary reward for his performance, ordered its thanks to be publicly returned to him by the lord chancellor, in the presence of her majesty's high commission and the estates; Atwood's book being at the same time ordered to be burnt by the common hangman. Anderson was further honoured by the commands of the parliament to publish such a work as might seem to be of the national independence; and an assurance was given that the cost of the undertaking would be defrayed from the public treasury. He therefore relinquished his profession, and the act of turning to London to carry on the engraving of the plates for his intended work. Before it issued from the press, however, he was carried off by a stroke of apoplexy, on the 3d of April, 1728. The editing of the work was then entrusted to Thomas Ruddiman. The first edition, which was published at Edinburgh in 1729, in the form of a magnificent folio, with the title of Selecta Diplomatium et Narrarum Scotiae Sine Praesertim. An elaborate preface was prefixed by Ruddiman. Anderson held the situation of postmaster-general, for which he was intimated in February, 1729, and was actually appointed and employed in the office of postmaster, when, in the close of the year, he was suddenly seized with the dropsy, and died Oct. 1729.

Anderson's name is prefixed to the Diplomata as the author of the publication, the credit to which he is entitled is very injuriously unjustly returned to him by the lord chancellor, in the presence of her majesty's high commission and the estates; Atwood's book being at the same time ordered to be burnt by the common hangman. Anderson was further honoured by the commands of the parliament to publish such a work as might seem to be of the national independence; and an assurance was given that the cost of the undertaking would be defrayed from the public treasury. He therefore relinquished his profession, and the act of turning to London to carry on the engraving of the plates for his intended work. Before it issued from the press, however, he was carried off by a stroke of apoplexy, on the 3d of April, 1728. The editing of the work was then entrusted to Thomas Ruddiman. The first edition, which was published at Edinburgh in 1729, in the form of a magnificent folio, with the title of Selecta Diplomatium et Narrarum Scotiae Sine Praesertim. An elaborate preface was prefixed by Ruddiman. Anderson held the situation of postmaster-general, for which he was intimated in February, 1729, and was actually appointed and employed in the office of postmaster, when, in the close of the year, he was suddenly seized with the dropsy, and died Oct. 1729.

ANDERSONIAN INSTITUTION. [See GLASGOW.] ANDRES, the general name given to the great range of mountains which form the cordilleras of the continent of South America. In the languages of the Incas these mountains are called Antis, and as they abound in copper and other metals, Humboldt is of opinion that the name is derived from the Peruvian word anta, which signifies a copper mine. In the province of Illas, the term Andes to the whole range, but it is unknown to the inhabitants of the countries north of the equator. These mountains are called by the Spaniards, Cordilleras de los Andes, or the Chains of the Andes, whence the word Cordilleras alone is sometimes applied to them.

In considering these mountains as a great feature in the physical structure of the earth, we may fix their southern extremity in the rocky islands of Diego Ramirez, off Cape Horn; in latitude 54° 15' south, and their northern termination in the 69th of north latitude, on the south bank of the Columbia River. There is probably an almost unbroken chain throughout the whole of that vast space, which is more than one-third of the circumference of the globe. It is difficult to say where the Andes of the Andes and the Andes of Peru continue, however, when once formed, without a break, stretching from the northern mouth of the river Atro, or the isthmus of Darien, which pours its waters into the Caribbean Sea, in lat. 8° 15' north, a distance, reckoning the whole line, from Diego Ramirez, 6° 15' of longitude west, both of them connected by a continuous series of ranges and tablelands, intervening by great intervals. The average width of their base is extremely narrow, considering their great length, in comparison with that of most other extensive systems of mountains; for, ex-
cept where the groups just mentioned occur, the breadth varies only from sixty to seventy miles. The greatest extension, from east to west, is between the parallels of 16° and 18° south, in one of the groups, where a base line perpendicular to the axis of the Chain Fold is nearly 700 miles in length.

The whole surface of South America is broken by four great systems of mountains, viz., the Andes; the mountains of Venezuela, running nearly at right angles to the Andes, and, parallel with the Caribbean Sea; the mountains of Brazil, lying east of the Andes, and about 300 miles to the south of the rivers Orinoco and Amazon; and the mountains of the Pacific, between the Amazon and the Rio de la Plata. The proportion, however, of mountain to plain is not greater than 100 to 10 in a number of instances, and rise like a vast wall along the western side of the continent, separating the plains drained by the Orinoco, Amazon, and Rio de la Plata, which occupy a space of 424,600 square leagues, from the narrow country between their western base and the Pacific Ocean, which does not contain more than 20,000 square leagues. For the convenience of description, we shall divide the range of the Andes into four parts, marked by the political divisions of the continent, and shall call them the Andes of Patagonia, of Tierra del Fuego, of Venezuela, and of Brazil.

The Andes of Patagonia extend from the fifty-sixth to the forty-second degree of south latitude, or about 970 miles. Cape Horn, which may be seen distinctly at sixty miles' distance, must be kept to about 3000 feet high. The greatest heights in the largest of the three chief islands (King Charles's South Land), composing the Tierra del Fuego, lie about the centre of the strait of Magalhaens: Mount Sarmiento is covered with snow all the year. According to Captain King, who explored the part of the sea beyond about 3500 or 4000 feet above the sea. Between Chiloe and the strait of Magalhaens the average height of the mountains does not exceed 3000 feet, though, according to Captain King, there are some which may be five or six thousand feet high.

South of the parallel of 40°, the Andes, instead of leaving a belt of land between their base and the sea, press close on the ocean, and thus assume a new character which they do not acquire to the very extremity of the continent, when we consider, that no other part of the American shore, or indeed of the American continent, made during the late survey under Captain King, can enable us to form a more correct notion of the Patagonian Mountains, and somewhat to rectify former delineations and descriptions of them. Without entering at present on a particular consideration of the mountains of Tierra del Fuego, which require a separate examination, we may trace from the bottom of Admiralty Sound (in King Charles's Land), and covered with perpetual snow. Mount Sarmiento belongs to the mountains that skirt the south side of the Gabriel channel; the whole are supposed to be of volcanic origin, and composed of some of the most extensive glacier surmounts this range that runs along the Gabriel channel.

The extreme point of the South American continent, Cape Froward, (53° 56' 45" S. lat., 71° 14' 31" W. long.) rises on the northern shore of the mainland, which is a mass of high mountainous land, attached to the continent by a narrow neck of low country. It appears that the Strait of Magalhaens, from Cape Virgins westward to the isthmus of the Brunswick Peninsula, following the northern shore of the mainland, is a vast sheet of water, with nothing to interrupt its wide sweep, the only exceptions being the mountains bounding the archipelago of Chiloé. It is not improbable that the snow-covered peaks of the Andes may rise to the great level of 15° of the archipelago of Chiloé. The glaciers, no doubt, pour into the creeks and inlets abundant of fresh water, but are not far enough removed from the interior to give birth to rivers.

From the southern extremity of Wellington Island (56° 5' S. lat.), which is the largest island that lines this coast, being about 138 miles long, a range of high land runs...
northward into the island. The highest point, called Cathedral Mount, from its resemblance to the spire and buttresses of a cathedral, may be seen from the ships. It appears probable, then, that the Cordilleras here, as well as in their more northern course, consist of various parallel chains, running generally north, and forming, by the depression of the intervening parts, a series of low lands, valleys, and channels into which the sea has penetrated.

Those who have not the opportunity of seeing Captain King's charts, and his book of sailing directions, will find a good general description of this coast by the same officer, in the 'Narrative of a Scientific Voyage to the Pacific.'

The circumstances of mountains in this part of the Andes being covered with perpetual snow does not afford any certain guide for determining their height, if compared with mountains within the same latitudes in Europe, such as the Pyrenees and the Alps; because the limit of perpetual snow descends as we approach the pole much more rapidly than it does in the northern hemisphere. Thus, in the island of Georgia in the Southern Ocean, which is situated between the fifty-third and fifty-fourth parallels of latitude, corresponding to the latitude of central England, the line of perpetual snow comes down to the sea-shore, rendering the island, which is ninety miles long and thirty broad, wholly uninhabitable.

This line lies between the forty-second and twenty-fourth degrees of latitude, an extent of about 1200 miles. No accurate measurements have been made of the lofty summits, and all we know on this subject is very vague. Tupungato, in lat. 33° 24', is considered the highest point of part of this Andes, and no accurate offsets can be seen on its summit during certain periods of the year. Now Humboldt estimates the limit of perpetual snow in latitude 33° at 12,780 feet; and if this be correct, Tupungato cannot be the highest point in the Andes of Chili, for the pass of El Portillo, by the barometrical measurement of the author of the article Chili, in the 'Encyclopædia Britannica,' is 14,360 feet above the sea. That same author supposes this part of the Andes to rise as high as 18,000 feet. South of the latitude referred to there is another lofty mountain called El Descabezado, which probably got its Spanish name (signifying 'beheaded') from its truncated summit, on which there is a plain six miles in diameter.

There are several passes across the ridge, the most important of which are those on the great line of road between the city of Buenos Ayres and the port of Valparaiso on the Pacific. These mountain-passes lie between the city of Mendoza in the eastern plain, and Santiago, the capital of Chili. From them there is a magnificent and most magnificent view of the western horizon, and the Bura and Espinoza, quoted by Humboldt, is 700 toises or 4486 English feet above the level of the sea, to La Cumbre, (that is, the summit,) the road ascends to the height of 12,780 feet, and then descends to the city of Santiago, which is 2614 feet above the Pacific.

Between the thirty-third and twenty-fourth degrees of latitude, two great mountain-chains form as it were tresses on the eastern side of the range, being the most southerly of those articulations we have spoken of. The one, called the Sierra de Cordova, lies between the thirty-third and thirty-first degrees of latitude, advancing like a promontory into the pamaps (plains) of the Rio de la Plata, as far as the sixty-fifth degree of longitude; the other, called the Sierra de Salta, which has a general direction parallel to the other, lies between the twenty-eighth and twenty-fourth degrees of latitude, and extends eastward to the sixty-fourth degree of longitude, or about 400 miles from the axis of the Andes. In neither of these offsets do the mountains rise to very considerable elevation.

In the Chilian Andes the steep face is on the eastern side, to which there is not a progressive ascent, as on the western side from the Pacific.

Standing on the western foot of the Andes of Chili and the sea, the face of the country is diversified with several low ridges of hills, gradually diminishing in height as they come nearer the coast, and intersected by the numerous streams which flow from the mountains. Some of these branches from the eastern front of the ridge, either to sea or to the Andes, are more than five degrees east, but from that point it turns suddenly to the N.W. and continues in the same direction until it reaches the fifth degree of latitude, when it again suddenly changes to N.E., the line of coast following the infelections of the mountains; thus the northern extremity of this part of the Andes is not much more than five degrees of longitude west of the southern termination. Between the nineteenth and twentieth degrees of latitude, not far from the city of Potosi, the range separates into two great branches, now called the Eastern and Western Cordilleras of Bolivia. This eastern cordillera contains in a wide course, with an inclination to the west, for about 500 hundred miles, terminating in a plain watered by the Paro, one of the great feeders of the Amazon; and in this Cordilla the Andes attain their greatest elevations. About 90 miles south of the city of Quito, was long considered to be the loftiest point in the whole range, being, according to Humboldt, 3350 toises, or 21,436 feet above the level of the sea; but if the trigonometrical measurements of Mr. Paro, in the Andes of Peru, be allowed, the eastern cordillera of Bolivia are considerably higher, viz. the Cerro Nevada de Illimani, eastward of the city of La Paz, which is 24,350, and the Cerro Nevada de Soria, which is 25,250 feet above the sea.

We have spoken already of the great parallel of latitude of the Andes of Chili, the Sierra de Cordova and the Sierra de Salta; a third, and one of far greater extent, occurs between the twenty-second and seventeenth degrees of latitude, called the Sierra Nevada de Cochabamba. It constitutes a great lateral range, which separates the Andes of Peru and those of the Andes, between the cities of La Paz and Oruro. The general direction of the mountains composing this vast group is from west to east, and they form on this part the water-sheds of two rivers since they are directed one into the Rio de la Plata, and the other into the Rio de la Plata. Their eastern slope is very rapid, and their most lofty summits exceed the limit of perpetual snow, which is here 14,700 feet above the sea, and these are situated in the northern part of the group.

The group of Cuzco, so called from the city of that name, on its eastern boundary, is by far the most extensive of those lateral assemblages of mountains which occur at intervals along the eastern side of the Andes, having an extent of surface three times as large as the whole of Switzerland, and with a mean height of 8300 feet. Proceeding from this group, a second bifurcation of the range takes place, near the thirteenth degree of latitude, the eastern chain extending eastward of the city of Guanta, the western holding a course to the west of Guanta, and then making a gradual descent. They unite again between the twenty-second and sixteenth degrees of latitude, to form the group of Pasco, inclosing another basin, or rather table-land, having an elevation of nearly 11,000 feet above the sea, but not one-half so large as the previous. Above these two mountains covered with perpetual snow, called Toldo de la Nieve, (tent of snow,) which are seen from the city of Lima. North of the group of Pasco, the Andes divide into three parallel branches, or subordinate chains, which continue to the northern extremity of Peru, and in the group of Loxa, about the fifth degree of latitude. The eastern and central chains are of comparatively low elevation, for in no part of their course do they attain the limit of perpetual snow; but the western chain, which runs along the coast, has the three snow-clad summits of Paleogate, Mayo,
pas, and Huayllillas. Between this last mountain, situated near Guamachoco, in latitude 7° 25', and Chimbora, a distance of more than 400 miles, the Andes rise in no part to the height of the perpetual snow limit. Between the mountains and the coast of the western low country of Peru is very narrow, rarely exceeding 50 miles.

The Andes of Colombia.—At the northern limit of the group of Loxa, between the third and fourth degrees of south latitude, the main range divides into two subordinate chains, which are situated in the department of Cuenca by their uniting in latitude 2° 27' to form the group of Aausay, which last contains a table-land, or plateau, at an elevation of 15,520 feet, almost within the region of perpetual snow. Beyond this group another bifurcation takes place, the eastern cordillera of Cuenca, of which the range of Chimbora (21,415 feet) and Ylinitas (17,386), the western cordillera containing the mountains of Sangay and of Cotopaxi (18,558). The chains unite in the narrow ridge of Chinchaco for a short distance, but separate out again afterwards to form the vast table-land of Quito, which is bounded by stupendous mountains on the east side, and is inclosed by the reunion of the chains at the volcano of Imbabura, in latitude 6° 20' N., near Villa de Barba. In the south of this group is situated the small range of Choco, between 8° 35' and 9° 20' S., and Cayambe (19,625); in the western, are Pichincha (15,924) and Cachachaco (16,428). These chains inclose a table-land, which is divided longitudinally by low hills, and on the east of these is the plateau of Proombo and Chillo; or the part of Chinchaco and La Llanzą, which is formed by an equator passes through a village in the valley of Quito. In no part of the Andes are there so many colossal mountains brought together as on the east and west of this vast table-land, the power of Quito, one degree and a half to the south, and a quarter of a degree, and the subordinate chains do not unite again. The eastern branch spreads out to form the group called Paramo (desert) de las Papas, in which are situated the sources of the Magdalena, and its tributary the Cauca; and in latitude 2° 5', this group sends off two branches, which inclose the cities of Bogota and Popayan. The general inclination of the Andes, from the northern extremity of the table-land of Quito to the neighbourhood of the city of Popayan, changes from N. 6° E. to N. 36° E., following the direction of the coasts of Esmee and Barbacca. North-east of the city of Almaguer, the great range of the Andes form a continuation of the chain from the northern extremity of the table-land of Quito to the north-east of the city of Almaguer. The eastern cordillera extends towards Santa Fe de Bogota and the Sierra Nevada de Merida, east of the Magdalena river: the central cordillera runs parallel with the eastern to the fifth degree of latitude. The western cordillera of New Granada is low, the Magdalena, and it continues to divide that river from the Cauca until their junction in latitude 9° 23'. The western cordillera separates the valley of the Cauca from the low country of Choco, which last forms the eastern shores of the Gulf of Panama. In the central cordillera is the celebrated pass of Quindiud, between the cities of Santa Fe de Bogota and Popayan. Between the second and fifth degrees of latitude there are many places where the mountains rise above the region of perpetual snow; the most elevating are the Pic de Tucume, 9,600 feet, and Calinche, 18,314 feet, and is the highest point in the range of the Andes north of the equator. But, in no part of the eastern cordillera, within the same degrees of latitude, is there any height which exceeds 12,700 feet; in the western, however, there are the snowy summits of Chinchaco, and in latitude 8° 12' those of Muchuchies, and it is only in this eastern cordillera that any mountains rise to the perpetual snow limit beyond the fifth degree of latitude. The slope of this cordillera is extremely rapid, that east, west, and north, upon which it is crossed by the Rio Mochima, and the Rio Orinoco, but on the western side there are several abutments, in the form of great plateaus, or table-lands, and on these are situated the cities of Santa Fe de Bogota, Tunja, Sogamoso, and Leira. They have an elevation of from 8500 to 9600 feet. The western cordillera of New Granada is low, compared with the eastern and central, the highest point, the Pic de Torra, situated S.E. of the city of Novia, not rising to the limit of perpetual snow. There is a gradual fall of the chain to the mouth of the Atrato on the Caribbean Sea, where there is a complete termination of the great mountain-range of South America; between Cucipa, a small river near the city of Bogota, and the Rio Choco, the Andes of Cundinamarca, form the Sierra Nevada de Merida; but they are united to the mountains, which run from west to east along the coast of Caracas, or Venezuela, by the four cordilleras of Chichavaco, Boliche, and Chipicre, which are from 8600 to 10,000 feet high. The mountain-system of Venezuela extends 500 miles, from the Andes of Cundinamarca to the gulf of Pari, and, like the great range of the Andes, is composed of a series of parallel chains inclosing longitudinal valleys, or table-lands, at great elevations. The Silla de Caracas is the loftiest point, and rises 8630 feet above the sea. [See America.]

North of the central cordillera of New Granada, and in those which extend northward between the cities of Bogota and the Rio Grande de la Magdalena to the sea lake of Maracaibo, there rises a vast insulated group of mountains called the Sierra Nevada de Santa Marta. They extend about 45 miles from west to east, and their highest summits—El Coche and El Granduque—reach 23,700 feet, or the perpetua snow. No exact measurements of these heights have been made, but Humboldt estimates the most elevated to be 19,000 feet above the level of the sea.

The higher regions of the Andes present themselves under these different forms, and in activity volcanoes, such as Coto- paxi, which have only one crater of vast dimensions, or conical mountains, with summits more or less truncated. Those which have been torn by a long succession of erup tions, like El Chirripo, having sharp points, like what are called needles in the Alps. The third is the rounded form, like Chimbora, the most majestic of all, which, when seen from the Pacific, in a clear state of the atmosphere, stands prominently out from all the surrounding mountains, and Towers proudly on the coast of the Andes, like the dome of St. Peter's looking down upon the antient monuments of the Capitol. The Andes appear as a chain only when seen from a distance. When we are placed within the range, as in the table-land of Quito, we see that the volcanic formations, being crowned by a number of table-lands, thus all those volcanic peaks, such as Pichincha, Cayambe, and Cotopaxi, although they have separate names, constitute, for more than half their height, one mass, like a mighty peak, which we look upon as a separate mountain. Quito as distinct mountains rising out of a plain. The great elevation of such table-lands makes it difficult to believe the height of the mountains to be so considerable. Thus Chimbora is 273 feet less in elevation above the plateau of Pynes, the valleys of the Cordilleras present situations so wild as to fill the mind with fear and admiration. They are formed by vast rents, clothed with a vigorous vegetation,
and of such a depth that Vesuvius might be placed in them without overtopping the nearest heights. Thus, the sides of the eastern valleys of Chota and Quena are nearly 4,225 feet in perpendicular heights; their breadth does not exceed 2,000 feet. The deepest valley in Europe is that of Orela in the Pyrenees, a part of Mont Perdu; but this, according to Ramond, is not more than 3,290 feet deep.

The Andes contain the sources of the greatest rivers of the world, the Amazon, and the La Plata, besides many others of considerable extent, such as the Magdalena and Orinoco; but on the western side of the continent, owing to the proximity of the mountains to the sea, there is no river of any magnitude.

**Geological Structure.**—We are indebted for nearly all the information we possess on this subject to the Baron Alexander Von Humboldt, but, for reasons which we shall presently show, what he has told us conveys little more than a general knowledge of the existence of certain classes of rocks and minerals. While that illustrious traveller left Europe to visit South America, geology was in a very different state from that in which it now is. He had been educated at Freyberg, where he (among other things) had the advantage of the authors whose works have been only since the period when Humboldt returned from South America. We have already intimated that nature has not always left us with a clear idea of the materials that accomplished traveller are unavailable in the present more advanced state of geological science on account of their being described in the theoretical language of the Freyberg school; and for reference to the works of Humboldt, which later observations have proved to be untenable.

When, in describing the unstratified rocks, he speaks of old and new granites, of primitive and transition syenites and porphyries, the terms are scarcely intelligible to a modern geologist. For of the present day, general reasons with regard to the rocks themselves, or the strata with which they are associated, can safely be founded. But the geological characters of strata spread over so vast an extent of country could only be adequately described by a long continued labour of observation, by many geologists, previously well instructed in all the knowledge of modern times respecting organic remains, and it is therefore no reproach to Baron Humboldt if he has left that field unexplored. Geology formed also but a part of the works of that illustrious traveller. When we follow him along his route, and compare his observations of personal observation with the extent of country which he never saw, we discover at once that all he could tell us is but a small portion of the geological phenomena of that vast region. If it has required years of the exertions of many labourers to arrive at our present knowledge of the geology of Europe; if a single volcano, like Etna, has occupied the attention of naturalists for half a century, and the investigations of the most eminent professors to light important facts unnoticed by their predecessors, what could be expected from the single visit of a single individual, however great his powers, to a whole continent of volcanoes, many of which greatly surpass Etna itself in magnitude? Even Von Humboldt himself believed that he had attained my object, if the feeble sketches contained in this work shall excite other travellers to visit the regions I have traversed. He is here speaking, it is true, of natural scenes alone, but I do not see how he would say the same regarding all the other natural phenomena. The research. In everything which relates to the exact determination of the ages of the sedimentary deposits; the changes of position which they have undergone; the organic remains which they contain; the alluvial accumulations of every part of the relative ages of the undifferentiated and volcanic rocks to each other, and to the strata with which they are associated, in short, with regard to almost all the most important phenomena upon which the general principles of the science of geology depend, the Andes, and, indeed, the whole continent of South America, may be considered as remaining still an unexplored field. We are far from undervaluing the labours of Humboldt; on the contrary, we have always looked with admiration and astonishment at what he accomplished, both by his own observation and the skillful publication of materials obtained from others. But it is important for the cause of science that too really an assent should not be given to the sweeping generalizations which have sometimes been attempted to be drawn from his observations: for a more deliberate investigation will show that still is pending the perusal of his works, respecting the geology of South America, does not amount to much more than a knowledge of the existence of certain great classes of rocks, in the northern half of the continent, and, in their composition, in a broad outline to geological science. From the materials scattered through his various works, and from a few hints supplied by others, we have been enabled to draw up the following brief sketch of the geology of the Andes, as well as of other portions of South America. This sketch is not intended to be a complete outline of the mountain-range. Such of our readers as wish to investigate the subject more fully than we are able to do in this place, consistently with the plan of the work, must go to the original sources, especially to the volumes of Humboldt, which are there the best guide to an acquaintance of matter the most vast, instructive, and entertaining.

The researches of Humboldt did not extend beyond the provinces of Upper Peru, so that our knowledge of the strata and rocks of that great portion of South America which has since been illustrated by the researches of Professors Le Ruer and Perdu, and the observations of the Perners, is still, in places, shrouded in mystery. Travellers speak of meeting in their routes the mountains with granite and mica-slate, and clay-slate, porphyry, sandstone, and so forth; and the low countries between the shores of the Pacific and the base of the Andes is said to be composed of sandstone and mica-slate, with an abundance of various minerals. How little geological information such notices convey it is unnecessary for us to point out. Thus two thousand miles of this vast mountain-range, containing, no doubt, the most curious and important geological phenomena, may be said to be almost unexplored; and there is a field which, if opened, would be the most important branch of the sciences; for the 'land of fire,' the most destructive of volcanic phenomena, and the 'land of fire,' the most destructive of volcanic phenomena, may be only partly known. Here we have a subject which is not without an important moral lesson, for the soil of the volcanoes of the Andes, and the adjoining islands of the western coast of South America, is almost exclusively composed of sandstone and mica-slate. The clay-slate contains Mount Sacramento, already referred to, and east of it, Mount Buckland, which is described as a pyramidal block of slate, with a sharp edge. It is seen that Humboldt regarded this formation as an accumulation of gravel. Such a formation, 800 feet high, is composed of sandstone and mica-slate, and the height is about 4000 feet. This slate formation, which occupies the strata of the strait, contains long valleys, often furnished with a rich mould, and producing trees of considerable dimensions. The region east of the clay-slate, at least along the north-east coast of Venezuela, is covered with a forest of grass; and that west of it, only stunted trees. It is remarkable, that the innumerable small islands which characterize the western parts of the strait are not found in the slate formation. This formation extends from Cape Perdu to the entrance of the strait, and from Cape and the Gabriel Channel and Admiralty Sound, in a direction E. S. E., and possibly continues to Cape Success, at the strait Le Maire. The east shore of Tierra del Fuego par-
takes of the character of the Patagonian Pampas. The south shores of Hoste and Navarin islands, which also belong to the Tierra del Fuego group, are hornblende, which is also the chief component at part of Cape Horn.

Clarence Island is of a more ruged form than King Charles’s Land, and tolerably verdant; in the Barbaram channel, which separates it from Desolation Island, the first impression which the eye forms is of a great basin or island, thickly strewed, and form the transition to the rough granitic mountains of the western part of Magalhães’s strait. The highest mountains, as we have observed, are in the slate formation, on the western side of King Charles’s Sound, 9350 feet in diameter. It also contains a large tract of lime-stone and Tierra del Fuego; and Captain King’s Charts.

Volcanos are said to exist in the Andes of Patagonia; and of these there are mentioned San Clemente in lat. 46°, Medialar in lat. 44° 30’, and Minchimísvaor in lat. 43°. The most remarkable feature in the physical constitution of the Andes of Chili is the great extent of volcanic action that has existed in past ages and is still in operation. No less than nineteen points of eruption, situated in a continuous line from south to north, the points in the direction of the range, which have heaped up their ejected matter so as to form lofty mountains, have received distinct names, and there are probably many more of no inconsiderable importance which are still unknown. The most remarkable of these is Villarrica, which latter disperses the Volcan, with the smoke, in lat. 34° 10’, and Peteroa in lat. 35° 15’. Villarrica is always in a state of activity, and may be seen, it is said, at a distance of 150 miles. Our more detailed geological description is, from want of materials, confined to the Andes of Peru and Colombia, especially the latter.

The Stratifled Rocks.

Gneiss is found at intervals throughout the greater part of the range, often associated with granite, and often passing into marble-slate. It frequently contains large quantities of garnet.

Mica-Slate is, next to porphyry, the rock of most frequent occurrence in the Andes, and more especially north of the equator. In the Nevada de Quinilu of New Granada, it appears to have been formed beneath the great plains. In some places, beds of granular limestone, occasionally resembling the finest Carrara marble; but limestone, subordinate to gneiss and mica-slate, is a much more rare occurrence than in the Alps and Pyrenees. Not far from Popayan, it contains beds of quartz, and beds of sandstone, sulphur being found in the quartz, and in one place Humboldt observed a bed of lamellar graphite. It often passes by insensible gradations into clay-slate.

Andes occur in a spotted, small extent in the Andes. North of the equator, it is found immediately under secondary formations in the table-land of Santa Fe de Bogota, and south of the equator it serves as a basis to the porphyry in the Andes of Quito. It is found immediately beneath the sandstone, and in the formation of the range in the rige of the Andes of Peru, and rests on granite on the western declivity of the same part of the range: but Humboldt is of opinion that the chief mass of the slate-rocks of South America belongs to the transition series of the Wernherian school, rather than to primary strata.

Quartz Rock. South of Chimboraos, near Hectacumbas, in the Andes of Quito, there occur enormous masses of quartz rock mixed with mica. The primitive quartz observed in the mountains of Europe cannot be compared in thickness nor extent to that of South America: on the western declivity of the Andes of Peru, it attains the enormous thickness of 6000 feet, and there and elsewhere it covers many leagues. It contains gold, mercury, and silver, and is productive in a quartz vein, and in the vicinity of a sulphur mountain of Tiscacan, in latitude 2° 13’S., the sulphur is contained in a bed of quartz 1300 feet thick, subordinate to mica-slate, at an elevation of 8000 feet. Gold and sulphur were found in a quartz rock in the Andes near Caxamarca, and celebrated quicksilver mines of Guanevalica in Peru are also in the same rock.

Red Sandstone. A red sandstone occurs to a vast extent in the Andes of Peru, and over a great part of Colombia. It is composed of bituminous sand, and is one of the clearest of that range, and to the shores of the Atlantic. It is often a coarse conglomerate, and passes through all gradations of structure to that of a fine-grained sandstone. From Humboldt’s description of its occurrence at different places, it appears to belong to different ages, to the old red sandstone, or newer beds of the gravawacke series, and to the lower beds of the new red sandstone, the rothe todte legende of the Germans. A red sandstone covers an extent of country in leagues in length, forming the whole table-land of Tucac and Cuenca in the Andes of Quito, at an elevation of from 9350 to 9600 feet, and it rises in the Paramo de Saar to the height of 12,150 feet, the thickness of the whole mass exceeding every where 5000 feet. The base of the province of Quito is generally very argillaceous, sometimes clayey, and alternates with a conglomerate containing fragments of porphyry, and Humboldt found in it trunks of monocotyledonous trees four feet long and fourteen inches in diameter. The greatest thickness, as is frequently the case, is near salt-marsh, and a sandstone, of a calcareous mass, contains in it trunks of trees of a length of several hundred feet. This sandstone appears at the surface over the greater part of the llanos, but towards the east it is covered by beds of limestone and gypsum. In New Granada, the slaty fine-grained sandstone occurs to a greater extent than the coarse conglomerate. The sandstone, entirely formed of quartz, and often rising to 5000 feet above the level of the sea; the sandstone of the table-land of Santa Fe de Bogota, at an elevation of 10,780 feet, is composed of small quartzose grains, sometimes so closely united as to give the rock the appearance of a granular quartzite; in these districts, the limestone, and animal remains are extremely rare in it. A similar red sandstone occurs in the great table-land of Caxamarca in Peru, at the height of 9350 feet. In the red sandstone of Santa Fe de Bogota, beds of sandstone, the great tract of red sandstone, between the lower part of the river Magdalena and Santa Fe, coal occurs in several places. Coal is also found at Huanauco in Peru, at an elevation of 14,750 feet,—the greatest elevation probably at which coal is known to occur under the equator, but whether that is a subordinate formation in the red sandstone does not appear. Humboldt observed, between the seventh and eighth degrees of south latitude, a great formation, which he has called a secondary quartz rock, as it seems to replace the red sandstone. Humboldt considers the sandstone of the Andes, and is covered immediately by magnesian limestone. It is a granular and compact quartz, stratified, without organic remains, and attains a thickness of several thousand feet.

The red sandstone of New Granada is covered by lamellar gypsum and by fossil limestone. In the basin of the Cauca and the plateau of Santa Fe, the former being 5750 feet lower than the other, the three formations of sandstone with coal, limestone, and gypsum, occur in one mass, from 9350 to 13100 feet, and are frequently divided regularly, and at Zipaquirs, in the table-land of Santa Fe, rock-salt associated with this same gypsum and limestone has been worked for ages. The saliferous deposit is not less than 830 feet thick, and is covered by great masses of granular gypsum, the red sandstone appearing beneath the saliferous clay. Deposits of rock-salt and brine-springs are of frequent occurrence in traversing the eastern cordilleras of New Granada from S.W. to N.E. for a distance of more than 50 leagues. Rock-salt is also found in the Peruvian provinces of Chachapoyas, on the eastern declivity of the Andes, and, what is remarkable, contains there masses of galena or sulphur of lead. At Huara, on the coast of Peru, between Lima and Santa, rock-salt is worked like near Manta, in Ecuador; and at the same place, beds of pure rock-salt. The red sandstone of the llanos of Venezuela is covered by a whitish-grey compact limestone, and above the limestone there occurs gypsum and salt. Above the red sandstone, according to Humboldt, is an equivalent of the zeolitic genus, the magnesian limestone of English geologists. It is met with in various parts of the Andes of Peru, at elevations from 9000 to 14,000 feet, and it contains beds of mercury, with its ore natural sal, and in the mines at Mansfield, in Germany, near Pasco, in the Andes of Peru, at the height of 12,800 feet. In the mine Santa Barbara, near Guanevallica, an immense bed of sandstone, containing a deposit of mercury, is met with in this same elevation. It does not appear, from the observations of Humboldt,
that any of the secondary strata later than the magnesian limestone occur in any part of the Andes, or the adjoining country, which was visited by him, and he expressly says that he never met with either olite or chalk. The only tertiary form of mine that he speaks of is the table-hill of Santa Fe de Bogota, which appears to have been a lacustrine deposit, and in which he found enormous bones of the extinct species called the mastodon. That the whole series of tertiary deposits above the magnesian limestone should be wanted, and that there should be a total absence of all tertiary marine beds in one-half of the continent of South America is very extraordinary, and scarcely probable. But notwithstanding this imperfect state of our knowledge respecting South America, an eminent French geologist, M. Elie de Beaumont, in his eagerness to generalize a favourite theory,—a theory intended to show a connexion between the elevation of mountain-chains and the extinction of species of organic remains in the successive sedimentary deposits,—has, of late, not hesitated to declare his belief, that the whole line of the Andes must have been upheaved by a single and instantaneous convulsion; that that convulsion was the last which has taken place in the solid covering of the earth, and that, by the agitation which it produced in the rocks, the immediate surface of the deluge. So great a departure from the rules by which philosophical inquiries ought to be guided is a remarkable proof how dangerous, in a progressive science, an attaching to a pet hypothesis may prove:—how very slender arguments with a mere semblance of plausibility will be admitted, even by a man who has worked assiduously in the field of observation, and knows full well how extensive and accurate our observations must be, before any general conclusions can safely be drawn from them.

The Unstratified Rocks.

The most elevated summits of the Andes—the composition of which is—known—are either volcanic, or are composed of porphyry. Granite, which, in the old continent, rises to elevations of 15,000 feet, is never found at great heights in the Andes, and, indeed, forms but a small part of their external surface. Humboldt says, that one might pass years in travelling through the Andes of Quito and Peru, almost without seeing it, and he must meet it, if at all, generally at 11,000 feet. It is seen at the foot of the range in the plains of the Orinoco and Amazon, and on the shore of the Pacific between Lima and Truxillo. But Humboldt distinguishes three different kinds of granite, one which he calls primitive, and considers as the foundation upon which all other rocks were deposited, in accordance with the Wernerian hypothesis; another, which he makes of posterior formation to gneiss, but anterior to mica-slate; and a third, older than clay-slate, but of a formation subsequent to mica-slate. Modern geologists hold that granites, undistinguishable from one another in their mineralogical characters, are associated with some of the most modern of the secondary strata; and these distinctions of Humboldt are founded upon erroneous theoretical views, because the granite that lies under the gneiss may have been protruded to the surface later than that which is associated with the mica-slate. The same observations apply to his old and new syenites,—a variety of granite containing a mixture of hornblende, which is found in several parts of the Andes of Peru and Colombia. Porphyry is, by far, the most widely-extended of all the unstratified rocks of the Andes, and Humboldt distinguishes two kinds,—one which, he says, reposes immediately upon primitive rocks, and is not pelitic in character; and another rock, the third kind, is often red, and metals and appears to belong to the transition period. The primitive porphyry is of rare occurrence; it is found on the western declivity of the Andes of Peru, at an elevation of about 3500 feet, and rests immediately upon granite. In the Andes of Colombia, an innumerable variety of porphyritic rocks, the masses of which are from 16,000 to 19,000 feet in thickness, there is not one which Humboldt considers as belonging to the primary period. They often exhibit porphyry at Pisco, at the western declivity of the volcano of Purnaca, where there is a magnificent colonnade, the pillars of which are eighteen feet long, and formed of regular prisms of five, six, and seven sides. They have also very often a globular stellate appearance. They were2 at first considered as balls, which separate by decomposition into concentric layers. This globular structure is extremely common in the unstratified rocks of the Andes. To describe the various kinds of porphyries, or even their chief localities, would be both tedious and unprofitable; it is enough to say, that they occur throughout the whole range of the Andes, at all elevations, and that the highest summits are frequently composed of them.

Next in importance to porphyry among the rocks of igneous origin is that called trachyte, from *tronchus*, rough, because it has a harsh, rough feel. There are many varieties of it, and it is composed of a hard rock with a granular basis of glassy felspar, and including separate crystals of glassy felspar usually with a mixture of hornblende, and often mica; and these materials are united in so many different proportions as to produce varieties of various colours. It is found mostly in the table-hill of the Andes, and is most frequent in the south of the range of the Andes of Chili, Peru, and Colombia; the porphyries are often covered by them, and it is not easy to define the limits between trachytes which pass into porphyry and those which are produced by active volcanoes. Like porphyry and basalt, trachyte is often found in columns of great regularity, as in Chimborazo, where it is met with in slender prisms of 50 feet long. It occurs in enormous masses, for Humboldt says that in Chimborazo, Pichincha, and Anti-sana, or Pichincha, are there any rocks of this class; but basalt characterised by olivine, and regularly columnar, is found in the table-land of Quito, near Popenoy, and on the western banks of the Cauca. The basalt, or trap-formation, as Humboldt calls it, is a reddish rock, the formation of the Andes, is accompanied by clay of great thickness, which renders the passage of the cordilleras from Popenoy to Quito extremely difficult during the rainy season.

VOLCANOS.

No part of the world has been subjected to greater revolutions from volcanic fires than the range of the Andes. The igneous action has been confined to this western side of the continent, for, east of the Andes, throughout the whole country from the Pacific to the mountain-ridge of the Atlantic, a space of more than 500,000 square leagues, neither porphyry, basalt, trachyte, nor any active volcanoes have yet been discovered, either in the plains, or in the mountains of Guiana and Brazil. In the range of the Andes, where their products do not cover the whole surface, they are found in insSELUSS masses on the ridges and on the sides of the mountains rising in the form of pyramids, or of cones, amidst the stratified rocks of different ages. All the volcanoes, whether extinct or active, have burst forth amidst porphyries, basalts, and trachyte, all the rocks commonly called primitive, such as granite, gneiss, and mica-slate, disappear, and are replaced by porphyries and trachytes. That these last substances are often granite, gneiss, and slates, altered by the action of heat, and the impossibility of giving the circumstances connected with them, and the trachytes of the Andes frequently include fragments of those primary rocks. It is very difficult to draw the line of separation between the various kinds of unstratified rocks, all of which are the same, and the volcanic rocks, are often observed to change into traps and trachytes; these last into the lavas of active volcanoes; and thus any conclusions as to the ages of the unstratified rocks, drawn from mere mineralogical differences, are open to many difficulties. The glassy lava, a calcic obsidian, is often met with in the Andes, and exhibits many shades of colour, from dark black to a clear, colourless glass. Beds of it, 16 inches thick, occur in the trachyte of Quito, in the vicinity of the volcano of Purnaca, and all the rocks of the volcanic region, including nodules or lumps of obsidian are thrown out by the move-
Popayan, to the distance of several leagues, and scattered about like fragments of flint on the chalk-downs. Pumice-stone, which is nothing more than obsidian frothed up by the admission of air or watery vapour to it when it was in a fluid-state, is found to a great extent in many of the volcanoes of the Andes; there are immense subterranean quarries of it at the foot of Cotopaxi, and for more than 40 leagues westward of the volcano, the ground is covered with fragments of pumice and cinders of trachytes. Volcanic-tuff, which is a stone more or less compact, made up of fragments of lava-intervals and sand, is also found in large masses; it forms immense tracks on the flanks of the Andes and on the table-lands. It is often very friable, and in many places contains blocks of pumice, which are sometimes from 35 to 30 feet long. In a region where almost all the burning-volcanes are above the limit of perpetual snow, deluges of water are often produced by the melting of the snow, and by the bursting of cavities in which water had accumulated by infiltration, and these carry along with them the loose stones, sand, ashes, and dirt, with a violence and power of the tuff, of a magnitude in proportion to the volume of water and the loose materials it meets with in its descent. A liquid mud sometimes issues from the sides of the volcanoes of the Andes, as when, in 1698, the peak of Carguaraizo sunk down, and the former bottom of a lake was covered with a mass of slime; and, what is very remarkable, small fish which inhabit the streams of the province of Quito were seen in thousands, enveloped in the muddy eruption. These fish live in subterraneous lakes; at the time of great eruptions the sides of these lakes are rent, and the fish is partly carried in the crevices and are enveloped in the mud formed as the water rushes through the loose ashes and soil. The almost extinguished volcano of Imbabura ejected in 1691 so great a quantity of fish, that fever which prevailed at the period was attributed to the shock not from a volcanic eruption but from the eruption of fishes, which was, says Humboldt, like one of the colossal and eternal monuments placed by the hand of nature to mark the grand divisions of the globe. According to a very remarkable account, which was related to the author by a person who had lately been in that region, a species of catfish, called L'Altar, or in the Quichoa tongue, Capa-Urcu, was once higher than Chimborazo, but in the reign of Osannia Abonmada a prodigious eruption took place, which lasted eight years, and broke it down. The summit of this remnant of the ancient mountain, has been split into a number of threads, and when the rays of the setting sun strike upon these ice-clad ruins, the most magnificent play of colours is produced. The volcano of Antisana, which is 15,120 feet high, appears never to have had its summit pierced, the lava has burst forth from an opening in the side. Pichincha, which is 15,920 feet high, has a crater, the edges of which are covered with pumice, but it does not appear to have ejected a current of lava since the formation of the adjoining valleys. The volcano of Cotopaxi is the most lofty of all the volcanoes of the Andes, and which has been in a state of activity in modern times. Its height is such (18,858 feet) that it would exceed by 2850 feet the summit of Vesuvius if that volcano were placed on the top of the peak of Teneriffe. It is the most beautiful of the Andean mountains, and its prudent observations have been the most frequent and the most devastating in their effects. In 1738 the flames rose nearly three thousand feet above the edge of the crater. In 1744 the sound of the explosions was so great as to be heard at a distance of five miles, and at that degree of heat the snow melted. The quantity of ashes thrown out was so great that in the towns of Hambato and Tacunga such a degree of darkness was produced as to oblige the inhabitants to go about with lanterns for many hours in the day-time. On the 25th January, 1803, was preceded by sudden thundering of the snow which covers the mountain. For twenty years no smoke nor visible vapour had issued from the crater, but in a single instance the internal fires became so active, that at sunrise the external walls of the cone were observed to be black and bare, their mantle of snow having been dissolved by the heat. The form of Cotopaxi is the most perfect and beautiful of all the colossal summits of the Andes. It is a perfect cone, which, covered with an enormous bed of snow, shines with a dazzling lustre at sunset, against the azure vault of heaven. The crater is surrounded with a wall of ice, which, according to Humboldt by means of a telescope, for the cone being surrounded with deep rents and fissures, cannot be approached.

A region so underlaid by volcanic fires could not fail to be subject to repeated earthquakes, and accordingly, no part of the Andes is free from the frequent shocks which they occasion. Sometimes the shocks come without giving any warning at all, and ruin and devastation are spread over a district which, an instant before, had been in a state of peaceful repose; in general, however, the inhabitants are forewarned of the approach of the convulsion, but the interval between the announcement and the arrival of the destroying force is too short to admit of any precautions against the loss of property; it is well if there be time enough to escape from death. Such is the frequency of the occurrence, that the inhabitants construct their dwellings so as to diminish the risk of damage to the building, and to facilitate their own escape. But no precautions can give confidence in such a case, and the terror of the event is another confirmation of the existence of a creation, for the animals howl piteously when they feel the ground rocking under them. The effects are often produced far from the supposed centre of the volcanic action, for even the towns on the sea-shore are often destroyed. The town of Copiapo was entirely destroyed in the year 1819, not a house being left standing; and the city of Concepcion has been twice destroyed, viz., in 1730 and 1731. An earthquake of tremendous force occurred on the 19th of November, 1822, which was felt as far as the Chiloé islands, and the whole of the coast from Cape Horn to the island of Chiloé, and even at Mendoza and San Luis, on the eastern side of the chain. The towns of Valparaiso, Mellipilla, Quilota, and Casa Blanca, were almost destroyed, and the capital, Santiago, was considerably smitten. The most violent of all, on the 17th September, 1822, at 10, and at Concepcion, in latitude 35°, a distance of more than 1700 miles. One of the most remarkable effects of this earthquake was the elevation of the land on the coast; above a hundred miles of it was permanently uplifted to the height of three or four feet, a portion of the bed of the sea being converted into dry land, covered with oysters, mussels, and other shell-fish. A circumstantial account of the phenomena which occurred near Valparaiso, by Mrs. Hunter, who was present, is given in her Journal in the Chilian Society. In her Journal of a Residence in Chili, and in the first volume of the Second Series of the Transactions of the Geological Society. The volcano of Maypiti, situated about 170 miles E.S.E. of Valparaiso, which had been dormant for several years, was suddenly thrown into a paroxysm of violent earthquakes in 1822, for it was not one shock only which took place; many succeeded at very short intervals, even to the end of the following September.

Mines.—No mountains in any part of the globe abound so much in the precious metals as the Andes, both in South America and in the prolongation of the chain northward into Mexico. For three centuries their riches have been spread over every part of the globe to which civilization has extended; and it is probable, that if improved systems of working the mines were introduced, where there are no natural obstacles to their adoption, the produce would be immensely increased.

Gold is seldom found, like other metals, in the solid rock through which it is here generally found; it is mostly found by extensive subterraneous excavations, or it is met with in ores, in combination with foreign substances, which can only be separated from the pure metal by long and expensive operations. It is always found in the metallic state, and in a pure state of gold, that degree of rarity which is only equalled by the diamonds. It is collected in the form of grains and small rounded lumps, scattered through alluvial soils, which have been derived from the disintegration of rocks containing the metal, and it is probably in this form that the vast number of rivers of the west coast of America are charged with gold; the beds of rivers are usually composed of alluvial soil to a great depth, and that soil frequently extends a great way on both sides of the river, the deposits of a long succession of ages; the grains of gold are disseminated through the whole of this alluvium. The places chosen for digging into that sullerous soil are called lavaderos, because the gravel,
sand, and earth undergo repeated washings to separate the heavy particles of gold. The most considerable gold mines of Chili are in the district of Petorca, N.E. of Valparaiso, and farther to the north in the districts of Coquimbo and Copiapó. In Peru, the provinces most rich in gold are those of Pataz and Hualias, between the seventh and ninth degrees of latitude, and situated in the ridge of the Andes. The Incas possessed vast quantities of gold from the plains of Curimayo, N.E. of the city of Caxamarca, at an elevation of more than 11,000 feet above the sea; and in the Cerro de San José, at a height of 13,000 feet, considerable quantities of gold have been found in veins of an ore of silver. Very extensive and productive lavadros are situated on the banks of the river Tipunui, not far from the town of Zorata, eastward of the great lake of Titicaca, and which appear to have been worked by the early inhabitants of the country, for ancient Peruvian tools are sometimes found in the soil. There are veins of gold in mica-slate in the province of Antioquia in Colombia, but there are no mines worked there, on account of the precarious nature of the country. All the gold of New Granada is obtained from the alluvial soils, and the richest lavadros are in the provinces of Antioquia and Chocó, in the valley of the river Cauca, and on the coasts of the Pacific in the district of Barbadecas; but the auriferous alluvium extends over the whole country from the western Cordillera of New Granada to the sea-shore. In some parts of the district the gold is found perfectly in nuggets; in others it is alloyed with silver in various proportions; even as much as 50 per cent., but this last has been found only in one place. The largest piece of gold known to have been met with in the province of Cauca weighed twenty-five pounds, and was said to have been found near La Victoria, in Peru, of nearly forty-five pounds weight. The annual produce of the gold mines and lavadros of Chili, Buenos Ayres, Peru, and New Granada is stated by Humboldt to have amounted, at the beginning of the nineteenth century, to 8,900 kilograms, or 283,129 Troy ounces, equal, at 42° per ounce, to the sum of 13,177,176. Sterling.

Silver is found in Chili, but the mines are in general not productive, except in the Cerro de Usipalata, twenty-four miles N.W. of the city of Mendoza, on the eastern side of the Andes, where an ore is worked which yields about fifty mares of silver in every hundred pounds of ore. In Peru there are silver mines along the whole range of the Andes from Caxamarca to the confines of the desert of Atacama; and the richest are those of Pasco, in the eleventh degree of latitude, which have been worked since the year 1630. Here, as well as in other situations in Peru, the greatest part of the silver is obtained from an ore called in the country paros, which, according to the analysis of Klaproth, is an intimate mixture of metallic particles of native silver with brown oxide of iron. To form a just idea of the enormous quantity of silver in some of these mountains, it is only necessary to state, that in the mines of Pasco the ore has been worked without interruption since the beginning of the seventeenth century, and that in twenty years preceding 1803 no less than 5,000,000 mares of silver had been obtained from them, and that too without in any case sinking deeper than about seventy fathoms in depth. The stratum of limestone in which the ore is contained lies exposed at the surface over an area of three miles by a mile and a half. The mines of Chota are also very productive. They are situated in the mountain of Chagayga, at an elevation of 13,200 feet, and the weather in summer descends every night to the freezing point. The ore lies quite at the surface, so that in removing the turf almost in any place, on an extent of half a square league, portions of sulphuret of silver and films of native silver may be met with adhering to the roots of the grass. The ore is richer than that of Pasco, and yielded on an average of twenty-eight years prior to 1803, 67,193 mares of silver annually. In the district of Arica, on the very borders of the Pacific, at Huancayo, there are mines of silver which are celebrated on account of the very large masses of pure solid silver sometimes found there, one of which weighed eight hundred pounds. The most renowned of all the silver mines of South America are those of Potosi in Upper Peru. They are situated in a lofty mountain called the Cerro del Potosí, composed of a clay-slate covered by porphyry, and rising to the height of 18,000 feet above the sea. The town of Potosí itself is 2700 feet below the summit. The mountain is perforated in all directions, and it is said that there are not less than five thousand excavations in it, some of them within 120 feet of the top; indeed the works have hitherto been almost continued to the summit of the mountain, the last 2000 feet of solid rock being more easily getting rid of the water, but an adit or drain, more than a mile and a quarter long and fourteen feet square, has been constructed in order to carry off the water from the lower mines. There are rich veins of silver in several parts of New Granada, but no mines have yet been found sufficiently productive to pay the expense of working them. The annual produce of silver from the mines of Chili, Buenos Ayres, and New Granada, is stated by Humboldt to have been at the commencement of the present century 258,969 kilograms, which is equal to 691,492 lbs., and if we take the silver at only five shillings the ounce, gives a sum of 2,074,176L sterling. The produce of the rich town of Potosi is included in the returns from Buenos Ayres.

Silver is also found in Chili, and the greatest part of it is contained in that, not in a pure and fluid state, but in combination with sulphur, forming that particular red ore of mercury called cinnabar. Near the village of Azogué, (the name of which means quicksilver,) north-west of Cuenca, the ore is found in quartz, of which it is the main ingredient, in the highest part of the mountain, or in the cliffs of wood, and asphaltum or mineral pitch. It is found in parts of Peru, but the most celebrated quicksilver mines of South America were those situated in the mountain San Barbarea, near the town of Guanevaroles, in which the ore was carried by the Spaniards from 1568, and from which it is stated that silver was annually taken. In the year 1622, when this mine was first cultivated, and the mineral carefully kept, it appears that they had in general yield annually from 400,000 to 600,000 lbs. of quicksilver, and for some years as much as 1,000,000 lbs. But in 1759, an ignorant superintendent, wishing to increase the produce caused the miners to work the mines which had been let to support the roof, as is usually done in coal-mines; the consequence of this was, that when these pillars were taken and the roof sunk down to the floor of the mine, and closed it down.

Platina is met with only in the provinces of Chocó and Barbadecas, in the north-western part of Colombia, where the sandstone mountains on the left bank of the Cauca are the same alluvium from which the chief part of the gold of New Granada is obtained, but only in the form of grains for it has not been found united with any matrix. These grains are usually small, lumps being very rare; the largest of those hitherto found, which is in the Royal Museum at Madrid, weighs no more than twenty-one ounces. Copper is found in Peru, and is far the most valuable of all the metallic products of Chili. It is chiefly found in the northern provinces of Coquimbo and Copiapó, but there are also some of great value in the southern provinces, or rather in what is usually termed the country of the Araucanos. The average annual produce of this copper is estimated at 14,000,000 lbs., and it is exported to the United States, China, the East Indies, and many parts of Europe.

Tin is also found in Chili, and forms an article of export.

End of Volume the First.
