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THE PENNY CYCLOPAEDIA

of

THE SOCIETY

FOR THE

DIFFUSION OF USEFUL KNOWLEDGE.

VOLUME XIV.

LIMONIA—MASSACHUSETTS.

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LIM

LIMONIA, a genus of plants of the natural family of
Aurantiaceae, so called from the original Indian names,
Neemo and Leemoon, of the Lemon. Several of those
species included are rather heterogeneous in nature, and will
probably require further separation. As most of the family
abounds in essential oil, so the leaves of some of the Limo-
nias are fragrant, and of Geulis into provinces. Limousin
simia and cremona is very acid. Limonia laureola, referred
to this genus by Dr. Wallrich, in his 'Planta Asiat. Rare,'
t. 245, is remarkable as the only plant of this family found
on the tops of cold mountains. The people of the Hima-
lakes building in Ceylon, fragrant, and leaves, fancy that is
by feeding on them that the musk acquires its strong and
peculiar flavour.

LIMOUSIN, or LOMOSIN, a province of France, now
comprehended in the departments of Corrèze and Haute
Viennne. Limousin comprised an area of 3900 square
miles, watered by the Viennne, one of the great tributaries
of the Loire, and by the Dordogne, and its tributaries the
Isle and the Vézère, all belonging to the system of the
Garonne. The province was divided into two parts by the
Vézère. Haut or Upper Limousin was to the north-west
of that river, and had Limoges for its capital: Bas or Lower
Limousin was to the south and east; its chief towns were
Vichy and Tulle. Limoges was the capital of the whole
province. Limousin was included in the dioceses of Limoges
and Tulle, in the bosoms of which were both suffragans of
the archbishop of Bourges.

This district was antiently inhabited by the Lemovices, a
Celtic people conquered with the rest of the Celts by Cæsar.
In the subsequent division of Gaul into provinces, Limousin
was included in Aquitania; and upon the subdivision of
that province, in Aquitania Prima. It formed part of the
dominions of the Visigoths till the overthrow of Alaric II.
by Clovis at the battle of Vouillé, or Vuillev, in Poitou. It
was subsequently under the government of the dukes of
Aquitaine, or of Guienne, from whom it was taken by Pepin
le Bref. It was subsequently included in the great duchy of
Guieuene, under which Limoges, its capital, became a vice-
county. It was in a quarrel with Ademar V., viscount of
Limoges, that Richard I. (Cœur de Lion), king of England
and duke of Guienne, lost his life, being shot with an arrow
as he was besieging the castle of Chalus in Limousin. The
possession of Limousin was subsequently disput ed by the
kings of England, as dukes of Guienne, and the kings of
France. It afterwards came by marriage into the hands of
the dukes of Burgundy, and later still into those of the count
of Albret. It was inherited by Henri IV., from his mother
Jeanne d'Albret, and was by him united to the French crown.

LIMOUX, a town in France, capital of an arrondisse-
ment in the department of Aude, and on the bank of the
river Aude. The streets are paved and lighted, and the
houses are of tolerably good appearance. The market-
place is a regular square. There are two churches, four
public fountains, and a public walk. The public edifice
most deserving of notice is the gate of La Trinité, a fine
elevation, near the bridge over the Aude. The population
in 1831 was 6247 for the town, or 6518 for the whole
commune; in 1836 it was 7105 for the commune, showing an
increase in five years of nearly 600, or almost 10 per cent.
The principal manufactures are of leather and woollen
cloth; there are several oil-presses, and in the neighbour-

LIMULUS, the name for a genus of crustaceans, one of
the most known of which is popularly called The King Crab.
[3XIPHOZMANS.]

LINACEÆ, a small natural order of plants, related to
Cistaceæ, from which it differs in having an ovary with
many cells, containing one or two seeds each, several styles,
and definite whorls of stamens, carps, and placentaæ, five
of which the separate styles and peculiar fruit of Linaceæ
abundantly separate that order. The definition of Linaceæ
may be briefly expressed thus: polysepalous, hypogynous,
monadelphous exogens, with a broken-whorled calyx; a
many-celled, many-styled ovary, containing one or two pen-
dulous ovules in each cell, and a capsule splitting at the
point into as many valves as there are cells. The fruit is
remarkable for having each of its carpels divided into two
cells by a spurous dissection originating inside the back,
so that in reality each cell is two-seeded, although from the
presence of this spurious partition it seems to be one-seeded.

But although Linaceæ approach the two orders already
named in the structure of the organs of fructification, the
vegetation is essentially different, the leaves being alternate,
free from all trace of a volatile secretion, and destitute of
stipules, and the nodes of the stem not being capable of
disarticulation. The whole order contains but two genera,
Linum and Radiola: the former comprehends many species,
the most important of which is common flax, Linum usita-
tissimum, the woody tissue of whose stems is so valuable
for its toughness and fineness, and whose seeds furnish
linseed oil. [FLAX, where the plant is called by mistake
Linum perenne; Linseed Oil; LINUM.]

LINACRE, or LINACER, THOMAS, one of the
most eminent physicians of his age, descended from the
Linacres of Linacre Hall, in the parish of Chesterfield in Derbyshire,
was born at Canterbury about 1460. He received his first
education in his native city, under William Tilly, or De
Selling, and afterwards entered at Oxford, where he was
chosen a fellow of All Souls College in 1484. Anxious for
further improvement in learning, he accompanied De Sel-
ing into Italy, whither he was sent on an embassy to the
court of Rome by King Henry VII. De Selling left him
at Bologna with strong recommendations to Angelo Poli-
siano, then one of the best Latin scholars in Europe.
Linacre removed thence to Florence, where Lorenzo de' de
Medici allowed him the privilege of attending the same
preceptors with his own sons; and under Demetrius Chal-
halis, who had fled from his native city to escape the
Turkish yoke, he studied Greek. He then went to Rome,
and studied medicine and natural philosophy under Hermolaus Barbarus. He applied himself partu-
nearly to the works of Aristotle and Galen, and is said to have been the first Englishman who made himself master of those writers in the original Greek. He also translated several of the Orations of Demosthenes into elegant Latin, and with Grocyn and William Latymer undertook a translation of Aristotle, which was never completed. On his return to England he was incorporated M.D. at Oxford, which degree he had taken at Padua, and gave temporary lectures in physics in the Greek language. His reputation became so high that King Henry VII. called him to court, and entrusted him with the care both of the health and education of Prince Arthur.

In the reign of Henry VIII. Linacre stood at the head of his profession in England; but his attachment to its interests by founding two lectures on physic in the university of Oxford, and one in that of Cambridge. He may also be considered the founder of the College of Physicians in London. In 1518 he obtained letters patent of King Henry VIII., constituting a corporate body of regular physicians in London, in whom was vested the sole right of examining and admitting persons to practise within the city and seven miles round it; and also of licensing practitioners throughout the kingdom, except those graduated at Oxford or Cambridge, who, by virtue of their degrees, were independent of the college, except within London and its precincts. The college had likewise authority given to it to examine prescriptions and drugs in apothecaries' shops. The council of the college was to consist of twenty-four, and at his death he bequeathed to it his house in Knight Rider-street, in which the meetings of the members had been held. Before this time medicine had been practised without control by practitioners of all kinds, but chiefly by apothecaries and surgeons. Linacre was the first by whose labors the public was afforded the least advantage, beyond that which his own character would give him, over the most ignorant empiric. Highly as Linacre was esteemed in his profession, he was not so greatly admired in the church, as may be judged from the change it for that of divinity, or rather to combine the two pursuits. In 1509 we find him in possession of the rectory of Mersham, which he resigned in the later part of the same year, and was installed into the prebend of Southampstone, and afterward in 1518, he became possessed of a prebend in the cathedral of York, where he was also for a short time precentor. He had other preferments in the church, some of which he received from Archbishop Warham, as he gratefully acknowledged his services to his majesty, and Bishop Tanner, that he had the rectory of Wigan in Lancashire. He died of the stone, after great suffering, Oct. 20, 1524, and was buried in St. Paul's cathedralthere, where a monument was raised to his memory.

In his literary character Linacre holds a high rank among the men of learning in this country. He was one of the first, in conjunction with Colet, Lily, Grocyn, and Latymer, who revived or rather created learning in England, and he conferred a benefit on his profession by translating into Latin several of the best pieces of Galen.

These were, the treatises 'De Sanitate tuenda,' fol., Par. 1517; 'Methodus Medendi,' fol., Par. 1519; 'De Temperamentis,' 4to. Camb. 1525; 'De Pulsuum Usu,' 4to. Lond. 1522; 'De Naturalibus Facultatibus,' 4to. Lond. 1523; 'De Symptomatum Differentia liber unus. Ejusdem de Symptomatum Causis liber tres,' 4to. Lond. 1524. In these versions Linacre's style was excellent.

His 'De Pulsus,' and 'Pulsa,' was printed in the 'Astronomi Veteres' of 1499. His translation of Paulus Aegizeta, 'De Circis et Diebus decuriorum, eorumque signis, Fragmentum,' 8vo. Basil. 1529. He also wrote a small book upon the Rudiments of Latin Grammar in English, entitled 'The Prima Vocabulorum,' printed without date, and afterwards translated into Latin by Buchanan. But his most learned work was his treatise 'De Emendata Structura Latinis Sermonis libri sex,' printed at London immediately after his death in 1524, and frequently reprinted in later years in the sixteenth century.

Of Linacre's talents as a physician no testimony remains except the high repute which he enjoyed. For the excellence of his translations from Galen it may be sufficient to quote the praise of Erasmus, who, writing to a friend, says, 'I present you with the works of Galen, now, by the help of Linacre, speaking better Latin than they ever before spoke Greek.'

There are two copies of Linacre's 'Methodus Medendi,' upon which, in the British Museum: one a presentation copy to King Henry VIII., the other to Cardinal Wolsey; and a dedicatory letter, in manuscript, to Wolsey, precedes, in his copy, the dedication to Henry VIII. The Museum also contains the treatise 'De Sanitate tuenda,' upon which, in Wolsey's copy, and has the cardinal's last illuminated in the title, and a similar dedicatory letter similarly placed.

Lincoln (Lincolnshire), an English county bounded on the north by the estuary of the Humber, which separates it from Yorkshire; on the north-west by the county of York; on the west by the county of Nottingham, from which it is partly separated by the Trent; on the south-west by the counties of Leicester and Rutland; on the south by Northamptonshire; on the south-east by the counties of Cambridge and Huntingdon, from which it is separated by the Great Ouse; on the east by the county of York; and its greatest breadth, 51 or 52 miles, from the junction of the three counties of York, Nottingham, and Lincoln, to the sea at Spilby. The area is estimated at 1011 square miles; and the population, in 1841, was 137,645, giving 53,242 inhabitants to the square mile. The climate is neutral; it is the second English county, Yorkshire alone exceeding it; in population the fourteenth, being rather less populous than Essex, and rather more so than Hampshire; and in density of population inferior to all other counties except Northumberland, Cumberland, and Westmoreland. It is comprehended between 52° 39' and 53° 43' N. lat., and between 0° 22' E. and 0° 57' or 0° 59' W. long. Lincoln,
the county town, is 121 miles north by west from London in a straight line, or 134 miles by the mail-road.

The Wolds have their steepest escarpment towards the west, on which side the green-sand crops out and forms a narrow belt, skirting the chalk from Barton to Burgh. This formation is supposed to be thin. At the south end of its extension the green-sand sinks under the alluvium of the fen district. The iron-sand occupies a narrow belt of land west of the green-sand. These two formations contain a range of woods and plantations, and the Market Raisin, south-east, near Spilsby, running nearly parallel to the Wolds, to which they adjoin at their north-western end, forming an inferior terrace, while in other parts they are separated from them by the valleys of the Trent and the Witham.

Westward of the iron-sand extends a wide flat, watered toward the north by the Anholme, and toward the south by the Witham, occupied, except where overgrown by alluvium by chalk rubble, by the Oxford or clunch clay. The distant Grantham to its junction with the Wolds is extended north, and becomes wider as it proceeds southward, until it disappears beneath the fens. Its breadth near the Humber is about three miles, east of Lincoln about fifteen miles, and between Spilsby and Spilsby twenty-five miles; but in this part it is partially covered by the marshes of the Witham. The elevation of this stratum scarcely exceeds that of the adjacent fens. It has been penetrated to the depth of nearly 500 feet, and its breadth may be probably estimated at 70 miles.

The low district of the Oxford clay forms a large central valley separating the Wolds, with the adjacent hills, from the higher grounds formed of the oolitic strata, which extend southward from the country from the marshes which surround the Wolds. The boundary of this country, formed by a line drawn by Lincoln (where the oolites subside, forming a row gap of a mile or two wide, occupied by the Witham and the adjacent marshes), Spilsby, and Bourne to Uffington. This range of high land forms part of what have been termed the oolitic hills, and is bounded on the south by the Uffington, and on the north by the Grantham valley. The eastern side of this range of hills consists, from Barton to Lincoln, chiefly of the great oolite; and south of Lincoln of the cornbrash and great oolite, separated by a thick bed of clay. The west side is occupied by the inferior division of the oolitic formation, and between Spilsby and Grantham, the marsh, and between Spilsby and Grantham. There are one or two outlying masses of oolite about Grantham, and between Grantham and Newark, separated from the principal oolite strata by intervening valleys occupied by the subjacent strata of chalk.

This last-named formation occupies nearly all the rest of the district, occupied by it is not more than two or three miles wide, it proceeds due south to Spilsby, southward of which it pervades all the western side of the county, except one small spot extending over the border into Nottinghamshire and Leicestershire. It is concentric on its eastern side with the chalk formation, from beneath which it crops out. The eastern border of the oolitic formation is marked by new red sandstone or red marl, which extends along the banks of the Trent, and from them westward into Nottinghamshire and Yorkshire. It is covered all round the islands of Aholme (which is composed of red marl) by the alluvium. It is composed of a series of fine, interturbid marsh-lands. Gypsum occurs plentifully in this formation in the Island of Aholme and on the border of the Trent; and there are mineral springs containing sea-salt and other purging salts in the neighbourhood of Gainsborough. The county.

Hydrography and Communications.—The Trent touches the border of the county nearly midway between Newark and Gainsborough, and for about fifteen or sixteen miles separates the counties of Lincoln and Nottingham; from Gainsborough to the Great Bridge, near Lincoln, its course of nineteen miles is almost entirely within the border of Lincolnshire. This river is navigable throughout
that part which belongs to this county; and vessels of 150 tons can ascend to Gainsborough, where the river is crossed by a bridge. The Idle, which comes from Nottinghamshire, enters at the Bykerdyke, a small arm of the Idle, skirts the southern boundary of the Isle of Axholme, and falls into the Trent a little below Gainsborough on the left bank. The Bykerdyke and the Idle are navigable from East Retford. The old river Torme, another affluent of the Idle, rises in the north of the Isle of Axholme, passes through several cuts and cuts (not navigable), distinguished as the New river Idle and the New Torme, pass from the rivers after which they are respectively named, through Axholme Isle into the Trent.

The Idle rises near the village of Spridlington between Lincoln and Market Rasen, and flows north-east or seven miles to Bishop Brigga, where it is joined by a little river Rase from near Market Rasen. Here the navigation commences, and the stream is carried in an almost direct line by an artificial cut, about twenty miles long, into the Humber, a short distance west of Barton. The old channel of the river winds much more than the navigable cut, but coincides with it in the general direction of its course.

The Teytney rises near the village of Spridlington between Lincoln and Market Rasen, and flows north-east or seven miles to Bishop Brigga. It joins the river Rase at Spridlington, and flows north-west through the vale of the Wolds and the oolite or limestone hills. The streams which fall into it are all small.

The Tetney river rises from two springs, one near Normanton, in the Wolds, the other near the Barony台南, in the western escarpment of the Wolds, between Binbrook and Market Rasen; the streams from these springs unite and flow by Binbrook and Tetney into the German Ocean between Grimsby and Saltfleet. The length of the river is about thirty-two miles. When it has been made navigable, the Louth navigation enters the sea there.

The Louth navigation enters the sea near a point called the Ludd. It is formed by the junction of two or three brooks which unite above Louth and flow north-east into the German Ocean near several arms, one of which enters the sea at Grimsby; another near North Somercotes, and the third at Saltfleet. The length of the Louth is about eighteen miles. The navigation consists partly of this river and partly of an artificial cut from the village of Alvingham to the mouth of the Tetney river: the navigation is about forty miles long.

The Witham or Withern Eau rises near Ashby Puerorum, and flows north-east into the sea at Saltfleet, where its estuary receives one of the arms of the Louth: its length is about twenty-four miles. In the upper part of its course it is called the Caleby Beck. The Steeping rises near Ashby Puerorum, and flows south-east, not far from Spilsby, twenty miles into the sea. Wainfleet stands on a small feeder of this river, and just below the city a cutting has been made that a boat can get up to the town. This river was formerly navigable for larger vessels, but the water has been drawn off by the dykes cut for the purpose of draining the adjacent fen.

The Wainfleet navigation is remarkable for the extensive system of draining that has been carried on, the hydrography of the county becomes very complicated. The rivers have in several places been diverted from their natural beds, and now flow in artificial channels in direct lines; and are connected with artificial cuts, which open a communication between rivers naturally unconnected. We must therefore comprehend the natural and artificial hydrography in one view, from the impossibility of drawing exactly the line of demarcation between them.

The Witham, Wainfleet, and Wold rivers rise near the village of Thistleton, just within the border of Rutlandshire; but almost immediately enters Lincolnshire, flowing northward to the town of Grantham, and receiving by the way several brooks. Below Grantham the river flows across the Barony台南, the direct route being south-east to Lincoln; two or three miles of its course in this part are on the border of the county, which it separates from Nottinghamshire; the rest within the county. A few miles south-east of Grantham, on the little River Brant, near thirty-five miles long, from Brandon, north of Grantham. At Lincoln the river turns eastward, and flows to the neighbourhood of Bardney Abbey, where it receives the united stream of the Langworth river and the South Beck. The stream then rises from the little Langworth hills between Market Rasen and Louth, and its whole course is about eighteen miles. From the junction of the Langworth, the Witham flows south-east to the neighbour-

hood of Tattershall, where it receives, on the left bank, the river Bain; and on the right bank the Sleaford river, or Yyme Eau. The Bain rises in the chalk hills at Ludford, between the Market Rasen and Sleaford South. The Yyme Eau, which rises near Market Rasen, and flows north-east to Sleaford and South Kyme into the Witham, its course is about twenty-two miles: there is a navigable channel thirteen and a half miles long, partly natural, partly artificial, from the Witham up to Sleaford. The river is joined by the Barony台南 from Sleaford and South Kyme into the Witham; its course is about twenty-two miles: there is a navigable channel thirteen and a half miles long, partly natural, partly artificial, from the Witham up to Sleaford. From the junction of these two rivers, the Witham flows through the town of Boston, below which it flows in its natural bed into the Wash. The whole length of the Witham may be estimated at from seventy-five to eighty miles, for about half of which it is navigable. In the upper part of its course to Beckingham, just about which it debouches from Lincolnshire, its banks are diversified with rising grounds and picturesque objects. From Beckingham to Lincoln it flows in a wide sandy valley; at Lincoln it passes through depression in the oolite or limestone hills; and soon after enters the creek, through which it has the rest of its course. At Lincoln it communicates with the Fox Dyke, and below that with the Horncastle and Sleaford navigation; there are also numerous cuts connected with it. From this point to Spalding it flows north-east past Grantham, and just before the Conquest the Witham had a tideway navigation for large vessels up to Lincoln; but its navigation has been liable to frequent impediments, and has required much attention.

The Welland rises in Northamptonshire, and flows along the border of that county, which it divides successively from Leicestershire, Rutlandshire, and Lincolnshire. It first touches the border of Lincolnshire just above Stamford, from whence it flows to Deeping and Crowland, where what is termed the Old Welland runs northward to Spalding, while another arm called the Shire Drain proceeds along the border of the county, into the Wash at the mouth of the Nene. From Spalding the Old Welland is conveyed in a direct line by an artificial channel into the Wash. Thus a navigation up to Stamford. Between that town and Deeping there is a channel by the side of the natural stream: below Deeping the natural channel is employed for about two miles; and then there is a navigable cut to Spalding. The navigation is about twenty-eight miles long from Stamford to the Wash.

The Glen rises between Grantham and Folklingham, and flows south by Corby to Barholm not far from Stamford; in this part of its course it crosses a projecting corner of the county. At Grantham, which is the largest town between which rises near the Glen and has a course almost parallel to it. From the junction of this stream at Wilsborough the Glen flows north-east into the Wash at the mouth of the Nene. From Deeping to Spalding it has a small rivulet which joins the Glen has been made navigable for about three miles and a half, to the town of Bourn; and below the junction of this rivulet the Glen is navigable for about eleven miles into the Welland between Spalding and the Wash.

A general account of the great fen district of England, and of the changes which it has undergone, is given elsewhere. [Bedford Level.] The limits of the Lincolnshire fens have been already given, and it is only requisite to say that they consist of a principal tract of wampis and a smaller tract which skirts the western border of the fens, commences in the Welland between Stamford and Deeping, and runs northward nearly thirty-five miles into the fens of the Witham, with the drainage of which it is connected. Some authorities state that there are nine Dymocks Five, but this appears not to be the case at present, though it may have originally been so. This canal is supposed to be of Roman origin: it is sixty feet wide, and has on each side a wide flat bottom.

The South Forty-Foot is cut from the Glen by a circuitous course to the Wash at Boston: its length is about twenty-two miles: it receives a number of small streams flowing from the hills that form the western boundary of the fen. The North Forty-Foot runs ten miles from the Yyme, or Sleaford river, near its junction with the Witham, parallel to the Witham, into the South Forty-Foot, near Boston.
The West Fen Catch-water Drain, and the East Fen Catch-water Drain bound the fen district on the north side, and extend about ten and seven miles respectively; they do not immediately communicate. The Old and New Hamond Beck run by a circumferential course from the Welland near Spalding to the South Forty-Foot near Boston. Its length is about twenty miles. The other cuts, provincially termed "Leams," "Droves," "Dains," "Becks," "Éaux," and "Dykes," are two numbers of rather distinct notations between Glean and that arm of the Welland called the Shire Drain they are particularly numerous. The drainage of the northern fens is noticed elsewhere. [AXHOLME.]

Of navigable canals, besides the Ancholme, Louth, Horn-castle, Sleaford, Bourne, Branch, the Great Drain, and the two above-mentioned, one of the, Foss Dyke, is a Roman work, and appears to have been used for navigation previous to the Conquest. Henry I. had it cleaned out and the navigation improved. Some have supposed him to have been responsible for the present course between Lincoln and Brigg, once a place of some consequence, above Gainsborough, to the Witham at Lincoln; its length is eleven miles: it is level throughout, but its waters are four or five feet above those of the Trent. It is supposed to have been a river to the sea, and being an impounded canal alone, was used only for draining, is supposed to have been formed for the purpose of navigation: but there is no need to assume any connection between the Car Dyke and the Foss Dyke, if, as is likely, the Witham was artificially navigable for ships up to Newark and back. The navigation reached the Keadby Canal, which opens a communication between the Don or Dun navigation at Stainforth near Thorne in Yorkshire, and the Trent at Keadby in Lincolnshire. This canal, which is fifteen miles long, has a part of its course in the Isle of Axholme.

Among the projected railways the Northern and Eastern was designed to pass through this county. It was to run from London by Cambridge to York. It was to enter Lincolnshire a little to the east of Market Drayton, and was designed to parallel the present course of the Eastern Counties Railway to Lincoln; and from thence first on the left, then on the right of the Foss Dyke to the Trent above Gainsborough. The execution of this railroad, except from the part from London to Cambridge, has been delayed and has proved abortive. The principal coach-road is the Hull, Barton, and Lincoln mail-road. This enters the county at Market Deeping, 90 miles from London, and runs north and east towards Bourne (97 miles), Hol良bridge (106 miles), and Sleaford (119 miles) to Lincoln. This is a main road, and is thought worthy of note north in a direct line along an old Roman road for many miles, and then turning north by east, runs by Brigg, or Grantham Bridge (156 miles) to Barton (167 miles), on the west bank of the Humber, opposite Hull. The Louth and Boston mail-road is the same as the former; 2, oasts; 3, heapes; 6, oaks; 3, stiles; 5, Wells; 6, wheat. If wheat were sown immediately after the cole, it would be rank, and probably lodged. The oasts and beans reduce it to a proper state, by exhausting a portion of the manure and preparing the soil better for wheat. The oasts are only five inches and a half in length, and more than 8 quarters per acre, and often 10 and even 12 quarters.

In some heavy soils the Essex rotation is adopted:—1, fallow; 2, barley; 3, beans; 4, wheat; and this, alternated with the other, answers well on rich lands. A fallow once in ten years is almost indispensable, to keep the land free from root-weeds. The clover also recurs less often, and is consequently less apt to fail than when it is sown every sixth year on the same land. Those who have been engaged in agricultural improvements, such as Arthur Young, and others, to attempt to cultivate hay and wet soils without an occasional fallow, have soon been obliged to return to this effective mode of cleaning land: the hoeing of beans or other green crops can never be executed so effectually as to keep the land free from those destructive weeds which have perennial roots. For the poor soils there is no system so advantageous as that of raising turnips, and feeding sheep with them on the land where they grew. The tread and urine of the sheep givecoxen to the loose sand, so that it acquires the properties of a good loam, so that it will retain water sufficiently to supply the roots of the growing corn. If marl can be put on the surface at the same time, the nature of the soil will be greatly improved; and that which would only bear a crop of oats, will now become capable of giving a good return of wheat. Manure alone cannot effect this;
it would only cause the wheat to run to straw and lodge, and give no grain. To manure poor lands highly, without first consolidating them, is absolute loss of both dung and labour.

From the returns of forty different farms, A. Young has given the average produce in Lincolnshire as follows:—

<table>
<thead>
<tr>
<th>Crop</th>
<th>Number of Bushels</th>
<th>Average Crop, qu.</th>
<th>Average Crop, qu.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>3 bushels</td>
<td>36 qu.</td>
<td>36 qu.</td>
</tr>
<tr>
<td>Barley</td>
<td>3 bushels</td>
<td>45 qu.</td>
<td>45 qu.</td>
</tr>
<tr>
<td>Oats</td>
<td>3 bushels</td>
<td>45 qu.</td>
<td>45 qu.</td>
</tr>
<tr>
<td>Beans</td>
<td>3 bushels</td>
<td>36 qu.</td>
<td>36 qu.</td>
</tr>
</tbody>
</table>

It is probable that the general adoption of the drill in sowing, and the improvement of the cultivation since the report of A. Young, have increased the proportion of the crop compared with the seed sown for before.

The crops usually raised on the arable lands are mostly the same as in other counties on similar soils. There is some wheat cultivated in the neighbourhood of Boston on rich warp land; some sainfoin grown on the chalky soils, and lucerne other, and clover to the north of Lincoln; to which this useful plant ought to be cultivated as green food for horses and cattle. Cabbages and carrots are cultivated to a considerable extent; the turnips on the clay lands, and the onions on the light and deep sands.

The county of Lincolnshire and of the neighbouring county of Leicester are some of the best feeding lands in the kingdom. The average number of beasts of a moderate size, about 70 or 80 stone of 14 lb., which can be kept on an acre, taken from twenty-six places, is stated by A. Young to be 11 sheep, 11 bullocks, 11 horses, 11 cows, 11 calves, 11 sheep, per acre; 2 acres to feed a bullock in summer with the sheep, 12. So that 12 acres of grass-land will feed—in summer, 1 bullock and about 65 sheep; and in winter, 3 sheep and 25 sheep; and these lands will feed a bullock and 6 sheep per acre all the summer.

Some of the finest pastures are fed on by horses which are fattened for the market; but horses soon deteriorate the grass, while sheep improve it.

Graseland is occasionally broken up to grow wood or flax on. When this is done very judiciously, it may be laid down as grass seed and be a good pasturage again; but, in general, it is a long time before the newly-sown herbage is so fattening as the old grass. When grassland is broken up it gives such rich crops, that the temptation to overcrop it is too strong to be resisted; and once exhausted to a certain degree, it cannot be restored to its richness for a long time. When arable land is laid down to permanent grass in a rich, clean, and unexhausted state, the success is invariably; but it is often done without attention, and a failure is the consequence.

The most important improvements on land, by the side of some rivers in which the tide flows rapidly, is that of warping; or, in other words, retaining the water on the land so long as to let it deposit a layer of sand and mud. Thus a new soil is created over old ground; and this new and perfectly fertile soil is highly productive by warping, that expensive work has been raised for the purpose, and extensive tracts of poor land have been covered in a short time with a new soil of the finest quality, as the crops raised upon it will clearly show.

The tides are affected by letting in the water of the rivers, which have a muddy current, by artificial channels and sluices, and retaining it there till low water. The river Humber carries off, in its course over various soils, all the mud, which are then to be immediately deposited. These consist of every kind of earth and portions of vegetable and animal matter. The tides, which are continually changing the direction of the current, keep this earth in suspension by agitation which is produced; and thus a deposit of an inch is first laid on the low grounds by the side of the river by means of canals and sluices, the earth is soon deposited and forms a coat of mud of a highly fertile nature. Such is the quantity of earth contained in the water, that a layer one-tenth of an inch in thickness is often deposited between one tide and the next. Thus in a very short time a new soil is formed of any depth which may be desired, provided the land lies below the level of the river at high tides.

Besides creating a soil, the warping fills up all inequalities, and a perfectly level surface is produced. Warp land possesses a natural power of production, which cultivation and manuring cannot imitate. The basis of the soil is fine clay and sand, the latter minutely divided and intimately mixed with the former; with a considerable portion of the earth. Very little foreign matter can be extracted by analysis, but there is no doubt a very small portion of it in an insoluble state, probably combined with lime or argillae. Sufficient experiments have not yet been made to show this combination, as likewise the galvanic action, which goes on in the earth.

It is to be hoped that the attention of agricultural chemists will be turned to this subject. Considerable light may thus be thrown on the causes of fertility in soils.

The atmospheric air seems to act powerfully on the newly deposits, as the herbage is often killed just above the reach of the waters. As long as the level of the warping will not last long enough to admit of being warped over again, it is to lay them down to permanent grass; but when the land will be exhausted in time, like the Dutch and Flemish poplars, and require manure like other lands. The best mode of treating warping lands which are too high to admit of being warped over again is to lay them down to permanent grass; but to remain grassed, and to present a good pasturage, and to possess finer breeds of horses, oxen, and sheep. The Lincolnshire horses are celebrated for their size and power.

The oxen which are preferred for grazing are the short-horns, and some crosses of long-horns. Mr. C. has been very successful in the production of this breed, as he has kept with considerable success. Some rich proprietors and farmers are very careful in maintaining the reputation of their stock; and fine bulls are reared without regard to expense, which is very little in the superiority of their produce. The most justly admired graziers are those who breed up small-sized oxen are more profitable for grazing than the larger: an ox of about 80 stone of 14 lb. is thought to fatten more rapidly in proportion than either larger or smaller, provided the breed is a good one. There are not many dairies in Lincolnshire; breeding and fatting are considered more profitable and less troublesome. There is however some excellent cheese made of the Stilton kind. A. Young mentions Mr. Grundy, of Heathcote, Cornwall, who is said to live in the same situation as the descendant of his is now residing at Old Windsor, in Berkshire, where he makes the famous Forest cheese, which still goes by the name of Grundy cheese, and is the best cheese of the Stilton kind made in England. He was brought from Lincolnshire by George M. in the year 1791, to the dairy in Windsor Forest. The sheep which are bred in this county are principally of the long-wooled, commonly called Leicesters. But the two counties differ only in the great proportion of fen lands to be found in Lincolnshire. The rich upland pastures are similar in both counties to the air for some time before it acquires its great fertility. It is therefore probable that the insoluble vegetable earth requires to be oxygenated and rendered soluble. The richest crops of beans, wheat, oats, and rape are raised without warping. The warping lands are adapted for barley or turnips on account of its slimy nature.

It has added much to the produce of Lincolnshire, that the crops raised on the warping lands have enabled the farmer to employ all the manure made by the abundance of straw and manured land. The manure is deposited on the above the reach of the waters. As long as the level of the warping will not last long enough to admit of being warped over again, it is to lay them down to permanent grass; but when the land will be exhausted in time, like the Dutch and Flemish poplars, and require manure like other lands. The best mode of treating warping lands which are too high to admit of being warped over again is to lay them down to permanent grass; but to remain grassed, and to present a good pasturage, and to possess finer breeds of horses, oxen, and sheep. The Lincolnshire horses are celebrated for their size and power.
and carry a heavier fleece; they are also harder; the latter however are generally preferred, from their greater propensity to fatten. A cross has been produced which partakes of the qualities of both breeds, and is preferred by
the fancy for its fleece.
There is nothing particular in the breed of pigs, except that it has been much improved of late years by crossing with improved breeds.

The important fairs in Lincolnshire are:—Alford, Whit-

day Monday, November 8; Barton-upon-Humber, Trinity
Thursday: Belton, September 23; Boston, May 4, Au-
gust 5, November 16, and lasts four days, December 11;

Lincoln, May 15, June 16, July 3, Thursday after Old Michae-

day, November 19, and 22; Gainsborough, Easter
Monday, October 20, if it falls on a Wednesday, then the
Wednesday after; Grantham, Easter Monday, Holy Thurs-
day, July 10, December 17; Heckington, Thursday before
October 10; Holbeach, May 17, second Tuesday in Sep-
ember. Colsterworth, Monday, August 22, 29; Kirton-

Lindsey, July 18, December 21; Lincoln, Tuesday for the last whole week in April, July 5, first Wednesday, Thursday, and Friday after September 12, November 28, Louth, third Monday after Easter Monday, Whit-
Monday, August 26, September 25, Wednesday before Sunday after, and the third Monday in August; Brant
ton, August 25, September 24, 25, Wednesday before Sunday after; and Thursday after, and the third Friday in August; Gainsborough, Thursday before Sunday after, and the third Monday in August; Waltham

Lindsey, Wednesday before Sunday after, and the third Monday in August.

Total of parts of Lindsey
961,970 173,088

II. Parts of Kesteven.

Aswardhurn, wapentake Central (no town) 45,820 6,407
Aveland, wapentake  S. Bourn 53,220 9,978
Beltisloe, wapentake  S. Corby 53,470 6,430
Boothby Graffoe, wapentake  W. 50,230 7,842
Foxwell, wapentake Central Sleaford 43,820 7,607
Langoe, wapentake Central Sleaford 46,040 7,556
Lovenden, wapentake  W. 47,340 7,965
Ness, wapentake  S. Stamford 31,650 12,797
Walibriggs and Three

S.W. (no town) 41,660 6,149

Grantham, borough and

soke  S.W. Grantham 25,400 10,750

Total of the parts of Kesteven
445,650 81,839

III. Parts of Holland.

Ellow, wapentake  S. Spalding 148,560 29,314
Kirton, wapentake  S.E. Sleaford 71,660 14,777
Skirbeck, wapentake  S.E. Boston 56,160 15,456

Total of the parts of Holland
262,320 62,347

Total of the county
1,663,830 317,645

The county contains the city of Lincoln, the boroughs and

market-towns of Boston, Grantham, Gainsborough, Sleaford;

and the market-towns of Alford, Barton-upon-Humber,

Bolingbroke, Bourne, Caistor, Corby, Crowle, Deeping,

Donington, Epworth, Falkingham or Folkingham, Gains-

borough, Sleaford Bridge or Brigg, Holbeach, Horncastle,

Kirton, Lincoln, Louth, Mablethorpe, Ramsgate, Sleaford,

Swineshead, Tattershall, Wainfleet, and Wragby. To these

may be added the now disused market-towns of Bin-

brook, Burton-upon-Stather, Crowland or Croyland, Na-

venby, and Sleaford. Of some of these an account is given

elsewhere. [AXHOLME: LINCOLN; BARTON-UPON-HUMBER;

GAINSBOROUGH; GRANTHAM; STAMFORD.

Lincoln is on the north bank of the Witham, just at the

place where it passes through an opening in the stonnith

hills, 134 miles from London, through Ware, Biggleswade,

and Peterborough. It was a place of considerable importance.
under the Romans. In the time of the Saxons it was also a
place of consequence; and notice of it occurs in the
struggles of the Saxons and Danes. At the time of the
Conquest it was one of the most important places in
the kingdom, and the emporium of a considerable trade.
William the Conqueror ordered the erection of a strong
castle here A.D. 1066. The erection of this castle is said to
have caused the demolition of two hundred and forty houses. At
the time of the Domesday survey there were in Lincoln
1079 houses and 902 burgesses. The prosperity of the place
appears to have been further promoted in the time of Henry
I. by clearing out the Foss Dyke, and making it again
available for navigation. This inlet, with the advantage of the navigation
(probably a tideway navigation for sea-borne vessels) of the Witham, rendered the
situation of Lincoln peculiarly favourable for commerce. In
the reign of Stephen, the emporium of the city was besieged here
by the king, who took the city, but the castle escaped. The
castle was shortly after surprised by some of her par
nisans, and being besieged by the king, who had the towns-
men in his interest (A.D. 1141), was relieved by the approach of
Young, son of Edward III, who greatly impeded its march.
Stephen, upon the approach of the relieving force, gave
battle to it; but, by the desertion of Alan of Richmond,
he was defeated and taken after fighting with the greatest
intrepidity.

In the civil wars of the reign of John the town was taken
by Gilbert de Gaunt, one of the barons in the interest of
Louis, Dauphin of France, who had created him earl of
Lincoln. The castle however held out for the king and was
besieged by Gilbert, who hearing that John was approaching
hastened to relieve it, and Pulk de Breteuil, a chieftain of
his army, was sent with a reinforcement into the castle.
The besiegers, who were supported by a body of
French, were attacked on both sides; and the town, in which
they attempted to defend themselves, was stormed by the
earl of Pembroke, the count of Eu and the commandant of
the castle. The town was now taken; many of the insurgents barons and other
prisoners of rank were taken, and the party of the Dauphin
was crushed. The battle was fought June 4, 1218. At
a subsequent period the castle was in the hands of John
of Gaunt, son of Edward III, who greatly impeded its march.

In the civil war of Charles I, the inhabitants promised to
support the king, but in A.D. 1643 the city was in the hands of
the parliamentaries, who had a garrison there. The royalists attempted by treachery to possess themselves of the
place. The walls were demolished and the garrison had broken
in were repulsed. They got possession of the city however soon after; and in 1644 the parliamentary
army under the earl of Manchester attacked the city and
took the lower part of it. The town was then retrenched to
the castle, which were stormed, in spite of a
gallant resistance, on the night of May 5th, two days after
the earl's arrival before the place.

The city is built on the southern slope and at the foot of
a hill, on the summit of which is the cathedral. It con
12 parrishes, and of a thirteenth, the
rable of which, with two others, are locally within the
limits, though not in the jurisdiction of the city. There
are four parishes in the liberty of the city, on the opposite side
of the river; and in the suburbs of the city, the city and the liberty, and the included parishes, contain Alto
gether 17,560 acres. The town is irregularly laid out; the
principal street is along the road from London to Barton-on-
Humber, which extends right through the place, crossing
the river at the bridge and running down to the cathedral stands. This street also extends a considerable
length south of the Witham. The streets are paved, lighted
with gas, and supplied with water from public conduits or
fountains. There are several small bridges over the Witham or over the by-pass or dyke. The sides near the
over the Witham has one arch of nearly 2 feet span, and
11 feet high; it is considered to be at least five hundred
years old. There are market-places or market-houses for
corn, cattle, meat, and butter, in different parts of the city;
the best known near the cathedral.

The most interesting of the public buildings is the cathed-
ral, which is advantageously situated on the summit of
the hill, and may be seen for many miles across the flat country
to the south-east or south-west: its three towers have at a
distance a very fine effect. It has been erected at different
periods, and bears inconstancy of various styles of
architecture; the predominant style is the early English, of
remarkably rich and beautiful character. The cathedral may
be entered in any, and has been by some judges preferred to
York. It is much enclosed by buildings on the north, south,
and west sides; but is more open on the east. The nave is
very fine, and the piers in this part are peculiarly rich; and
though the side aisles are unusually narrow, the effect of
the whole is excellent. The western front, which embraces
the width of the nave and aisles with the side chapels (or, as some
people say, the transepts) is so admirably adorned by a
man, partly early English: it has two towers whose height
from the ground is 180 feet. There were formerly spire
upon these, of the height of 101 feet, but these were taken
off in the seventeenth century to preserve the height of the
corners of the towers. At each angle of the west front there
are square, vertical staircase turrets crowned with pinnacles.
There are three west doorways, the centre one opening into the nave,
the side ones into the two side aisles. There is much
sculpture and tracery on this front, and an excellent preservation;
and over the central doorway are several statues of the kings
of England, from the Conquest to Edward III, under decorative
canopies. The central or great transepts are chiefly in the
early English style; they have aisles on the eastern side;
the western side of this transept is a continuation of the
church.

There are at the ends of the transepts circular windows
that at the end of the south transept is one of the five
circles in the early English style remaining. The 'Gauge
court,' or porch attached to the west side of the south tran
sept has a set of arches in the arcade of the nave, which
peculiarly desiring of attention for the intricacy and beauty
of their mouldings, and the singularity and excellence of
thegeneral composition. At the intersection of these transepts
with the nave and choir is the central tower, 35 feet square
at the centre, and 16 feet thick. The windows of this tower
are rather small, which circumstance renders the lantern
obscure. The height of this tower from the ground to
the summit of the pinnacles is about 300 feet. The choir is
a space of 75 feet wide; the height of the choir is
an transept; though, like them, it is of early English
character. It is separated from the nave by a rich stone screen.

The eastern end of the choir, with the Lady Chapel, is of
transition style between the early and decorated English
of our times, and our chief glory. The windows of this
as is a fine composition. The cathedral is at this end
encompassed with buildings; a better view of it can con-
tently be obtained. There are two transepts to the east
ward of the principal transepts, and there are several chapels
in the aisles of the nave, all of which are indifferent
as follows:—Exterior length of the church within its buttresses
324 feet; interior length 412 feet; width of the cathed
lateral (interior width, we believe, of the nave and choir with
the eastern transepts) 80 feet; height of the vaulting of the
to 80 feet; width of the east end of the
terior length of the principal transept 250 feet, interior
222 feet; width 66 feet. Smaller or eastern transept
length 170 feet; width, including the side chapels, 4
feet. The dimensions are, we believe, when not otherwise
specified, interior dimensions.

The old bell, called the Tom of Lincoln, which was cast
in 1610, and hung in the northernmost of the west tower
became cracked in 1827, and being broken up in 1834, was
removed to the north, and the old bell was removed to
the south. There are two quarter bells by Mr. Thomas Mears of
Loughborough, placed in the Rood (or central) tower in
1815. The new bell, which is larger and heavier than the old one, is 6 feet
10 inches in diameter at the mouth, and weighs 12 tons
8 cwt. On the western side of the nave there is the chapel of the chapter-house. The cloisters enclose a quadrangle of
118 feet by 91; three sides remain in their original state
and are of good decorated work; over the fourth (the north
side is a library built by Dean Honeyman in the late
eighteenth century) there is a collection of books, with some curious specimens of Roma
antiquities. In the enclosure of the cloisters, some feet
below the surface, is a handsome tessellated pavement.
From the eastern side of the cloisters is the entrance to the chapter-house, a lofty and elegant decagon, with a groined roof supported by a central pillar. Though not equal to the chapter-house of Salisbury, it is very fine. Its interior diameter is 60 feet 6 inches.

The monastery contains numerous monuments; but many more, which formerly existed, have been removed or totally destroyed. Many were defaced or pulled down at the Reformation, or by the parliamentary soldiers in the great civil war, and many were dismembered when the floor of the cathedral was partly pulled out, and the subsequent alterations were made in the nave and choir. Among other tombs are those of Catherine Swinford, Duchess of Lancaster, wife of John of Gaunt; of Joan, countess of Westmoreland, their daughter; and of several bishops and deans of the cathedral.

The officers of the cathedral are the bishop, dean, prebendary, chancellor, subdean, six archdeacons, fifty-two prebends, four priest-vicars, five lay-cantors or singing-men, an organist, seven poor clerks, four choristers, and six lay choristers. The net yearly income of the bishopric is £442 per annum; the net yearly income of the cathedral, divided between the dean, precentor, chancellor, and subdean, is £256; these dignitaries have residences. On the south side of the cloister, outside, is a large building, which was demolished during the civil wars. The shell of the magnificent ball, eighty-four feet by fifty feet, supported by two rows of pillars, a gateway, and part of the kitchen wall, remain. A modern house has been built on part of the cloisters, and the rest is in process of building. The deanery is an ancient building; and near it is another ancient building, called 'the Works Chantry,' formerly the residence of the chancellor of the diocese. The vicar's college once formed a quadrangle, of which at present the building is in use by the vicars.

There is an ancient gateway yet standing.

The sea of Lincoln was originally at Dorechester on the bank of the Thames. The sea of Dorechester is said to have been founded A.D. 625 or 636. The dioceses of Leicester and Salisbury (and the dioce of York, which includes Lincs, Leics, and Bedfo), the latter of which comprehended the parts of Lindsey, were added to it; and in the eleventh century (A.D. 1057, or 1072, or 1088, for accounts vary) the seat of the bishopric was removed to Lincoln. Although the diocese of Ely (in Cambridgeshire) was added to it in the sixteenth century, (at the Reformation), were taken out of it, it is still the most extensive diocese in the kingdom. It is divided into six archdeaconries: 1. Lincoln; and, 2. Stow, which two contain the ruins of the bishop's palace, which includes Leicestershire; 3. Bedford, which includes Bedfordshire; 4. Huntingdon, which includes Huntingdonshire and part of Hertfordshire; and, 5. Buckingham, which includes Buckinghamshire. Considerable alterations are Lowerthorpe, near the town. The number of the inhabited houses of the city (according to the last census) is 11,244.

The parliamentary borough comprehends the city and a small portion of the liberty.

There were in this city, in 1832, two infant-schools, with 323 children; five dame-schools, with 67 children; thirty-two day-schools (including two endowed schools, with 86 children), with 776 children; four boarding and day schools, with 150 to 160 children; one national school, with 474 children; and two schools for the half-castes, with 76 children. There were at the same time in the city, one boarding-school, with 30 to 40 children; six day-schools (three of them partly or wholly supported by subscription), containing 246 children; and five Sunday-schools, with 22 children.

Grimsby is in the wapentake of Bradley Haverstoe, in the parts of Lindsey, on the south bank of the Humber, near its mouth. In the time of Edward III. Grimsby was of sufficient importance to furnish the king with eleven vessels and 170 mariners for his armament against Calais. This gradual blocking up of the harbour by the accumulation of mud and sand led to the decay of the port, until it was renovated by the spirited exertions of some of the neighbouring landed proprietors about the beginning of the present century. The landing at low water is however still wide, and is now erecting to remedy this inconvenience. The parish of Grimsby, the township of Cleo, and the hamlet of Weelsby, comprehend 2110 acres, and had in 1831 a population of 4968, of which 4908 are inhabited. The town consists of two parts: the older part of the town is irregularly laid out, and is at the head of the harbour, about a mile from the sea; the new part, commonly called 'the Marsh,' consists of three streets parallel to the harbour, and about a mile from it, with a lock, &c., at one of the mouths of the Lueby Beck, extending inland about a mile southward from the sea; vessels drawing sixteen feet can enter it with high water at neap tides. There are large warehouses and timber-yards attached to the harbour. The church is a large edifice, consisting of two parishes now united. The church of St. James, now the only one, is a large cross church, with a tower in the centre; the architecture is in a great degree early English; the west door is Norman. There is in the church some ancient monuments and inscriptions.
large font of early English character. There is a small ill-
managed borough gaol. There are a tan-yard, two bonne-
mills, some corn-mills, and a large rope for making patent
cordage of phosphorous tinax, which has not been very suc-
cessful. The market is on Friday.

Grimsby is a borough by prescription; the council under
the Municipal Reform Act consists of four aldermen and
twelve councillors. The parliamentary borough, which
was considerably enlarged by the Boundary Act, includes
both the borough of Grimsby, and the parishes of Great
Cotes, Little Cotes, Bradley, Laceby, Waltham, Scartho, and
Clee, with the township of Cleethorpe, containing an additional
population of 6,664; making in all 66,699. Cleo has an ancient
church, with a turreted Norman tower.
The living of Grimsby is a vicarage, in the archdeaconry
of Lincoln, of the clear yearly value of 532s. There are
several dissenting places of worship.

Blyth, in the parish, in 1633, one infant school, with
20 children, partly supported by the corporation; a gram-
mar-school, with 60 boys and 20 girls; a school preparatory
to the grammar-school, with 54 boys and 19 girls; and a
school for dissenters, with 22 children: the first two of these
schools were wholly and the third partly supported by the
corporation; four other day-schools, with 114 children;
one board-school, with 23 children; and one Sunday-school,
with 110 children.

Alford is in the hundred of Clumberworth, in the parishes
of Alford and Lincoln, in the county of Lincoln. By Boston and Spilsby,
near the head of a small stream which flows into the sea.
The parish contains 1,410 acres, with a population, in 1831,
of 1,724, about one fourth agricultural. The town consists
chiefly of one street. The church is an insignificant build-
ing, and serves for two dissenting places of worship.
The market is on Tuesday. The living is a vicarage, united
with the chancelry of Rigby, in the archdeaconry of
Lincoln, of the clear yearly value of 12s. 6d. There were,
in 1833, an endowed grammar-school, with 24 boys; a
national school, with 80 boys and 60 girls; and five other day and board schools,
with 190 children.

Bolingbroke is in the sable of Bolingbroke, in the parts
of Lindsey, 131 miles from London, by Boston and Spilsby.
There was here an ancient castle, built by William de Romere, earl of
Lincoln, which after the case of the Lacy family, and subsequently into those of John of Gaunt,
Henry IV., son of John, was born in this castle, and took
from it his surname of Henry of Bolingbroke. There are
a few remains, consisting chiefly of the tower at the south-
western corner, which still appears to be of considerable
size. The parish comprehends an area of 2570 acres, with a population
of 723. There is a small manufactory of earthenware.
The market is on Tuesday. The church, which is ancient,
was partly destroyed in the civil wars, but was repaired
by the crown, and fitted up with the chapel of Harold
Lucy, in the archdeaconry of Lincoln, of the clear yearly
value of 37s. There were in the parish, in 1833, one
endowed and one other day-school, with 46 children; and one
Sunday-school, with 40 children.

Bourn is in Aveland wapentake, in the parts of Kesteven,
on the road from London to Lincoln, 97 miles from the former,
and 36 from the latter. There was formerly a castle here,
which was the seat of a lord-ship of some note in the
Saxon times. Here, over the tomb of a lady, the Anglo-Saxon chieftain
who opposed the most protruded resistance to the Norman
conquerors, was the son of the lord of Bourn, or Brune.
The parish comprehends 8190 acres, with a population
of 2689: it is divided into three hamlets, of which that of
Bourne, with Bourne End, contains the village the greater part of which consists of nearly one-half agricultural. The town consists chiefly of
one long street of modern well-built houses. In the centre
of the market-place is an ancient town-hall, said to have
been built by the great Lord Broughley, a native of the town;
the gateway is of great size, and was once a market.

The towers at this end. Wool-stapling and tanning are carried on, and the
the town has some trade in leather and wool: there is a navigable
canal communicating with the river Glen. A tessel-
ated pavement and some Roman coins have been dug up
in the neighbourhood, and there are the traces of the site of an
Augustinian priory, the revenue of which at the Dissolution
was 157l. 17s. 6d. gross, or 167l. 14s. 6d. clear. There are
some dissenting places of worship. The living is a curacy,
in the archdeaconry of Lincoln, of the clear yearly value
of 220l., with a glebe-house, valued at 10l., and
in the parish, one dame-school, with 20 children;
an endowed school, with 18 boys; a national school, with 123
children; nine other day-schools, with 167 children; and
two Sunday-schools, with 169 children.

Brockhampton, in the wapentake of Yarborough,
in the parts of Lindsey. Its name indicates it to have been
a Roman station: by the Saxons it was called Thong Castor
Some Roman and Saxon antiquities have been discovered here. The whole parish, which extends into the wapentake
of Yarborough, and has an area of 14,100 acres, was in the
parish of Holton-le-Moor, a chapelry, containing a population
of 1,750: the chapey of Holton-le-Moor has 1750 acres,
with a population of 150, leaving for the part of the parish
which contains the town 2720 acres and 1375 inhabitants,
of whom about a sixth are engaged in agriculture. The
acres, in the Norman parish, partly of early 12th cen-
tury. The town has a market on Saturday. The living is
a rectory, united with the chapelry of Houghton and
Church, except from the archdeaconry's jurisdiction, of the clear
yearly value of 212s., with a glebe-house. There were
in the parish (exclusive of Holton-le-Moor), in 1833, an
endowed day-school, with 74 children; eight other day-schools,
with 194 children; a national Sunday-school, with 144
children; and another Sunday-school, with 70 children.

Cornerby, in the wapentake of Kesteven, in the hundred of
Kesteven, 105 miles from London by Bourn. The parish
contains 3790 acres, with a population of 634, above half
agricultural. The market, which has almost disappeared from
this name, is on Thursday. The living is a vicarage, united
with the rectory of Holton-le-Moor, in the archdeaconry of
Lincoln, and is a half of the chapelry of Bulby, all in
the archdeaconry of Lincoln, and of the value of 540s.
with a glebe-house. There were in Cornerby parish,
in 1833, an endowed free-school, with 10 to 25 schol-
ars; two other day-schools, with 38 children; and one Sun-
day-school, with 12 children.

Deeping, distinguished from some neighbouring places
of the same name as Market Deeping, is in the wapentake
of Nene, in the parts of Kesteven. It is 90 miles from London,
on the road to Lincoln. The parish comprehends 1290
acres, with a population of 1275. The church, and
some portions of early English architecture; the tower and other parts are of pe-
wash, and the chancel is of an octagonal
shape. The clear yearly value of 57s., with a glebe-house. There were
in 1833 an endowed day-school with 70 scholars; six other
day-schools with 173 children; and one Sunday-school, sup-
plied out of the poor fund, with 22 children.

Deeping, a village is a so near to Market Deeping as
almost to constitute one town with it. The parish has
an area of 6470 acres, with a population of 1557. The church,
originally a chapel, built by the monks of Croyland, is large
and curious, chiefly in the Norman and early English style: it
contains a curious Norman font. There is a
stone cross in this village. The living is a vicarage of the
clear yearly value of 114l., with a glebe-house. There were
in 1833 three day-schools with 85 children; a national school with 190 children; and a Sunday-school with 64 children.

Donington is in the wapentake of Kirton, in the parts
of Holland. It is 11½ miles from London, on the left of the
road to Boston. The parish comprehends an area of 6640
acres, with a population in 1831 of 1759, more than half
agricultural. The living is a rectory, and very considerable in
its extent, and much hemp-seed is sold. The church is
dedicated to St. Mary and the Holy Rood; there are one
or two Dissenting places of worship. There is a market
on Saturday. The living is a vicarage in the archdeaconry
of the Lincoln, of the clear yearly value of 210l. The
vicar has 76 acres, with a glebe-house. There were
in the parish in 1833 four dame-schools with 22 children;
four endowed day-schools with 315 children; and one
Sunday-school with 20 children.

Falkingham, or Falkingham, is in the wapentake
of Yarborough, in the part of Lindsey, 10 miles from London
on the road to Lincoln. Here was a village castle on the
eastern side of the town, but only the moats and mounds
remain. The parish comprehends 1700 acres, and had in
1831 a population of 715, above half agricultural. The
streets are clean and well paved. The church is large and
handsome, chiefly of perpendicular character; the tower has eight pinnacles and a rich battlement. A small gable was erected thirty years ago on the site of the ancient castle, and has since enlarged. The market is on Thursday. The living is a rectory united with the vicarage of Laughton, both in the archdeaconry of Lincoln, of the clear yearly value of 51£. There were in the parish in 1833 an endowed day-school with 50 children; four other day-schools with 100 children; and one Sunday-school with 36 children; and one Sunday-school with 131 children.

Glinford-Brigg, or Glinford-Bridges, or by familiar abbreviation Brigg, is in the wapentake of Yarborough, in the parish of Lincoln, and about nine miles from Lincoln, on the road to Barton-upon-Humber. The chapelry of Glinford-Brigg is in the parish of Wisby with Ketleybe, which comprises 5070 acres, and had in 1831 a population of 2418, of whom 1760 were in Glinford-Brigg and in 1833 there were three religious establishments (two 'gilds' and a 'convent'), the funds of which are appropriated to the grammar school. The parish comprises an area of 3620 acres, with a population in 1831 of 6976, about one-eighth agricultural. The town is in a pleasant situation at the foot of the Wolds, and on the bank of the little river Ludor, which runs through it. It is well built; the houses are of brick, and the streets are well paved and lighted. The church is one of the finest in the county: it consists of a nave, chancel, and two aisles, with a lofty and pointed arch, and a magnificent crocketed spire, at the west end. The exterior presents a fine specimen of perpendicular architecture: the east window is remarkable for its beautiful tracery. The angles of the tower are supported by rich buttresses which have the crocketed spire. The flying buttresses from the spire to these pinnacles. The height of the spire is 288 feet. The grounds of the vicarage house are curiously laid out as if attached to a hermitage, and are interspersed with seats, cloisters, and other appropriate buildings. There are a sessional house and a house and a house for the vicar, a green and a tea-room, a public subscription library and a news-room. There are some manufactories of worsted, and such manufactures as those of wool, rugs, and blankets, which give employment to about 100 people: there is a locomotive factory. The trade is carried on in wool and corn. The Louth navigation extends from the town to the ocean just at the mouth of the Humber. The markets are on Wednesday and Saturday, and there is a weekly market for cattle on Friday during the spring. The quarter sessions for the division are held alternately here and at Spilsby. The town was incorporated by Edward VI. The late Municipal Reform Act it was divided into two wards, and has 6 aldermen and 12 members for the borough.

Horncastle is in the wapentake of Horncastle, in the parts of Lindsey, 136 miles from London by Sleaford and Tattershall. It is supposed to have been a Roman station; some think that it was theBannoovallum of Rævena. There are traces of a fortification yet visible, which was a parallelogram enclosing an area of twenty acres, and comprising a considerable part of the modern town. Roman coins and other antiquities have been discovered, and at the point formed by the junction of the two large rivers, the Wolds and the Humber, there is a market town, which is now situated at the foot of the Wolds. The town has been much improved, and consists of respectable well-built houses. The church has been in great part rebuilt of late years. Part of it is as antient as the time of Henry VII. There are several Dissenting places of worship. There were in 1833 an infant-school with 120 children, a dame-school with 70; a free grammar-school, with a large endowment, seven day-schools with 53 children; one endowed day-school with 25 children; one Sunday-school with 186 children; and one Sunday-school with 48 children; three other day-schools with 32 children; a national day and Sunday school with 284 scholars during the week, and 29 on Sundays; and three Sunday-schools, with 586 children.

Market Rasen, or Raisin, is in the hundred of Walscote, in the parts of Lindsey, on a little brook, the Rase or Raisin, which joins the Ancholme, nearly 148 miles from London by Lincoln. There were in 1833 three grammar-schools with 115 children; one national day and Sunday school with 223 day scholars, and 189 on Sundays; thirteen other day-schools with 381 children; two boarding and day schools with 84 children; and two Sunday-schools with 186 children; and one Sunday-school from which no return was made. There are two public libraries, a subscription library of 1000 volumes, and a clerical library.

Kirtton, distinguished as Kirtton in Lindsey from another place of the same name (in the parts of Holland) is in the wapentake of Corringham, in the parts of Lindsey, about 130 miles from London to the left of the Barton road. It is situated on the slope of that range of hills which extends from Lincoln to Barton-upon-Humber and overlooks the valley of the Trent. The parish comprehends 4210 acres; in 1831 it had 1520 children, besides four academies, and two grammar schools. The civil and ecclesiastical jurisdiction is held here by adjournment; and there are a court-house and house of correction. There is a market on Saturday. The church is large and has a considerable portion of good seats for the clergy and wealthy dissenters. The church is dedicated to St. John the Baptist, and is in the charge of the vicar of North Lynn. The parish comprehends an area of 3600 acres, and a population in 1831 of 6976, about one-eight agricultural. The town is on a pleasant situation near the foot of the Wolds, on the bank of the little river Ludor which runs through it. It is well built; the houses are of brick, and the streets are well paved and lighted. The church is one of the finest in the county: it consists of a nave, chancel, and two aisles, with a lofty and pointed arch, and a magnificent crocketed spire, at the west end. The exterior presents a fine specimen of perpendicular architecture: the east window is remarkable for its beautiful tracery. The angles of the tower are supported by rich buttresses which have the crocketed spire. The flying buttresses from the spire to these pinnacles. The height of the spire is 288 feet. The grounds of the vicarage house are curiously laid out as if attached to a hermitage, and are interspersed with seats, cloisters, and other appropriate buildings. There are a sessional house and a house and a house for the vicar, a green and a tea-room, a public subscription library and a news-room. There are some manufactories of worsted, and such manufactures as those of wool, rugs, and blankets, which give employment to about 100 people: there is a locomotive factory. The trade is carried on in wool and corn. The Louth navigation extends from the town to the ocean just at the mouth of the Humber. The markets are on Wednesday and Saturday, and there is a weekly market for cattle on Friday during the spring. The quarter sessions for the division are held alternately here and at Spilsby. The town was incorporated by Edward VI. The late Municipal Reform Act it was divided into two wards, and has 6 aldermen and 12 members for the borough.

Sleaford is in the wapentake of Fluxwell, in the parts of Kesteven, 115½ miles from London on the road to Lincoln. It is on the little river Slea, or Sleaford, which flows into the Ancholme, and at a short distance from the ancient village of Old Sleaford. Stucely conjectured, but on insufficient grounds, that the Romans had a station here. Roman coins have been dug up. The bishops of Lin.
the hamlet of Holdingham, 1360 acres, and 137 inhabitants, chiefly agricultural. The town has been much improved of late years. It has a large and handsome church. The
church consists of a nave with side aisles, and a large chapel or transept on the south side, and another transept on the north, and a chancel without aisles: there is a tower surmounted with a spire rising to the height of 144 feet. The steeple is the most ancient workmanship, and in the upper part of the chancel is the chancel of perpendicular date. The windows are of four lights: and excepting some parts of most of the church are excellent. There are also some
Dissenting places of worship: and a town-hall of modern architecture. The market is on Monday. The Steam
Canal is cut from this town to the Witham. There is a
village, exempt from the archdeacon’s visitation, of the
clear yearly value of 170l., with a glebe house. There
were in 1833, in the parish, an endowed day-school with 40 children; seven other day-schools with 388 children; and ten Sunday-schools with 311 children.
Spalding is in the wapentake of Elloe, in the parts of
Holland, 101 miles from London on the road to Boston. It
was a place of some consequence even in the Saxon times.
There was a monastic establishment here, which underwent
many changes. Its revenue at the dissolution was 18s. 1d.
3d. gross, or 767£. 8s. 11d. clear. The parish
comprehends 12,070 acres, with a population in 1831 of 6497,
about one-third agricultural. The town is situated on
the banks of the Welland, in a fenny district, but well drained; the streets are clean and well paved. The church, which is mostly of perpendicular character, has a
fine tower and crocketed spire. There is a town-hall or
court-house, a substantial brick building, in the market-
place. There are assembly-rooms and a small theatre,
and a small circulating library, called the emporium for
the neighbouring agricultural district. The Welland is
navigable for vessels of 40 or 50, or even 70 tons, up to
the town, and there is a considerable coasting and carrying
trade. The market is on Tuesday, and is very large.
Long wool is sent from this neighbourhood for the supply
of Norwich and the manufacturing towns of Yorkshire.
The living is a perpetual curacy, in the archdeaconry of
Lincoln, of the clear annual value of 390£., with a glebe house.
There were in 1833, in the parish, a grammar-school with
60 boys; a free school called the ‘Bluecoat-school,’ with 50 free and 24 pay scholars; twenty-four other day-schools with 614 children; and five Sunday-schools with 765 scholars.
Lindsey, Mile, 134 miles from London on the road to Boston. The parish comprehends 2340 acres, with a population in 1831 of 1384, of which a very small portion was agricultural. The church
is a large and handsome edifice, with a tower, and an
other endowed free-school for 60 boys; a free-school called
the ‘Bluecoat-school,’ with 50 free and 24 pay scholars;
twenty-four other day-schools with 614 children; and five
Sunday-schools with 765 scholars.
Lindsey was in the wapentake of Kirtton, in the parts of
Holland, 1153 miles from London, and 7 from Boston.
The town, which is a market town, was formerly
14, by Robert de Greveli; the yearly revenues at the dissolu-
ion were 12s. 2d. gross, or 16l. 12s. 3d. clear. Leland
deduces them to 80l. In this monastery King John
appear to have rested after his escape with his life in crossing
the Wash of Boston, when he lost his baggage. His death, which
occurred at Newark shortly after, was by some ascribed to
poison administered by a monk of Swinehead. The parish
comprehends 6100 acres, and had in 1831 a population
of 1994, about half agricultural. Swinehead was formerly
a port, and the sea flowed up to the market-place, where there
was a harbour. The market is on Thursday, but it is almost
dissolved. The church is a large and handsome building
with a lofty spire. The living is a vicarage, in the archdeaconry of Lincoln, of the clear yearly value of 240l. There were in the parish in 1833 an endowed day-school with 90 scholars;
six other day-schools with 114 scholars; and one Sunday-
school with 12 children. There is in the town a circular
Danish encampment, sixty yards in diameter, surrounded
by a double fosse.
Tattershall is in the wapentake of Gartree, in the parts
of Lindsey, 127 miles from London through Sleaford.
It is in the archdeaconry of Lincoln, of the clear yearly
value of 110l. There were in 1833 a boarding day-school
with 25 children; two day-schools with 10 or 12 children
in each; a national school attended by 104 children in the
week and 62 on Sunday with 12 scholars. Five mineral
waters have lately been discovered at Woodhall
between Tattershall and Horncastle, which are coming into
repute: handsome baths are built, and an hotel is in course
of erection.
Waddington is in the wapentake of Candleby, parts of
Lindsey, 133 miles from London through Boston. It
was supposed to have been a Roman station, the Vainonos
of the geographer Ravenus. The haven was antiquely
famed for its ships, but it was going to decay in Leeland’s
time. The haven and port are now so low by a drain, that it is
used only for small craft. The town is supposed to have
stood formerly higher up the creek, where the old church of All Saints stands. The parish of Waddington All Saints comprehends 1830 acres, with a population in 1831 of 1333,
about one-fourth or one-fifth agricultural; that of Waddington St. Mary comprehends 6440 acres, with a population of 660, almost entirely agricultural; together 8270 acres, with a population of 1793. All Saints church is a handsome
building, with three towers, and the whole is in a fine
condition. St. Mary’s church is also much decayed. There
is a school-house for the free grammar-school, founded
by William of Waynflete, bishop of Winchester, in the
fifteenth century. The market is held on Saturday, but is
almost entirely of the old Sunday-school, with 53 children;
seven other day-schools with 122 children; and nine
Sunday-schools with 222 children; and three Sunday-schools with 357 children; one of the Sunday-schools, with 105 children, was
supported by the governors of Bethlem Hospital. Wil-
of Waynflete was of this town; his name was William
Wragby is in the wapentake of Wragby, parts of Lindsey, 44 miles from London through Lincoln. The parish comprises 1710 acres, with a population in 1831 of 601, more than a fourth agricultural. The town is neatly built and pleasant, with some new houses in the district of Lincoln, and of the joint yearly value of 327L, with a glebe-
house. There were in 1833 an endowed day-school with 20 children; another day-school with 25 children; and a Sunday-school with 28 children. 

The following places had markets, now disused. — Bingham is in Walworthcroft hundreds, parts of Lindsey. It lies in the Wolds between Caistor and Louth, out of any great road. It consists of two parishes, St. Gabriel and St. Mary, having a joint area of 6670 acres, with a population in 1831 of 1630, more than two-thirds agricultural. There are extensive rabbit-warrens in the neighbourhood, and considerable business is done in dressing skins for furriers. The church of St. Gabriel is a vicarage, of the clear yearly value of 35L, exempt from the archdeacon's visitation; that of St. Mary, which is a rectory in the gift of the Bishop of Lincoln, and of the joint yearly value of 291L. There were in 1823, in the two parishes, four day-schools with 75 children, and two Sunday-schools with 164 children. Burgh, Burton-upon-Stather, and other places of the same name in the ancient parish of Burton-upon-Stather, is in the wapentake of Manley, parts of Lindsey, 169 miles from London through Newark and Gainsborough. The parish comprehends an area of 3660 acres, with a population in 1831 of 765, three-fifths agricultural. The church of which is remarkable is that of Fitzwilliam, both in the archdeaconry of Stow, and of the joint yearly value of 210L, with a glebe-house. There were, in 1833, five day-schools (one partly supported by a yearly donation), with 150 children; and two Sunday-schools, with 167 children. 

Crowland or Croyland is in the wapentake of Elloe, parts of Holland, near the old channel of the Welland, and near the south border of the county, 97 miles from London, through Huntingdon, Ramsey, and Thorney. It is a place of 77 acres off the A47, but it is supposed to have been a Roman station; but though various Roman antiquities have been discovered in the neighbourhood, they are not sufficient to support the conjecture. In the time of the Danes, and before the twelfth century, it was held by Eustald, king of Mercia, about the beginning of the eighth century. The first building is said to have been of timber; and, from the marshy character of the soil, was founded upon piles. In or about A.D. 870, in the reign of Ethelred I., this monastery, with several others, was destroyed by the Danes. In the latter part of the eleventh century, the monastery, which had been restored, was again destroyed by fire, but was rebuilt a few years afterwards, with funds partly, if not wholly, raised by the sale of land in the town. The church had been present at the laying of the first stone; and the abbey, thus restored, increased rapidly in wealth and reputation. At the dissolution, its yearly revenues were estimated at 2217L 5s. 10d. gross, or 1083L 15s. 10d. clear. The buildings of the abbey, and the site of the abbey church, are marked, but not restored. The central tower of the abbey church was a campanile tower at the eastern end of the church. After the dissolution the transepts were pulled down; the nave with its side aisles was left for use as the parish church; but the damage sustained in the civil war led to the formation of a new nave, and the north aisle was added. The north end was restored in 1790, and the south end in 1831. There is a fine view of the town from the Sleaford, 124 miles, and of the nave is one of the most beautiful specimens of rich Early English in the kingdom. The groining of the roof of the present church is very good, and the original windows have been fine ones. There are some antique screen-work and an antependium. The very foundations of the other conventual buildings have been destroyed. On the west side of the church is the triangular bridge at the confluence of two streams. There is no record of its origin. The entrance designed as a symbol of the Trinity. At one angle of the bridge is the statue of some king much decayed. 
The parish comprehends 12,780 acres, with a population in 1831 of 2265, nearly two-thirds agricultural. The village is surrounded by fields. The inhabitants are engaged in grazing, in the dairy, or in the breeding or taking of geese and wild-fowl. The market has been removed to Thorney. The living is a rectory, in the archdeaconry of Lincoln, of the clear yearly value of 115L, with a glebe-house. There are two Sunday schools, with about 100 children, an eight-day-schools, with 222 children; and two Sunday-

Navenby is in the hundreds of Boothby Graffo, parts of Kesgrave, on the edge of the Wash, 19 miles from London, through Southwell, directly from London. The church is partly of Early English and partly of Decorated English architecture. The windows of the chancel are very fine specimens of Decorated character, particularly the east window, the mullions and tracery of which are remarkably fine. The church comprehends 2110 acres, with a population, in 1831, of 775, above half agricultural. The market, formerly held on Thursday, has fallen into disuse. The living is a rectory, in the archdeaconry of Lincoln, of the clear yearly value of 271L. There are two Sunday schools, with 18 children; two day-schools, with 25 children; and one endowed day and Sunday school, with 109 children in the week and 165 on Sunday. 

Sleaford is in the hundreds of Long Eke, parts of Lindsey, 192 miles from London, through Spalding, Horncastle, and Louth. Sleaford, half a century ago, was a place of some consequence, but is now decayed and is a mere hamlet to the parish of Skidbrooke. Some of the inhabitants are engaged in the oyster fishery; there are a fair and a market held in the town of Skidbrooke containing 2420 acres, with a population of 362, about half agricultural. The living is a vicarage, in the archdeaconry of Lincoln, of the clear yearly value of 271L. There were in 1833, five day-schools with 22 children, and one Sunday-school, with 58 children. 

Divisions for Ecclesiastical and Legal Purposes.—This county, as noticed above, is in the diocese of Lincoln, and constitutes the two archdeaconies of Lincoln and Stow. The intended changes in the diocese have been also given. 

The archdeaconry of Lincoln is subdivided into the following rural deaneries:—1, Lincoln; 2, Aswardburn, or Asward-
burnum-Lutford; 3, Avaland; 4, Bettisooe or Bettislaw; 5, Bolingbroke or Bullingbird; 6, Candleseed; 7, Calce-
seed; 8, Croft; 9, Crowland; 10, Graffo; 11, Grimsby Mill; 12, Horncastle; 13, Longbov-
ye; 14, Loveden; 15, Louth-cum-Ludbrook; 16, Ness, or Nesse; 17, Salmford; 18, Walworth or Walers; 19, Wrangoe or Wrangor; and 20, Yarwell. The number of parishes is given by Camden at 630. In Lewis's Topographical Dictionary of England, 1814, there are given 3006 rectories, 244 vicarages, and the remainder perpetual curacies, chapelries, or donatives. The diocese of Lincoln is in the ecclesiastical province of Canterbury.
ney, for one division, at Kirton in Lindsey; and for the other division, the Epiphany and Midsummer sessions at Spilsby, and the Easter and Michaelmas sessions at Louth.

Before the passing of the Reform Act the county returned two members, who were elected and the poll taken at Lincoln. Two members each were returned for the city of Lincoln, and for the boroughs of Boston, Grantham, Grimsby and Spilsby.

By the Reform and Boundary Acts the county was divided into two parts, each to return two members. The northern division comprehends the parts of Lincoln: the eastern part of the adjacent parishes of Stallingborough and Stallingborough, Lincoln, Gainsborough, Epworth, Barton, Glenfield, Market-Rasen, Grimsby, Louth, Spilsby, and Horncastle. The southern division comprehends the parts of Kesteven and Holland: the election takes place at Sleaford, and the poll is returned at Boston, Bourne, Donington, Nabney, Spalding, and Grantham.

History and Antiquities—At the time of the Roman conquest Lincolnshire constituted part of the territory of the Coriandi (Coriandi), who occupied several of the midland counties, and whose territory stretched through Lincolnshire to the German Ocean and the Humber. In the division which the Romans made of Britain Lincolnshire was included in the province of Flavia Cæsarea.

The principal British roads or trackways which passed through Lincolnshire and afterwards were used by the Romans had two branches; the Foss-way; and what has been termed the Upper Salt-way. Ermine-street, after passing over an angle of the county near Stamford, re-entered it in the north near Whitemoor, and proceeded to Grantham. It immediately divided into two branches, of which the most easterly ran north by Ancaster and Lincoln to Winterton-on-the-Humber. The other main branch ran north-west to Nottinghamshire. The Foss-way continued north-west to Grimsby, and thence, where between them, and ran south-west by Lincoln through Nottinghamshire to Leicester. The Upper Salt-way appears to have been the communication between the coast of Lincolnshire and the salt-works of Worcestershire. Two of these branches were continued by the Roman Kesteven Street, and after that branch of the Foss, were adopted by the Romans. There were subordinate branches from these roads, and Dr. Stukely considered that there were traces of other Roman roads.

Lindum, the modern Lincoln, was a British town before it was made a Roman station; it is at the intersection of the two great roads, the eastern branch of Ermine-street and the Foss. Ptolemy calls it Lindos, and mentions it as one of the two chief towns of the Coriandi. It was made a Roman station, and according to Richard a Roman city, which is in accordance with Tacitus. The station was on the hill now occupied by the cathedral and the castle: its form was that of a parallelogram, the sides nearly facing the four cardinal points; on each side was a gate, which was 1200 feet wide. The buildings have been almost entirely levelled with the ground, and the gates, with one exception, have been long since demolished. The remaining gate, now called 'Newport Gate,' is one of the most remarkable Roman remains in the kingdom. It consists of a central arch nearly sixteen feet wide, and formed with large stones put together apparently without mortar; the height, according to Stukely, was originally above twenty-two feet, but it is now, from the elevation of the causeway, scarcely more than half that height. On each side of the great arch are two lateral arches, now nearly closed up by the elevation of the soil; these small arches were each seven feet and a half wide by fifteen high. Adjacent to this gate is a mass of the Roman wall; a Roman arch and part of the wall are supported by the Norman castle; and another portion of wall parallel to that of the station, and now called 'the Mint Wall,' is supposed to have been part of a granary or of some other Roman building. A fortified wall with towers at the corners, one of which has been built on to the Roman wall, and then along the bank; if any part of this remains, it has been so mingled with later Saxon or Norman workmanship, that it cannot be discriminated. Coins of the emperors Nero, Vespasian, and Julian have been found here, and especially of Carus, who, as some have supposed, resided for a time at Lincoln. A tessellated pavement and a hypocaust beneath it were discovered in a n.d. 1729; the pavement was thirteen feet below the present surface. Another hypocaust and several antiquities have been also discovered, especially a sarcophagus and some stone coffins, earthen and glass urns, and other funeral remains. Part of a set of glazed earthen vases, pipes and other specimens of pottery have been also found.

The only other Roman station in the county mentioned in the Antonine Itinerary was Causeneum. Ad Abum, mentioned by Richard of Cirencester, was on Ermine-street, at Winterton-on-the-Humber, near the town of Grimsby. The remains of the station at Winterton, supposed to be Ad Abum, were ploughed up not more than six years before Stukely wrote the account of it, and great pavements, chimney-stones, and other antiquities were found; but the pavements were now lost. The wall and bases were found here A.D. 1747. At Roxby, Hillhadow, Appleby, Sandton, and Broughton, all in the same part of the county, various Roman antiquities have been discovered. At Horkstow also, near Winterton, several Roman remains were found; and the foundations of buildings, some of which have been discovered. At Turvey, near the junction of the Foss Dyke with the Trent, between Lincoln and Gainsborough, there was probably a Roman settlement. The foundations of the ancient Norman castle appear to have been here. At Grimby, the remains of a Roman settlement, probably a Roman villa, were discovered in 1795 the foundations of a Roman villa, occupying a site 200 feet square, and having upwards of forty apartments on the ground plan, with walls, 4 feet thick. No coins or other Roman pavements, only one of which was perfect. Some of the walls were of great thickness. Various Roman antiquities were found scattered over the spot. Upon the banks of the Trent, three miles west of Stow, in the same part of the county, a site of a considerable Roman settlement has been discovered. Horsley was inclined to fix the station Segelocum here, on the Lincolnshire side of the stream, instead of placing it at Littleborough on the Nottinghamshire side, where he admits that the town attacked by the Romans in the time of Suetonius Paulinus was. In A.D. 1764 Suticaster of the Saxons, the seat of a bishopric afterwards transferred to Lincoln. Near Gainsborough and at Aukborough, both on the Trent, are Roman camps: the latter was, in Stukely's time, very perfect, and formed a square of 300 feet; nearly it was the foundation of a city. No coins have been discovered. Horsley was probably Roman, and have been found at Godley Hill, near Holbeach, and at Honnington, not far from Grantham; a mosaic pavement at Bentinck, in the same district, and some Roman coins and pipes of baked earthenware in other places.

Under the Saxons, Lindsey, a name which perhaps extended nearly or quite over the modern county of Lincoln, was no doubt the seat of a bishopric, perhaps of the kingdom of Mercia. It was included among the conquests of Edwin of Northumberland, under whose influence Christianity was introduced by the missionary Paulinus. Bede has recorded that Ecgræ, the governor of Lindsey, was with his household, among the first converts. When the Danes, or Northmen, were carrying on their ravages in England in the time of Ethelred I, Lindsey, which then had several monastic establishments, suffered greatly. The narrative of their ravages, given in the pages of the annals of the See of York or that of Lincoln, contains very little authentic detail on which the history of this period could be depended on, would afford considerable light amid the historic darkness of the period. Early in the year 870 the Northmen landed at Humberside (Humberside) near Grimsby, ravaged Lindsey (Lincolnshire), and murdered some men on the Wolds, and then, returning to a famous monastery, the monks of which they had sacked in the church. About Michaelmas they penetrated into Kesteven, plundered and devastation marking their course. Here they everywhere seized the principalities of the bishops;—Count Algar (comes Algarus) and two knights (milites) his seneschals (senechalii sui), called Wifred and Osefrid (from whose names the aged men and women thereabouts have since given appellations to the villages where they lived, called Wifredeswic and Osefrideswic, drew together all the youth of Holland (Hollandia), with a band (colonia) of two hundred men from the monastery of Croyland, stout warriors, inasmuch as most of them were exiles (fugitives), who were commanded by brother Telb
Lincoln, who had become a monk in that monastery, having been before that the most renowned for military skill in all Mercia, but who had then, from the desire of a heavenly country, given up secular for spiritual warfare at Croyland. They gathered together also about three hundred brave and warlike men from Derby, Leicestershire, and Lincoln (Boston) with whom they joined Marcard (Morcar), lord of Brunne (Bourne), with his retainers (familia), who were very stout and numerous; they were moreover aided by Osger, deputy (decedent) of Lincoln, a brave veteran, with a band of 500 Leicestershire men. The Northmen, having the advantage; but the reinforcements which joined the invaders in the night struck such terror into the Christians that many fled. The rest having received the sacrament, and being fully prepared to die for the faith of Christ and the safety of the kingdom, offered battle. The Northmen, enraged at the loss of three of their kings (who were buried at a place previously called Laudun, but subsequently Trekyngham), fought with the utmost ferocity; but the Christians, though far inferior in number, maintained their position by stratagem. Algar and his seneschals and Tolf fell; and of the whole body only a few young men of Sutton and Gedney escaped, who carried the mournful tidings to the monks of Croyland. To this monastery the Northmen soon came, and in the following spring, the young monks who were too old or too young to fly (except one boy of ten years old, whom the compassion of one of the Danish chiefmen preserved), and burned the monastery. From Croyland they marched to the monastery of Maidenehamlet, now Peterborough, and burnt the church and abbey. They soon left it, having put the inmates, without exception, to the sword.

Lincolnshire passed permanently into Danish hands about A.D. 877; it constituted part of the territory of the Danish banner of Lincoln and Stamford; and was included within the boundary of the Danelag, or Danelage (the Danish law, or Danish jurisdiction), by the treaty between Alfred and Guthrum the Dane. The conquest of this part of the island by the Danes appears to have been accomplished as well as the partition of the settlements of the Anglo-Saxons and the Danes diminished the violence of the changes effected by it. Danish names however supplanted the previous Anglo-Saxon ones; and if we may judge by the prevalence of the Danish termination - (or , and Normandy, Whalburgby, etc.,) the change must have been made in a great many cases. The denominations of the popular assemblies and tribunals appear to have been changed; the name 'waspentake' superseeded that of 'hundred.' In time however, the system of croquet became so firmly established that the whole district came under the supremacy of the Anglo-Saxon crown.

In the civil war between Stephen and the empress Maud Lincolnshire was the scene of contest. The siege and battle of Lincoln was the beginning of their downfall. The town of which Henry II. was involved with his children, one of the Mowbrays, who had a castle in the Isle of Axholme, and was an adherent of the insurgent Prince Henry, was compelled to submit by the zeal and loyalty of the Lincoln men, who crossed over to the island, in boats, obliged the garrison to surrender, and razed the castle to the ground. In the civil war of the barons with John and his son Henry III., Lincoln was signalized by a second battle, which was decided by the battle of Toft on his throne. At the latter part of his reign, when troubles again broke out, Axholme became once more the refuge of the dissatisfied. In the civil war of the Roses Lincolnshire appears not to have suffered much. Sir Robert Wels, brother of the famous Edward, had betrothed, raised a rebellion against that prince, and gathered an army of 30,000 Lincolnshire men. He was defeated with dreadful loss near Stamford, and put to death by the king's command. This battle is sometimes called the battle of the West Mercia, or the battle of Toft. The battle of Toft is also called the battle of the West Mercia, or the battle of Toft. The abbey church, which formed the western entrance, is yet tolerably entire; four handsome hexagonal towers form the outer angles of the east front, each with a window, and an adjoining room with recesses in both ends, the abbey church, and a portion of the octagonal chapter-house, are also standing. The abbey's lodge, which stood to the south, is occupied as a farm-house.
Of Bardney Abbey there are some remains, also of Kirkstead Abbey; both these are on the left bank of the Witham, between Lincoln and Boston. The abbots' lodge of Revesby Abbey, on the north border of the fen country, formed part of an ancient house, since used for the offices of the mansion of the late Sir Joseph Banks. Croyland has been described before.

Of Temple Bruer, a preceptory first of Knights Templars, afterwards of Hospitallers, a few vaults and the tower of the church are left; the latter is a massive, quadrangular, stone building, accessible to the top by a winding staircase. The remains of Haverholme Priory, near Sleaford, have been incorporated into a modern mansion.

In the civil war of Charles I. this county was the scene of several important events. In March, 1642, Colonel Cavendish, on the part of the king, took possession of Grantham, and captured 360 prisoners, with a quantity of arms and ammunition, and demolished the works which had been erected. Oliver Cromwell shortly afterwards gained a victory near Grantham with his own regiment of horse over twenty-four troops of royalist cavalry. In May of the same year Colonel Cavendish defeated the parliamentary forces at Austerfield. In the same year Gainsborough was taken by the parliamentarians under Lord Wolseley. A council of war was held in the castle, the royalist governor, was taken, and being sent to Hull was shot by the royalists in mistake as he was crossing the Humber. In 1643 Cromwell gained a victory near Gainsborough over the royalists under General Cavendish, who lost his life in the engagement. In autumn the same year the royalists were again defeated at Horncastle; and in 1641 Lincoln castle and minster were stormed by the earl of Manchester, who killed or captured about 800 men. The loss of the assailants did not exceed 50 killed and wounded.

(Reeduces of England and Wales; Allen's History of Lincolnshire; Browne Willis's Cathedrals; Parliamentary Papers; Rickman's Gothic Architecture, &c.)

STATISTICS.

Population.—Lincolnshire is almost entirely an agricultural county, ranking in this respect the fifth in the list of English counties. Of 79,335 males twenty years of age and upwards, only 167 are employed in manufactures, or in making manufacturing machinery, while 45,272 are engaged in agricultural pursuits, 32,167 of which number are labourers. Of the few engaged in manufactures 28 men are employed at Louth in making carpets, blankets, and worsted. At Orwold and West Butterwick 43 men are employed in making sacking, tarbels, and wooll-sheets at Haney about 20 in similar occupations. There is a small manufacture of silk shag at Stamford; of mill-machinery at Barton and at Boston; of dressing machines at Skirbeck, and a few of the kind scattered about the county.

The following summary of the population taken at the last census (1931) shows the number of inhabitants and their occupations in each hundred of the county.

The following Table is a Summary of the Population, &c., of every Hundred, &c., as taken in 1831.
The population of Lincolnshire at each of the four following dates was as under:

<table>
<thead>
<tr>
<th>Year</th>
<th>Males</th>
<th>Females</th>
<th>Total</th>
<th>Increase per cent.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1801</td>
<td>102,445</td>
<td>106,112</td>
<td>208,557</td>
<td>..</td>
</tr>
<tr>
<td>1811</td>
<td>117,022</td>
<td>120,869</td>
<td>237,891</td>
<td>14.65</td>
</tr>
<tr>
<td>1821</td>
<td>141,570</td>
<td>143,848</td>
<td>285,418</td>
<td>19.98</td>
</tr>
<tr>
<td>1831</td>
<td>158,958</td>
<td>159,607</td>
<td>318,565</td>
<td>12.07</td>
</tr>
</tbody>
</table>

showing an increase between the first and last periods of 18,388, or about 5.24 per cent., which is 4% per cent. below the whole rate of increase throughout England.

County Expenditure, &c.—The sums expended for the relief of the poor at the four dates of is. d.

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount Expended</th>
</tr>
</thead>
<tbody>
<tr>
<td>1801</td>
<td>95,575 is. 9 d. for each inhabitant.</td>
</tr>
<tr>
<td>1811</td>
<td>129,343 is. 10 d.</td>
</tr>
<tr>
<td>1821</td>
<td>168,766 is. 11 d.</td>
</tr>
<tr>
<td>1831</td>
<td>174,032 is. 11 d.</td>
</tr>
</tbody>
</table>

The expenditure for the same purpose in the year ending March, 1834, was 111,242 is. If we assume that the population has increased since 1831 in the same rate as in the ten preceding years, the above sum gives an average of about 6s. 6d. for each inhabitant. All these averages are above those for the whole of England and Wales.

The sum raised in Lincolnshire for poor-rate, county-rate, and other local purposes, in the year ending 31st March, 1833, was 222,003 is., and was levied on the various descriptions of property as follows:

- On land: £188,927 8s.
- Dwelling-houses: 30,760 18
- Mills, factories, &c.: 3,353 9
- Manorial profits, navigation, &c.: 1,961 10

Total: 225,005 11

The return made up for the subsequent years the descriptions of property assessed are not specified. In the year ending 31st March, 1834, there was raised 228,286 18.; 1835, 267,267 18.; 1836, 186,264 18.; 1837, 138,767 18.; and the expenditure for each year was as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount Expended</th>
</tr>
</thead>
<tbody>
<tr>
<td>1834</td>
<td>£169,073 10s. in lieu of law, removal of paupers, &amp;c. 6,750 3</td>
</tr>
<tr>
<td>1835</td>
<td>49,073 1</td>
</tr>
</tbody>
</table>

Total: 224,896 14

In the returns made up for the subsequent years the descriptions of property assessed are not specified. In the year ending 31st March, 1834, there was raised £2,231,903 20s. 206,412 is. 186,467 13s. 7d.

The saving effected in the expenditure of the poor in 1837, as compared with the sum expended in 1834, was therefore about 3.43 per cent.; and the saving effected, comparing the same periods of time, in the whole sum expended, was about 4.27 per cent.

The number of turnpike trusts in Lincolnshire, as ascended in 1835, was 29; the number of miles of road under their charge is 338. The annual income and expenditure in 1834 were as follows:

- Revenue received from tolls: £28,449 17 0
- Parish composition in lieu of statute duty: 2,269 11 0
- Estimated value of statute duty per head: 3,745 3 0
- Revenue from fines: 1,119 12 0
- Revenue from incidental receipts: 2,191 9 0
- Amount of money borrowed on the security of the tolls: 1 4 0

Total income: 35,579 14 0

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual labour</td>
<td>8,229 17 0</td>
</tr>
<tr>
<td>Team labour and carriage of materials</td>
<td>3,000 12 0</td>
</tr>
<tr>
<td>Materials for surface repairs</td>
<td>4,416 12 0</td>
</tr>
<tr>
<td>Land purchased</td>
<td>42 4 0</td>
</tr>
<tr>
<td>Damage done in obtaining materials</td>
<td>245 17 0</td>
</tr>
<tr>
<td>Tradesmen’s bills</td>
<td>1,191 9 0</td>
</tr>
<tr>
<td>Total</td>
<td>213 10 0</td>
</tr>
</tbody>
</table>

The county expenditure in 1834, exclusive of that for the relief of the poor, was 25,941 6s., distributed as follows:—

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bridges, building and repairs, &amp;c.</td>
<td>763 4 0</td>
</tr>
<tr>
<td>Gaols, houses of correction, and maintaining prisoners, &amp;c.</td>
<td>5,894 0 0</td>
</tr>
<tr>
<td>Shire-bails and courts of justice, building, repairing, &amp;c.</td>
<td>283 9 0</td>
</tr>
<tr>
<td>Lunatic Asylums</td>
<td>36 8 0</td>
</tr>
<tr>
<td>Prosecutions</td>
<td>2,980 17 0</td>
</tr>
<tr>
<td>Clerk of the peace</td>
<td>1,612 9 0</td>
</tr>
<tr>
<td>Conveyance of prisoners before trial</td>
<td>516 3 0</td>
</tr>
<tr>
<td>Conveyance of transports</td>
<td>37 3 0</td>
</tr>
<tr>
<td>Vagrants, apprehending and conveying</td>
<td>317 3 0</td>
</tr>
<tr>
<td>Constables, high and special</td>
<td>401 17 0</td>
</tr>
<tr>
<td>Coroner</td>
<td>403 4 0</td>
</tr>
<tr>
<td>Debt, payment of, principal and interest</td>
<td>7,411 9 0</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>1,230 17 0</td>
</tr>
</tbody>
</table>

The total number of persons charged with criminal offences in the three septennial periods ending with 1820, 1827, and 1834, were 12,966, 1,863, and 2,237 respectively; making an average of annually 185 in the first period, of 223 in the second period, and of 319 in the third period. The number of persons tried at quarter-sessions in each of the years 1831, 1832, and 1833, in respect of whom any costs were paid out of the county-rate, was 197, 210, and 244 respectively.

Among the persons charged with offences there were committed for:

<table>
<thead>
<tr>
<th>Offence</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Felonies</td>
<td>161 164 214</td>
</tr>
<tr>
<td>Misdemeanors</td>
<td>36 46 30</td>
</tr>
</tbody>
</table>

The total number of convictions in each of the same years was 223, 243, and 201 respectively.

<table>
<thead>
<tr>
<th>Year</th>
<th>Convicted</th>
<th>Acquitted</th>
<th>Discharged by proclamation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1831</td>
<td>157 195 244</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1832</td>
<td>156 176 238</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1833</td>
<td>189 192 239</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

At the assizes and sessions in 1837 there were 412 persons charged with criminal offences in this county. Of these 23 were charged with manslaughter, 13 of which were for common assaults; 29 persons were charged with offences against property committed with violence; 323 with offences against property committed without violence; 1 for destroying trees; 1 for uttering counterfeit coin; 16 for riot; 1 for poisoning; 1 for perjury; and 2 for minor misdemeanors. Of the whole number committed, 291 were convicted, 83 were acquitted, and against 38 there were no bills found, or no prosecution. Of the whole number of persons convicted, 12 were sentenced to death, but none were executed; the sentences of 9 of them were commuted into transportation for life; of 2 others for periods of 15 and 7 years; and of 1 to imprisonment for 1 year, or more than 6 months: 13 criminals were sentenced to transportation for life, and 41 for various periods; 9 were sentenced to imprisonment for 2 years, or more than 1; 33 for 1 year or more than six months; and 169 for 6 months or under; 12 were sentenced to be whipped or fined, or were discharged on sureties. Of the whole number of offenders, 345 were males and 67 were females; 136 could not read nor write; 232 could read and write imperfectly; 37 could read and write well; 2 had received superior instruction, and the degree of instruction of the remaining 5 could not be ascertained.

The number of persons qualified to vote for the county members of Lincolnshire in 1834, being 1 in 17 of the whole population, and 1 in 4 of the male population twenty years and upwards, as taken in 1831. The expenses of the last election of county members were, to
the inhabitants of the county, 1371,155, and were paid out of the general county-rate.
This county contains 16 savings’ banks; the number of
depositors and amount of deposits on the 20th of November,
in each of the following years, were as under:—

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Depositors</th>
<th>Amount of Deposits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1832</td>
<td>7,489</td>
<td>£22,953</td>
</tr>
<tr>
<td>1833</td>
<td>7,801</td>
<td>£23,177</td>
</tr>
<tr>
<td>1834</td>
<td>8,588</td>
<td>£24,397</td>
</tr>
<tr>
<td>1835</td>
<td>9,315</td>
<td>£25,787</td>
</tr>
<tr>
<td>1836</td>
<td>10,516</td>
<td>£26,999</td>
</tr>
<tr>
<td>1837</td>
<td>11,150</td>
<td>£28,100</td>
</tr>
</tbody>
</table>

The various sums placed in the savings’ banks in 1835, 1836, and 1837, were distributed as under:—

<table>
<thead>
<tr>
<th>Year</th>
<th>Deposits in £</th>
</tr>
</thead>
<tbody>
<tr>
<td>1835</td>
<td>22,953</td>
</tr>
<tr>
<td>1836</td>
<td>23,177</td>
</tr>
<tr>
<td>1837</td>
<td>24,397</td>
</tr>
</tbody>
</table>

Education.—The following particulars are obtained from the
Parliamentary Inquiry on Education made in the
session of 1835:—

<table>
<thead>
<tr>
<th>School Type</th>
<th>Number of Schools</th>
<th>Number of Scholars</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant schools</td>
<td>71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of infants at such schools; ages from 2 to 7 years:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>631</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td>639</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex not specified</td>
<td>501</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily schools</td>
<td>1,344</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of children at such schools; ages from 4 to 15 years:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>16,075</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td>13,603</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex not specified</td>
<td>6,675</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total of children under daily instruction</td>
<td>36,353</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Assuming that the population between two and fifteen years increased in the same ratio as the whole of the
population between 1821 and 1831, and has continued to increase in the same ratio since, we find that must have been living in Lincolnshire (in 1834) 109,656 persons between those ages. A very large number of the scholars attend both daily and Sunday schools. Forty-five Sunday-schools are returned from places where no other schools exist, and the children, 1221 in number, who are instructed therein cannot be supposed to attend any other school. At all other places Sunday-school children have an opportunity of resorting to other schools also; but in what number, or in what proportion duplicate entry of the same children is thus produced must remain uncertain. Forty-three schools, containing 2646 children, which are both daily and Sunday schools, have been returned from various places, and duplicate entry is therefore known to have been thus far created. Making allowance for this cause for over-statement, we may perhaps fairly conclude that not as many as two-thirds of the whole number of children between the ages of 2 and 15, were receiving instruction at the time this return was made.

Maintenance of Schools.

<table>
<thead>
<tr>
<th>School Type</th>
<th>Description</th>
<th>By endowment</th>
<th>By subscription</th>
<th>By parochial</th>
<th>Subsidy, and out of Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant Schools</td>
<td>187</td>
<td>3</td>
<td>119</td>
<td>6</td>
<td>363</td>
</tr>
<tr>
<td>Daily Schools</td>
<td>107</td>
<td>8</td>
<td>90</td>
<td>4</td>
<td>261</td>
</tr>
<tr>
<td>Sunday Schools</td>
<td>12</td>
<td>7</td>
<td>53</td>
<td>2</td>
<td>280</td>
</tr>
<tr>
<td>Total</td>
<td>170</td>
<td>20</td>
<td>262</td>
<td>10</td>
<td>808</td>
</tr>
</tbody>
</table>

The schools established by Dissenters, included in the
above statements, are—

<table>
<thead>
<tr>
<th>School Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant and daily schools</td>
<td>706</td>
</tr>
<tr>
<td>Sunday-schools</td>
<td>417</td>
</tr>
<tr>
<td>Total</td>
<td>26,912</td>
</tr>
</tbody>
</table>

Twenty-five boarding-schools are included in the number of daily schools as given above. No school in this county appears to be confined to the children of parents of the Established church, or of any other religious denomination, and, exclusive of those being declared for work over the sea, especially in schools established by Dissenters, with whom are here included Wesleyan Methodists, together with schools for children of Roman Catholic parents. Lending libraries of books are attached to 34 schools in this county.

LINE. The definition of a line, as given by Euclid,
will be discussed, with other matters relating to it, in the
article SOLID, SURFACE, LINE, POINT (Definitions of).

LINE. The French used to divide their inch into twelve
lines; and very little into twelve points, which measures are
out of date, since in all scientific investigations the metric
system is adopted. Sometimes, but rarely, the line has
been divided into ten points; thus giving 1440 points to the
foot; the French metrological writers, particularly the
older ones, frequently give the measurements of low cloth
in 1440ths of their own foot. Some English writers have
divided the inch into lines. The French line is 480 to an
English inch, and is also two millimetres and a quarter.

LINEAR (Algebra). As all equations connected with
straight lines are of the first degree, the continental writers
frequently call equations of the first degree linear
equations.

LINEAR DIMENSIONS. [SOLID, SUPERFICIAL, AND LINEAR DIMENSIONS.]

LINEN (French, Tissu de Lin; Spanish, Tela de Lino; German, Linnen; Dutch, Linnen; Italian, Lino; Russian, Polotno), cloth woven with the fibres of the flax-plant (Linum usitatissimum), a manufacture of so antient a date that its origin is unknown. Linen cloth were made at a very early period in Egypt, as we see from the cloth wrappings of the mummies, which are all linen. It appears also that linen was, in the time of Herodotus, an article of export from Egypt. (Ili 103.)

Until quite recent time little machinery was used in the
production of linen cloth. After the separation of the
ligneous fibres of the plant [Flax], the distaff and
common spinning-wheel were employed for the prepara-
tion of the thread or yarn, and the hand-loom generally,
in its simplest form, was used in the manufacture. Within the present century the first attempts were made
at Leeds to adapt the inventions of Hargreaves and Ark-
wright to the spinning of flax—approaches which cannot
be said to have been generally successful until the last few
years. The coarse qualities of yarn have not been the
first attempt been so produced in the mills of Messrs. Mar-
shall at Leeds. Mill-spun yarn is now universally em-
ployed by the linen-weavers of this kingdom for the
production of the very finest linen, as well as of the coarser
qualities; so much so that a large proportion of the power
that has been adopted for weaving all but the very finest and
most costly fabrics. The consequences of these improve-
ments have been to render this country independent of all
others for the supply of linen yarn of every quality, and to
diminish the importance of the woolen manufacture to
a very large extent, so that British yarns and cloths are now
profitably exported to countries with which the manufacturers of Great Britain and Ireland were formerly unable to compete, and against which they were 'protected' in the home market by high
duty on imports.

The growth of the linen manufacture in Ireland is
assumed to the legislative obstruction raised in the reign
of William III. to the prosecution in that part of the
kindred of the woolen manufacture, which was disdained by the
prejudices of the clothiers of England, and by the men wea-
bings at the same time encouraged by premiums of
various kinds distributed by public boards authorized by parliament, and by bounties paid on the exportation of
linen to foreign countries.

We have no certain means for ascertaining the growth of
LIN

19

LIN

the linen manufacture in Ireland. The only facts by which we can approximate to its amount are afforded by custom-house records, which do not reach back to an early date, and are wanting for the years subsequent to 1825, when the intercourse between Great Britain and Ireland was put upon a footing of commerce which would have concealed the salaries of two or three junior clerks, no further record was attempted to be made of its amount or direction. The average quantity of linen exported annually from Ireland, principally to England, in the three years to March, 1814, was 34,191,754 yards. In the three years ending March 1825, the yearly average was 36,112,369 yards, and the average annual exports in the last three years of each of the next two decennary periods was 40,751,698 yards and 48,265,711 yards respectively. In the six years from 1825 to 1829 the quantity sent from Ireland to Great Britain was—

1820 42,665,928 yards.
1821 45,518,719
1822 43,236,710
1823 48,008,561
1824 46,466,950
1825 52,560,926

An attempt was lately made by the commissioners appointed to consider and report concerning railway communications with Ireland to ascertain the extent of the export trade, and they have stated, as the result of their inquiries, that in 1833 there were shipped from Ireland 70,209,572 yards of linen, the value of which was £3,730,854.

The linen manufacture was introduced into Scotland early in the year 1737 a bill of trusses was appointed for its superintendence and encouragement. Notwithstanding this and the further stimulus afforded by premiums and bounties, the progress of the manufacture in that part of the kingdom was for a long time comparatively unimportant. In the great seat of the linen trade, it is stated that the whole quantity of flax imported in 1748 was only 74 tons, and the quantity of linen sent away did not exceed 1,000,000 yards. In less than half a century after that time the annual importation of flax was 2,500 tons, and there were exported 8,000,000 yards of flax beyond the quantity used at home. At this rate the manufacture continued nearly stationary until after the peace in 1815, when a new impulse was given to it; and in 1837 there were imported 30,740 tons of flax, besides 3,409 tons of hemp, and there were exported 8,000,000 yards of linen beyond the quantity used at home. The quantities allowed on the shipment of linens were graduated according to their quality and value, and ranged from a halfpenny to a penny halfpenny per yard. In 1825 the rates were diminished one-tenth by an act then passed, and an equal proportion was to be taken off in each succeeding year until all the duties were to cease in 1831; but by the act 9 Geo. IV., c. 76 (July, 1828), when one half of the bounties had been removed, this course was modified by continuing for three years the rates of allowance payable in 1829, and thereafter repealing the bounty altogether; so that the payments ceased on the 5th January, 1832. Judging from the extent of our exports before and since the diminution and repeal of the bounties, it does not appear that the manufacture has thence experienced any disadvantage, while the country has saved from 400,000, per annum, formerly paid to enable foreigners to purchase our linen at prices below the cost of production.

The quality of linen yarn is denoted by numbers describing the number of leas (a measure of 300 yards) contained in the last ten yards of each sample. At No. 60 there are leas 60, or 18,000 yards, the present price of which is 5d. per lb. The following table exhibits the length and value at present (December, 1838) per lb. of yard of various qualities:

<table>
<thead>
<tr>
<th>Yards per lb.</th>
<th>Yards per lb.</th>
</tr>
</thead>
<tbody>
<tr>
<td>s. d.</td>
<td>s. d.</td>
</tr>
<tr>
<td>No. 5 1,500</td>
<td>4</td>
</tr>
<tr>
<td>10 3,000</td>
<td>5f.</td>
</tr>
<tr>
<td>16 4,600</td>
<td>6f.</td>
</tr>
<tr>
<td>23 7,500</td>
<td>1l.</td>
</tr>
<tr>
<td>30 9,000</td>
<td>1l.10s.</td>
</tr>
<tr>
<td>35 10,500</td>
<td>6s.</td>
</tr>
<tr>
<td>42 12,000</td>
<td>8s.</td>
</tr>
</tbody>
</table>

Linen yarn is seldom spun of greater fineness than No. 200, which is fitted for making cambric of good quality. The production of mill-spun yarn was for a long time confined to Yorkshire, but is now extended to Dorsetshire, Lancashire, Somersetshire, and Scotland; and recently nineteen mills for the purpose have been established in and near Belfast in Ireland. The improvements realized in this branch of the manufacture will be sufficiently indicated by the fact that the average fineness of mill-spun yarn made in 1814 was 11'-less (3330 yards) per lb., and in 1837 it had reached 37'-less (11,130 yards) per lb., while the cost had diminished in the proportion of 63 per cent. More recent improvements have carried the average degree of fineness to a much higher point, and have still further economized the cost of manufacture. To show the effect which these improvements in the spinning process have had upon finished cloths, it may be mentioned that the price of No. 57 canvas, the quality and dimensions of which are always the same, which in 1814 was 32s. per piece, had fallen in 1832 to 18s.

The number of flax factories at work in different parts of the kingdom, according to returns made by the inspectors of factories in 1835 was 347, of which 152 were in England, 170 in Scotland, and 23 in Ireland. The number and ages of the persons employed in these mills were—

<table>
<thead>
<tr>
<th>Between 8 and 12 Years</th>
<th>Between 12 and 18 Years</th>
<th>Above 18 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males. F.</td>
<td>Males. F.</td>
<td>Males. F.</td>
</tr>
<tr>
<td>England</td>
<td>497</td>
<td>494</td>
</tr>
<tr>
<td>Scotland</td>
<td>104</td>
<td>175</td>
</tr>
<tr>
<td>Total</td>
<td>591</td>
<td>669</td>
</tr>
</tbody>
</table>

The quantity and value of linen and linen-yarn exported from this kingdom in each of the ten years from 1828 to 1837 have been as under:

<table>
<thead>
<tr>
<th>Linens, Yarns, &amp;c.</th>
<th>Declared Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exported to the United States of America</td>
<td>Value</td>
</tr>
<tr>
<td>1828</td>
<td>68,827,104</td>
</tr>
<tr>
<td>1829</td>
<td>70,918,272</td>
</tr>
<tr>
<td>1830</td>
<td>69,819,983</td>
</tr>
<tr>
<td>1831</td>
<td>69,236,892</td>
</tr>
<tr>
<td>1832</td>
<td>69,373,707</td>
</tr>
<tr>
<td>1833</td>
<td>63,256,469</td>
</tr>
<tr>
<td>1834</td>
<td>67,454,388</td>
</tr>
<tr>
<td>1835</td>
<td>77,697,309</td>
</tr>
<tr>
<td>1836</td>
<td>81,906,270</td>
</tr>
<tr>
<td>1837</td>
<td>66,126,855</td>
</tr>
<tr>
<td>Total</td>
<td>4,560,116</td>
</tr>
</tbody>
</table>

It will be seen from the last column in the foregoing table that the fluctuations experienced in the amount of our exports have been occasioned by interruptions that have taken place in the transit of our trade with the States of America. Next in importance to the quantity taken by those States are the exports made to our own American and West India colonies, the foreign West Indies, and Brazil. Our shipments of linen and linen-yarn to different European countries are still of comparatively little moment, if we except the exports made within the last few years to France, and which are almost wholly the consequence of improvements in our spinning and weaving processes. The total value of these exports in 1828 amounted to no more than 7,72984, whereas the value of linen; whereas in 1837 that country took from us 3,368,386 yards of linen, and 7,010,983 lbs. of yarn, valued together at 545,819.

LINES, in Music, are the five parallel lines forming, together with the intermediate staff, the staff of writing. The notes and other characters are placed. [STAFF; LINES.]

LINES OF INTREMTMENT. In the article ENCAMPMENT it has been stated that armies in the field are not now, as formerly, surrounded by fortifications consisting of a continuous line of intrenchments. In general, a few breastworks or redoubts merely are constructed at intervals for the defence of the position. It will be sufficient therefore, leaving out the consideration of those means of defence which are afforded by the natural obstacles of the country, as escarpments, rivers, marshes, &c., to describe briefly the nature of those intrenchments which were once, in all circumstances, considered indispensable, and which are still, to a certain extent, necessary when an army is to remain strictly on the defensive.
In the first place it may be said that a continuous breastwork would be advantageous for the protection of a frontier, when the absence of natural obstacles might favour the enemy's marauding parties in cutting roads for the purpose of levying contributions or laying waste the country; and here a parapet A B, broken by the redans C, C, from whence the defenders might annoy the enemy in flank, on ground where the enemy could not establish batteries for the purpose of enfilading them; since, in the event of such enfilading taking place, the defenders would be compelled to abandon the parapet; artillery, if placed there, would be dismounted; the palisades in the ditch would be destroyed; and thus little resistance could be made, should the enemy subsequently assault the line. In general the redans may have the form of equilateral triangles, and the lengths of their sides may be about 50 yards. The entrances are usually in the middle of the curtains.

Instead of simple redans the advanced parts of the line have occasionally been formed of works resembling treelined together, as D, by which the French engineers are called queues d'hyrondelles.

Again, when the nature of the ground does not permit the intrenchment to be formed with points so far advanced as the vertices of the redans C, C; when, for example, it is required to follow a bank of a river, and to form the parapet with a series of branches in the positions indicated by a, b, d, &c., to P. A line of this kind is said to be à crémailleires; and in such situations a succession of fires from the branches a, b, c, d, &c., may be directed against the enemy during his advance; on a level plain however the longer branches would be subject to the serious defect of being easily enfiladed. The distances between the smallest points a, d, &c., should not exceed 100 yards, and the lengths of the short branches may be about 18 or 20 yards. The re-entering angles c, c, &c., should contain about 100 de grees; and the entrances are usually placed at those points.

A line of intrenchment may be adopted when it is required to connect two points, as M and N, by a line along a narrow and elevated ridge of ground; and in this case the directions of the branches c, d, &c., may change in the middle of the line, as shown in the figure, in order that the fire from the intrenchments may be directed to the front of the nearest works, as M and N, in which it is supposed that artillery would be placed for the purpose of defending the ground before the intermediate line.

It may be added also, that the line à crémailleires (indeclined line) would be convenient when the slope of a hill is in its direction, as from M to P; for then, the enemy being supposed to occupy the ground in front of M, the short branches could be easily raised high enough to deflade those which, as b, c, d, &c., tend towards the foot of the hill.

In fortifying a country presenting few natural obstacles to the advance of an enemy, should the importance of the position render it advisable to incur the labour of the construction, would be a series of bastions distributed by another system of fortifications, the principles on which the several fronts of fortification should be formed correspond to those adopted for regular fortresses, which are described in the article Fortification, col. 2; the only difference being in the lengths of the several parts. These depend upon the whole length of the front, which here should not exceed 180 yards, that the ditches of the bastions may be well defended by common muskets from the collateral flanks. Neither ravelin nor covered-way would of course be necessary.

Lignes composed of works placed at intervals from one another, provided the distances be not so great as to prevent the troops in them from mutually assisting each other, have great advantages over those formed of continuous lines of parapet. In the latter case it is scarcely possible for the army to make a movement for the purpose of attacking the enemy however favourable the opportunity, since much time would be lost in issuing from the line through the narrow passages; and these are the objects against which the fires from the enemy's batteries would then be incessantly directed. Detached works, on the other hand, constitute a number of strong points by which the position of the army is secured; while through the spacious intervals an advance or retreat may take place with all necessary arrangements for their artillery; so that for putting the enemy's line in disorder previously to the attack, and for protecting the retiring columns in the event of their quitting the field. It may be added that detached works are capable of being easily adapted to any kind of ground; for it is merely necessary to place them on the more elevated spots in such situations that the enemy may not be able to penetrate between them without being exposed to their fire.

On level ground the intrenchment may consist of a number of redans, as A, B, C, with or without flanks, disposed on a right line or curve, and at distances from one another equal to about 300 yards, that the fire of musketry from them may defend the intervals. In the rear, and opposite the intervals between the works in the first time, a second line of works, as D, E, should be formed; and the faces of these should be disposed so as to flank the approaches to the other. The thickness of these will be the same as in the figure, or only protected by a line of palisades, which, in the event of the enemy gaining possession of those works, might be destroyed by the artillery in the second line.

Instead of a series of redoubts forming an interior line, it may suffice, should the works A, B, C, &c, be disposed on a convex arc, to have one large central redoubt as F, so situated as by its artillery to defend both the intervals between the redans and the ground within their line. All the works which have been described consist of parapets formed of earth obtained by cutting a ditch in front; and the profile of any one work with its ditch is shown in the subjoined figure (4).

The elevation of the crest A above the natural ground is about 7 feet, unless the vicinity of a commanding height in front should render a greater relief necessary, and the depth of the ditch may be conveniently regulated for putting the enemy's line in disorder previously to the attack, and for protecting the retiring columns in the event of their quitting the field. It may be added that detached
may be employed in the attack: if it were required only to set a fire of musketry, 3 feet would suffice; but from 8 feet to 12 feet would be necessary in the event of artillery being brought against it. (Twelve-pounder shot is the largest which the French have yet employed in the field.)

The form of the parapet is the same as in permanent fortification; when time permits, the exterior and interior slopes should be reviled with sods, and a line of palisades should be connected with it.

LINGUELLA. [Inferosbranotia, vol. xi.]

LINGULA. [Brachipoda, vol. v, p. 313.] Dr. Fitton, in his Stratigraphical Table of Fossils in the strata below the chalk, records three species (one indentical) from the lower greensands—two, Spongites, and one, Lingula. The latter, as the late Wight (1836). Mr. Murchison describes and figures several fossil species: one from the old red sandstone, one from the upper Ludlow rock, one from the Armestrey limestone, one from the lower Ludlow sand, and one from the Wealden shales, and one from the Llandeilo flags. (Situlian Sys-

LINGULINA. [Foraminifera, vol. x, p. 347.]

LINCLA. [Lincoln.]

LINCOLN, THOMAS, a composer who ranks high in Westminster School records as a prime mover in school music, though slow in defending it, was born at Wells, about the year 1725. He was first the pupil of Chilcott, organist of the abbey, Bath, and finished his studies under Paradies, an eminent Venetian, who had become a resident in this country. Mr. Linson refers to his time in the latter city, where he was much sought after as a master, and carried on the concerts in that place, then the resort of all the fashionable world during a part of every year. To the distraction of these, his two daughters, Eliza and Mary, assisted as pianists. In Mr. Taylor's "Life of Mr. Linson," we read conspicuous admiring singing, particularly that of the former, which we are told has never been surpassed, contributed very largely.

On the retirement of Christopher Smith, who had been Handel's amanuensis, and succeeded him in the manage-

LINOKEP. [Sweden.]

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LINLEY, WILLIAM, born about the year 1767, and educated at Harrow and at Mr. Paul's schools, was the younger. Mr. Fox appointed him to a writership at Madras, and he soon rose to the responsible situations of paymaster at Vellore and sub-treasurer at Fort St. George. He returned from India in 1793, had a seat in the house of commons, and devoted the remainder of his life partly to literary pursuits, but chiefly to music, of which he was passionately fond, a talent for the art coming to him as it were by inheritance. He produced a considerable number of glees, all of them evincing great skill in composition, and some of them also will make him known to posterity, along with others who have most distinguished themselves in this charming and truly national kind of music. Mr. W. Linley also published, at various periods, a set of Songs, two sets of Canzonets, together with many detached pieces. He was likewise the compiler of the "Dramatic Songs of Slaepe," in two folio volumes, a work of much research and great judgment, which are several of his own elegant and sensibl compositions. Early in life he wrote two comic poems, one performed at Drury-lane theatre; and two novels, and several short pieces of poetry. He likewise produced an elegy on the death of his sister Mrs. Sheridan, part of which is printed in Moore's "Life of Richard Brinsley Sheridan." This last survivor of the Linley family died in 1835.

LINLITHGOW, or WEST LOTHIAN, is a small county of Scotland, bounded on the north by the Frith of Forth, on the west, south-west, and north-west by the shires of Stirling and Lanark, and on the south and south-east by the shires of Berwick and Lanarkshire. It is nearly 21 miles; and its greatest breadth, from the north-west extremity of the county to the village of Livingston, on the south, is only 10 miles. It is bounded by seven parishes, which are comprised between 56° 51' and 56° 1' N. lat., and 3° 17' and 3° 50' W. long.

In 1794 Mr. Trotter estimated the area of the county and the distribution of the soil as under:

<table>
<thead>
<tr>
<th>Soil Type</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good clay lands</td>
<td>14,000</td>
</tr>
<tr>
<td>Loam</td>
<td>7,000</td>
</tr>
<tr>
<td>Light gravel and sand</td>
<td>7,000</td>
</tr>
<tr>
<td>Clay, cold, and hard bottom</td>
<td>18,000</td>
</tr>
<tr>
<td>High rocky land</td>
<td>18,000</td>
</tr>
<tr>
<td>Moss</td>
<td>1,000</td>
</tr>
</tbody>
</table>

Or about 71,250 English statute acres, which is probably rather less than the true area. Mr. McCallum estimates it at 76,800 statute acres, or 112 square miles.

The surface is pleasantly diversified with hills and valleys, and intersected by numerous rivers or burns, but there are no streams which merit the appellation of rivers, excepting the Avon and Amond, and even these are small, and belong as much to the shires of Stirling and Edinburgh as to that of Linlithgow. The Fish, beyond a few fresh-water trout, are but two locks in the vicinity of the town of Linlithgow are well stocked with pike. The Union

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The principal towns are Linlithgow, Bathgate, and
Borrowstounness (BATHGATE). The village of Linlithgow is a high-road town, and a royal burgh of considerable antiquity, is sixteen miles west by north from Edinburgh. The earliest charter upon record is that of Robert II., dated 23rd October, 1389. To this succeeded the charters of James II. (1451-4), James III. (1462), James IV. (1513), and King James V. (1547); and in 1593, and Charles I. (11 July, 1633), whereby various privileges were conferred upon the town. The magistracy is composed of a provost, 4 bailies, deean of guild and treasurer, who are elected from the 7 common-councillors, in conformity with a will, IV., c. 76. The debt of the burgh is consider-
able, though less than in former years. In 1692 the magistrates reported that they owed 18,353l. Scots, or about 1200l. sterling; but in 1835 it had increased to 6141l. ster-
ling. The revenue, derived principally from landed pro-
erty and town-dues, amounted in the last assessed year to 710l., which was exceeded by the expenditure.
The town is paved, well lighted with gas, and tolerably clean. It is likewise well supplied with water, but not protected by an efficient police. The population in 1831 was 4874.
The burgh school is said to be ably conducted. The two teachers are appointed by the town-council, under an examination by the professor of Latin or the rector of the high school of Edinburgh. Linlithgow unites with Lanark, Peebles, and Selkirk, in returning one member to Parliament as a common burgh.
Borrowstounness, which, after being a royal residence for several centuries, was accidentally set on fire in the year 1746, and is now a magnificent ruin. In the palace chapel is still shown the sacle where an apparition is said to have appeared to James IV. of the impending issue of the battle of Flodden.
Borrowstounness is an incorporated seaport-town, 17 miles west by north from Edinburgh. Here are extensive salt-
works, the produce of which is supposed to exceed 30,000 bushels per annum. There is a large salt-water channel carried on, and some trade with the Baltic in tallow, hemp, &c.; but during the season a considerable portion of the inhabitants are engaged in the herring-fishery. The harbour is considered safe and commodious, and, with a view to its improvement, an act was passed in 1770 for the improvement of Linlithgow, which, after being a royal residence for several centuries, was accidentally set on fire in the year 1746, and is now a magnificent ruin. In the palace chapel is still shown the sacle where an apparition is said to have appeared to James IV. of the impending issue of the battle of Flodden.

The following table, exhibiting the state of the several parochial schools in the year 1825, is compiled from parlia-
mentary papers relative to the parochial education of Scot-
land. It does not include the private schools, which are numerous and tolerably well supported:

<table>
<thead>
<tr>
<th>Parish</th>
<th>School Fee per Quarter in the Year 1825, and the Branches of Education then taught.</th>
<th>Average Number of Scholars.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abercrom</td>
<td></td>
<td></td>
</tr>
<tr>
<td>465 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bathgate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>102 0</td>
<td>English, writing, arithmetic, Latin, and Greek.</td>
<td></td>
</tr>
<tr>
<td>Borrowstouness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>62 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corstoun</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14 11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dalmeny</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 14 10</td>
<td></td>
<td></td>
</tr>
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...the church, for which he was intended; they in fact recommended him to be apprenticed to some handcraft trade. The schoolmaster at Wexo, who pronounced this unfortunate judgment, although designated by one of Linnaeus' biographers as an "iniquous doctor," does not appear to have been able to say much else in his criticism. In the discussion that followed; for Bishop Agardh admits that when, at the age of twenty, Linnaeus arrived at the University of Lund, for the purpose of studying medicine, the profession finally determined upon for him, he was less known for his acquaintance with natural history than for his ignorance of everything else.

Matriculated at Lund, Linnaeus was so fortunate as to be received into the house of Dr. Stobaeus, a physician possessing a fine library and a considerable knowledge of natural history. The elder Linnaeus, during his lifetime, had made several journeys to Lapland, and his son started out upon one. It is said that when the elder Linnaeus had died, he left his son with a large annual stipend; that the younger Linnaeus was able to use his fortune to travel, to pass the vacation at home, and to form the collection of books, which was the foundation of his later scientific researches. The elder Linnaeus, however, had not foreseen the difficulties that would later arise. The younger Linnaeus had to pay for his studies, and the money from the stipend was not sufficient to support him.

In Holland Linnaeus formed a friendship with Dr. John Burmann, professor of botany at Amsterdam, and it was during his stay of some months with that botanist that he printed his "Fundamenta Botanica," a small octavo of ninety pages, the first volume of his six-volume work, in which he had already written upon natural history, to gain an insight into the value of collections, to extend his ideas by the study of the comparatively rich Flora of his alma mater, and above all things to enjoy the inseparable advantage of having at his disposition the extensive resources of six pages in one volume, and the use of the books and papers which he could rely upon. The year 1727-8, and the house of Stobaeus, were beyond all doubt the time and place when Linnaeus first formed that fixed determination of devoting himself to the study of natural history, which neither poverty nor mud could diminish. The elder Linnaeus, who had gone to Amsterdam to obtain a patent for a carpet, remained there, and in the magnificent mansion of the house of Stobaeus, he passed the vacation at home, and there formed the resolution of prosecuting his future studies at Upsal—a measure which for the time lost him the good-will of his patron Stobaeus. For the purpose of meeting the expenses of his adventure, he diligently perserved in attendance upon the courses of lectures, devoting the remaining time to the study of the sciences, in which he was most interested. He had already become acquainted with the chief works that dealt with botany, and he was eager to learn more about the subject. He began to study the works of other botanists, and he was particularly interested in the writings of Robert Hooke and Robert Boyle.

At that time he was introduced to Mr. George Clifford, a wealthy Dutch banker, possessing a fine garden and library at a place called Hartecamp. This gentleman embraced the opportunity of putting it under the charge of his patron, and he was able to hold a garden party on the 23rd of June, 1733, during which time he is said to have been treated with princely munificence by his new patron. His scientific occupations consisted in putting in order the objects of natural history contained in Mr. Clifford's museum, and in his garden, in preparing the specimens for the 'Flora Lapponica,' 'Genera Plantarum,' 'Critica Botanica,' and other works, and in the publication of the 'Hortus Cliffortianus,' a fine book in folio, full of the learning of the day, ornamented with many fine engravings by Mr. Clifford, who gave it away to his friends. Some idea may be formed of the energy and industry of Linnaeus, and of his very intimate acquaintance with botany at this period of his life, by the fact that he had been weary of the life he led at Hartecamp, and towards the end of 1737 he quitted Mr. Clifford under the plea of ill health, and an unwillingness to expose himself again to the autumnal air of Holland. Linnaeus had, however, been in the north of the country for some time, and although it is said that he did not really quit the country before the spring of 1738, and in fact he was evidently tired of his drudgery, good Mr. Clifford would scarcely allow him to leave the house, where Linnaeus complains of being "incorruptus monachi instar," as he could not be persuaded to remain in his house at Hartecamp that he visited England, where he seems to have been disappointed both at his reception and the collection of naturalhistory which he found there. He was ill received by Dillemius, at that time professor of botany at Oxford, who was not in favor of the use of plants in the garden, and he was taken with some of his genera; and although the quartal was made up before his return to Holland, it seems to have compressed the Swedish naturalist not a little. He describes the celebrated collection of plants formed by Sir Hans Sloane, as being univalled in European species, but of little moment in exotics; he found the Oxford garden in a like condition, but with the greenhouses and stoves empty; and the great collection of Sir Hans Sloane in a state of deplorable confusion and neglect. Dr. Shaw,
Towards the latter part of his life Linnaeus suffered severely in health. Apoplexy succeeded repeated attacks of gout and gravel, and was followed in its turn by paralysis, which impaired his faculties, and at last he was carried off by an ulceration of the bladder, on the 10th of January, 1778, in the 71st year of his age. His remains were deposited in a vault near the west end of the cathedral atUpsal, where a monument of Swedish glory was erected by his pupils. His obsequies were performed in the most respectful manner by the whole universitv, the pall being supported by sixteen doctors of physic, and all of them in mourning. A general leave of absence took place on the occasion at Upsal, and King Gustavus III. not only caused a medal to be struck expressive of the public loss, but introduced the subject into a speech from the throne, regarding the death of Linnaeus as a national calamity. The Boréal Florists had already adverted to the effect produced by Linnaeus upon that branch of science. His merit as a systematicist is unquestionable; the clearness of his ideas, his love of science, his skill in abridging, abstracting, his adapt the object of the contrivers, for afterwards no other botanical arrangement was received in Sweden.

From this time forwards the life of Linnaeus was one of increasing fame and prosperity. Every branch of natural history which had been neglected or even reprobated was utilized and exploited, and new objects were sent to him from all parts of the world; his pupils Hasselquist, Osebeck, Sparmann, Thunberg, Kalm, Lodd, and others, communicated to him the result of their travels. Europe, Asia, Africa, and America. He was named professor of botany at Upsal, and afterwards atStockholm, and finally professor of botany of botany; in 1746 he received the rank and title of architect; in 1757 he was raised to the nobility, and took the title of Von Linne; and by the year 1758 was able to purchase his residence at Hammarby and Sofia for 99,000 Swedish dollars, above 250,000, sterling.

During these eighteen years his life was one of incessant labour; besides his practice as a physician, which was extensive and lucrative, and his duties as professor, he published a number of works on the various branches of natural history. His works upon other branches of natural history were not less important than those on botany, but they all evinced the same ingenuity in classification, and that logical precision which has rendered the writings of Linnaeus so valuable. Among his numerous dissertations, of the 'Amoenitates Academici', the 'Flora', and 'Fauna Suedica', 'Material Medica', edition after edition of the 'Systema Naturae', and numerous miscellaneous works, some of great importance, he produced his 'Philosophia Botanica', and 'Species Plantarum.' The former, dedicated from a sick bed, was the best introduction to botany that had been written, and is far superior to the numerous treatises on the subject which subsequently appeared from the pens of his followers. The latter, which is one of the most valuable works on any subject, and with respect to the existing knowledge of plants in a clear and intelligible form; the invention of generic and specific names, by which every plant could be spoken of in two words, and the accurate and correct alphabetical arrangement of references rendered it invaluable, notwithstanding its omissions, as a catalogue of the plants at that time known, and with respect to the existing knowledge, this book deserves all the praise which has been given it; and botanists have, as by common consent, taken the second edition, which appeared in 1762, as the point of departure for systematic nomenclature. So great is the importance still attached to it, that an edition, chief of consisting of it and the 'Genera Plantarum', incorporated in the state in which they were left by Linnaeus, has nearly passed through the press under the name of 'Colleg Botanici Linnaei,' compiled by Dr. Hermann Eberhard Richter.
LINNET, the name of a hard-billed singing bird, which though well known under one or the other of its various spellings to every English bird-catcher, has, in consequence of the changes of its plumage and the names applied to it when it appears under those changes, given rise to such confusion in our systems and catalogues, and considerable the better opinion is against Bechstein, and in favour of the mountain Linnet being a distinct species.

M. Temminck, who observes (Mémoires d'Ornithologie) that Fringilla cannabina and Fringilla montana have been often confused, and that he has endeavoured to distinguish them by a small number of characters placed at the head of the short descriptions and of the synonyms, the same mode of distinction to Fringilla cannabina and montana, which heretofore have also been confounded. The short character given by him to his Gros-beec Linotte (Fringilla cannabina, Linn.), is: 'Bill short, of the width of the front, blackish; throat whitish, marked in the middle by a black line of the same breadth, wing-coverts, chestnut-brown; back, reddish-brown; rump, reddish; tail, variegate, black and white; some of the quilla black, bordered externally with white; tail forked, black; the feathers edged externally with white and bordered internally by a large white space; iris, brown; bill, deep bluish; feet, reddish-brown, more or less pale. Lenné, Gmelin.'

Male, after the autumnal moult at the age of a full year.

On the top of the head large black spots; the back reddish, with spots of chestnut-brown, bordered with white-brown; breast, red ash-brown, or red-brown, with borders of chestnut-brown; belly, greyish-white, or greyish-red, with a short white bar at the base of the tail; 

In this state M. Temminck considers it to be Fringilla Linotte, Gmelin; Latham, Ind. v. p. 457, sp. 81; La Linotte ordinaire, Buffon, Oise. v. 4, p. 58, t. 1; Id., Pl. Enl. 151, f. 1; Gérard, Tab. Elém., v. 1, p. 188; Common Linnet, Latham., p. 317; Gmelin.

The Female, which does not change colour after arriving at the adult state, is smaller than the male; all the upper parts are of a greyish-yellow, sprinkled with blackish-brown spots; wing-coverts of a tarnished red-brown; lower parts bright reddish, but without the brilliance of the belly, and sprinkled on the flanks with numerous blackish-brown spots.

Young males till the spring, have the top of the head and the back reddish-brown, marked with black; brownish coeleate spots; cheeks and nape ash; all the lower parts of a slightly reddish-white, marked on the middle of the throat and on the breast with longitudinal spots of a deep brown; large reddish-brown spots on the sides; and large blackish-brown spots on the rump; as well as the cheeks; the lower parts being of a flesh-colour; base of the bill livid blue: it is then the bird given by Meyer, Vog. Deutschl. and by Frisch, Vog., t. 9, f. 12 and 13.

For the Old Birds, Male and Female, M. Temminck brings together the following synonyms and references - Fringilla cannabina, Gmelin., Syst. v. 1, p. 916, sp. 28; Latham., Ind. v. p. 458, sp. 92; Retz, Faun. Suec., p. 247, No. 226; La Grande Linotte de Vignes, Buffon, Oise. v. 4, p. 58; Id., Pl. Enl. 485, f. 1 (the male putting on its plumage) and Pl. Enl. 151, f. 2 (the very old male, under the false name of Petite Linotte de Vignes); Id., Pl. Enl. 151, f. 1 (either a female, or, perhaps, a male in autumn); Gérard, Tab. Élém., v. 1, p. 190; Greater Red Headed Linnet or Redpole, Leist. Syra. v. 3, p. 304; Id., Sper. p. 124; Blüthner, Vögel. v. 1, p. 175; Montanaro Maggetto, Ster. dell. Ucc. v. 3, p. 357, f. 1.

In the third part of his 'Manuel' (1835) M. Temminck adds the following references and synonyms: - Atlas du Manuel, pl. libog. (male); Viollet, Faun. Frang., p. 77, pl. 38, figs. 2 and 3; Roux, Ornith. Proc. v. 14, pl. 91 (old male in the spring), and 92 (male in autumn); Fichten und Busch Blätternd. Brehm, Vogel. v. 576; La petite Linotte de Vignes, Buff., Pl. Enl. 191, f. 2 (male in moult); Neum., Neue Zücht., tab. 121.

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Returning to the two first parts of M. Temminck's 'Manuel' (2nd edit., 1820), we find him observing that the variety of the plumage described by Meyer under the letter c and that under the letter a ought to be arranged under Fringilla montifringilla.

M. Temminck remarks that this bird molts but once a year—in the autumn; but nevertheless the spring or nuptial plumage is of a beautiful red tint on the head and breast. He describes this to friction and the action of the air, which wear away the sombre and shaly borders of the feathers, and cause the red colour, partially hidden in winter under the ashy edges with which these feathers are terminated, to appear in its true splendor in spring. It seems that one may conceive that age and the more or less distant time of molting may vary this plumage greatly.

The reader however should not forget the changes of coloration that will roll and otherwise stick in to place in the plumage of birds without change of feather, and where friction could hardly have been the agent.

Mr. Selby (1825), after the remarks already quoted, proceeds thus:—"Mr. Bewick however, in the Supplement to his work on British Birds, still continues to believe in the existence of two distinct species: for so we must understand him (although he has brought the synonyms of the two supposed species together), since in a note following the description and figure of his greater redpole, or brown linnet, he says that 'it loses the red breast in sun-run, and regains it in spring; in this it differs from the grey linnet, whose plumage remains the same at all seasons.' From his description of the Grey Linnet (the usual Northumbrian name of this bird), as given in the first volume of his work, it is evident that the brown linnet is the common species in a particular age, although he has attached to it the Linnean synonyms of the lesser redpole. 'If,' continues Mr. Selby, 'Mr. Bewick's observations on the plumage of the linnet were made upon caged birds, I am not surprised at his assertion of its always retaining the same appearance; for have I repeatedly verified the fact of its never acquiring, under confinement, those brilliant tints which distinguish it at a particular period of the year when in a state of liberty. I wish to inquire whether the instant appearance of these colors is not due to that period of the year. For some particular purpose of observation, a linnet was shot more than two years ago, towards the close of summer, when the plumage showed its most perfect nuptial tint; and, happening to be only winged, it was put in a cage, where it grew to maturity, and until its death. When killed, the bird was entirely saturated to its situation, and still continues. About the usual time, in the autumn of that year, it moltings, and acquired the winter dress of the common linnet, which it has retained ever since, without displaying the least indication of the brilliant red that adorned it in the wild state.'

Mr. Selby, who gives us his great work the figures of a male bird in summer plumage, and of the nat. size (p. 55, fig. 3), and of a female, nat. size (ibid., fig. 4), collect the following synonyms for this species:

Kannabina, Linn. Synt., p. 322, sp. 28.  
Greater Redpole, or Brown Linnet, Mont., Ornith. Dict.  
The Linnet, Low's Faun. Orn.  
Greater Redpole Finch. Shaw's Zoö., v. 9, p. 516.  

Fringilla Linota, Gmel., Synt.  
Lath. Ind. Ornith., v. 1, p. 457, sp. 81.  
Linaria, Rauv., Synt.  
Prunus, A. L.  
Will. (Lesser)  
Id. (An. Var.), Briss. 3, p. 131, t. 29.  
La Linotc ordinaire, Buff. Ore, v. 4, p. 58, t. 1; Id. Pl. Ent., t. 151, f. 29.  
Walc. Syn., t. 221.  
Grey Linnet, Bewick's Br. Birds, 1, p. 171.  

Fringilla cannabina, Gmel., Synt.  
Prunus, A. L.  
Lath. Ind. Ornith., v. 1, p. 455, sp. 82.  
Linaria rubra major, Briss. 3, p. 129, 30;  
Rauv. Syn., p. 91, 2; Will., p. 191, t. 46.  
The Grand Linotc des Vignes, Buff. Ore, v. 4, p. 58; Id. Pl. Ent., 485, f. 2; old male under the title of Petite Linotc des vignes.

Mr. Gould, in his beautiful work on the Birds of Europe, figures a male in the spring or nuptial plumage, and a female of the nat. size, under the name Linaria cannabina, Le Gros-beck Linotte, Common Brown Broan Finch, and refers to Mr. Selby principally for the account of the changes of plumage. He also notes the confusion which formerly obtained about this species.

Varieties.—M. Temminck says that the bird varies accidentally to pure white, whitish, with the wings and tail as they are ordinarily; the colours feebly traced on the plumage; a part of the body white, or variegated with white feathers. All the plumage blackish, or more sombre than ordinary; the head and breast are brownish; the grey linnet is𬶋ller Argentoratensis, Gmel., Synt. 1, p. 918, sp. 69;  
Lath. Ind., v. 1, p. 460, sp. 87;  
Le Gentil de Strasbourg, Buff. Ore, v. 4, p. 73;  
Gérard, Tabl. oem. 1, p. 194.

Genus Fringilla.—Distribution. Holland (Temm.) Very common throughout Britain, extending as far as to the Orkneys, where it is abundant. (Selby.) Indigenous to the British Islands, over the whole of which, and Europe generally, it is plentifully dispersed. (Gould.) Erasmus in Pers. (Ked.)

Habits. Food. Propagation.—In Britain resorting to waste lands and commons in the upper parts of the country, where it breeds. Assembling in winter in very large flocks, and descending to the sea-coasts, where these birds remain till March. The same remark holds for the linnet, that of the consilium consists of small seeds generally; those of the cruciferae plants are favourites. The nest is built in a low bush, most frequently in furze, of moss and stalks of grass intertwined with wool, and lined with hair and feathers. Eggs, 4 or 5, bluish-white dotted with purplish-red. (Selby principally.)

The bird is provincially termed Greater Redpole, Rose Linnet, Grey Linnet, Lintwhite, and Lintie. Belon is of opinion that this species is infected by Linaria amera (Aegithus) from Aristotle, in the fiftieth chapter of his nineteenth book ('Hist. Anim.'). The French and German names have been given above. It is the Fanello of the modern Italians, and Linnetos and Linnos bengock of the antient Greeks.

The common Linnet is prized for its sweet song, and has been taught to imitate the human voice. The Hon. Danes Barrington mentions the celebrated talking Linnet at Kensington. He heard it repeat the words ' Pretty boy.'

Our limits will only permit a cursory notice of the other species generally considered as Linnetas.


Mr. Gould, in his 'Birds of Europe,' gives the following species of the genus Linaria of authors, in addition to the Common or Brown Linnet above noticed: Linaria montana, Mountain Linnet, or Turie; Linaria comeana, Many Redpole; and Linaria minor, Lesser Redpole. The Mountain Linnet occurs occasionally in the north of England, under the name of M. Temminck, on the authority of Dr. Von Siebold and Mr. Burger, of European species of birds found in Japan, where it is known by the name of Zuzuma. This is the bird described by M. Temminck, and Linos yunad of the antient Brits.

The Green Grosbeak or Greenfinch (Y Gagôt, Linnos yunad of the antient Brits) is sometimes called by the Green Linnet. (Fringillidae, vol. 2; GREENFINCH, vol. 1.)
LINSEED (Graisse de Lin, French; Leinmehl, German; Linsel, Dutch; Linaza, Spanish; Linhaça, Portuguese; Lino, Italian; Semjedeljenje, Russian), the seed of the Linum, Linum, or flax plant, is a valuable product derived from the capsules of Linum usitatissimum, and consisting of small greyish-brown lenticular bodies, containing a mealy albumen, and covered with a thick outer coat. The seed is large and is exported from the United Kingdom. Linseed is also much used as food for small birds. The importations during each of the last ten years have been:

<table>
<thead>
<tr>
<th>Year</th>
<th>Importations in Bushels</th>
</tr>
</thead>
<tbody>
<tr>
<td>1826</td>
<td>1,996,414 bushels.</td>
</tr>
<tr>
<td>1827</td>
<td>2,058,256</td>
</tr>
<tr>
<td>1828</td>
<td>2,027,989</td>
</tr>
<tr>
<td>1829</td>
<td>2,160,455</td>
</tr>
<tr>
<td>1830</td>
<td>2,070,748</td>
</tr>
<tr>
<td>1831</td>
<td>2,759,103</td>
</tr>
<tr>
<td>1832</td>
<td>3,393,215</td>
</tr>
<tr>
<td>1833</td>
<td>3,995,072</td>
</tr>
</tbody>
</table>

The principal part of these importations is from Russia; the quantities brought from that country in each of the last three years were 1,534,075, 2,109,530, and 2,438,534 bushels respectively, being very nearly seven-tenths of the whole importation. The remainder is received from other countries in the north of Europe, and principally from Prussia and Holland; from Italy, Turkey, and the United States of America; and within the last three years some shipments have been received from the territories of the East India Company. The whole importation goes to Ireland, and is chiefly used for sowing. The best seed for this purpose is brought from Holland. The residue of linseed from which the oil has been expressed is used, under the name of meal, for fattening cattle. The duty paid on the importation of linseed into this country is 14d. per bushel, and the price in our markets is usually from 45s. to 55s. per quarter of eight bushels.

LINSEED-OIL may be procured by cold expression of the seeds, a process which makes the oil clearer; or the bruised seeds are roasted in the oil-mills, in which case it is brownish-yellow, and easily becomes rancid, probably from attracting oxygen. Linseed-oil is yellow, with a faint but peculiar odour and taste, generally disagreeable, and the water in which is from being subradue. Specific gravity 0.92. It easily dries; by reduction of temperature it merely becomes cloudy, but scarcely freezes. It may be easily purified by repeated agitation with water, by bleaching in the sun, or, better, by filtering it through newly prepared charcoal.

By long boiling it becomes dark-brown, tenacious, and thickened, but dries more easily, and in this state is used by printers' ink. By still longer boiling it becomes black, almost solid, and elastically tenacious, like caoutchouc, and in this state it serves for bird-line.

By the addition of nitrous acid it becomes thick and red, then dark reddish-brown, like timbre of iodine, but does not become solid. It is frequently adulterated with rape-oil, which may be detected by this test. Neither does it form elaidin, as rape-oil does. But a simpler test is, that if wood be immersed with oil which has been adulterated, it does not become dry.

Linseed-oil is used to form liniments, of which the most common is that with lime-water, as an application to burns. But it is much more extensively used in the arts, particularly for painting.

LINUM USITATISSIMUM. [Foraminifera, vol. xi., p. 346.]
LINUChIA. Escholtz gave this generic name to certain forms of the Linuman genus Medusus. ('Actinologie,' p. 259.)

LINUM, a genus of plants which gives its name to the family of Linaceae, and is characterized by having five distinct sepals, five petals, five stamens, and from three to five styles, which are either distinct from the base, or united as far as the middle, or even the apex. Capsule globular, divided into ten cells, each containing a single seed. Herbae oculae or shrubs; leaves entire, without stipules; fl. teares lasting the petals falling off shortly after flowering. The species are chiefly found in Europe and the north of Africa, but a few likewise in other parts of the world. Few however are of any importance, except that which has been an object of culture from the earliest times of which we have any record, that is Linum usitatissimum, or the flax-plant, which is valuable as well for its seed, as for the ligneous fibre of its cortical layer, which forms the tow spun into yarn and woven into linen cloth. [Flax; Linen.] It has been sometimes said that cotton is the substance from which cloth was made in Egypt in ancient times. Cotton was no doubt known to the Hindus at very early periods, and may have formed an article of commerce to Egypt from India, but that it was not much used is proved by none of the mummy cloth, which has been examined by the best microscopes, being found to be composed of cotton. The seed is valuable for the condensed mucilage contained in its seed-coats, while the almond contains a fixed oil, valuable for burning, and in the arts as a drying oil; the oil-cake is used for fattening cattle. Linseed is extensively imported from Russia, Italy, and Egypt, for crushing, but of late years it has been imported in large quantities from India for the same purpose; this is found to yield a larger proportion of oil than Russian linseed, and the commerce will no doubt continue to increase. Seed is also imported from Holland, America, and other places for the purpose of sowing, as it is found to yield a finer and more abundant crop than the British seed. It is curious that the Hindus make no use of the ligneous fibre; but the plants, though they there produce fine seed rich in oil, are so dwarfish, and may not therefore be found profitable culture for a person who have cotton in such abundance, and who wove it into cloth in ages when even linen was unknown in Europe.
The compound infusion of linseed is demulcent, and the unpleasant taste may be much lessened by using cold water to form it, as stated above. The forms of the seeds, ground before the oil has been expressed, furnishes the best material for pastilles, but does not keep well. The cake remaining after the expression of the oil is much used to fatten cattle, but gives a peculiar taste to the meat.

The lint, or charpie, used by surgeons to dress ulcers, &c., should always be prepared from linen-cloth and never from cotton, as an essential difference exists in the nature of their fibres, which causes that of cotton to prove extremely irritating.

LINZ, the capital of Upper Austria, in 48° 19’ N. lat., and 14° 17’ E. long., is agreeably situated at the junction of the Traun and the Danube, over which latter river there is a wooden bridge 864 feet long. It is divided into four sections, viz. the town and the three suburbs. The old town consists of one long street, and is of much less extent than the suburbs. There are four gates and three squares, in the largest of which there is 'the Pillar of the Trinity,' erected by the Emperor Charles VI. in 1725, and also two fountains. It is on the whole well built, for which it is not a little indebted to several fires, after which the parts destroyed have been always much improved; this was especially the case after a very great fire in 1800, which consumed the county hall, the castle, and many other buildings. There are seven churches, the largest of which is the cathedral, formerly belonging to the Jesuits. Other remarkable buildings are the government-house, the new county hall, where the provincial estates meet, a very magnificent edifice; the town-hall, built in 1414; the city brewery, the custom-house, the gymnasia, the handsome theatre, and the great imperial manufactories of woolen cloths and carpets, which in its most flourishing period gave employment, directly or indirectly, as it is stated, to 25,000 workmen, and used 3000 cwt. of wool annually. At present the number of workmen is only 16,500, exclusive of the numerous mechanics and artisans in Linz to whom it affords employment. It suffered severely by the French invasions. Linz is a bishop's see, and has a leucem, with a library of 25,000 volumes, several public schools, a deaf and dumb asylum, and many charitable institutions. There are considerable manufactories of calico, dimity, leather, gunpowder, &c. The population of the town and suburbs, including some adjacent villages, is 25,500. It is a place of considerable trade, which the iron railroad to Budapest in Bohemia and the lately established steam-navigation of the Danube to the Black Sea must greatly increase. In order to defend Austria on the west, Linz was chosen for the execution of a new system of fortification invented by the Archduke Maximilian of Este.

LION, the English name for the form in which carious development is generally considered to be the most perfect: Λίων (Leon, Lionesse; Leo of the Romans (Leao and Leon, Lionesse); Leone of the Italians; Λέων (Levon, Leon; Λιοννης, Leo, the Spanish); Λέων of the French (Leon, Lionesse, Linceau, whelp); Λεον of the Germans (Löwein, Lionesse). The male is, as a general rule, ornamented with a mane; the female has no such ornament.

**Organisation.**

The organisation of the lion is treated of in the article Felis, vol. x., and the reader is requested to bear in mind that the short descriptions under the figures of the claws (p. 214) are misplaced; fig. 1 being from the forefoot, and fig. 2 from the hind foot. In addition to the points there stated we must draw attention to the following. There are, it appears, distinguishing characteristics marking the differences between the skulls of the Lion and Tiger; and Mr. Owen explained these to a meeting of the Zoological Society of London (1824), when several cranialia of these two species were exhibited. He adverted to the distinctions pointed out by Cuvier in the 'Osseens Fossiles,' and remarked on the first of them, viz. the straightness of the outline in the lion from the midspace of the postorbital processes to the end of the nasal bones in one direction, and to the occiput in the other, as not being in all cases available; but he regarded the second distinction—the flattening of the interorbital space in the lion and its convexity in the tiger—as being more constant and appreciable. He pointed out however a distinction which had never, according to his belief, been published, which is, he observed, well marked, and which appears to be constant; for he found it prevail throughout the whole of the skulls of these animals which he had examined, including ten of the lion, and upwards of twenty of the tiger. It consists in the prolongation backwards in the cranium of the lion, of the nasal processes of the maxillary bones to the same transverse line which is attained by the coronal or superior ends of the nasal bones in the tiger the nasal processes of the maxillary bones never extend nearer to the transverse plane attained by the nasal bones than one-third of an inch, and sometimes fall short of it by two-thirds, terminating also broadly in a straight or angular outline, just as though the rounded and somewhat pointed ends which these processes have in the lion had been cut off. Mr. Owen noticed also minor differences in the form of the nasal aperture, which in the tiger is disposed to narrow downwards and become somewhat triangular, while in the lion its tendency is towards a square shape. In the deeper sinking in a longitudinal depression of the coronal extremities of the nasal bones in the tiger than in the lion; in the bounding of this depression in most of the tiger's crania by a small but distinct semicircular ridge, which is not found in those of the lion; and in the larger comparative size, chiefly in their transverse diameter of the infraorbital foramina in the lion. Mr. Owen remarked that it was curious that these foramina were double either on one or both sides in the only four skulls examined of lions which were known to be Asiatic, whilst...
Mr. Woods, thinking it probable that these prickles might exist in other species of Potto, had previously examined the tails of nearly the whole of the stuffed skins in the Society’s museum, but failed in detecting it in every instance but one. This was an adult Asiatic leopard, in which the tail was evident, although extremely small. It was short and straight, and perfectly concealed, as a broad band, by Mr. Woods observed that it was stated in a note in the Edinburgh Philosophical Journal, where a translation of Blumenbach’s paper had been given, that a claw or prickle had also been observed by the editor of that work on the tail of a leopard. No such structure however was detected by Mr. Woods on a living individual in the Society’s menagerie. In the leopard therefore, as in the lion, it appears to be only occasionally present. In both it is seated at the extremity of the tail, and is altogether unconnected with the terminal caudal vertebrae. From the narrowness and shape of its base, the circumference of which is by far too small to allow of its being fitted like a cap upon the end of the tail, it appeared to Mr. Woods rather to be inserted into the skin, like the bulb of a bristle or trichotom, than to adhere to it by the margin, as described by M. Deshayes. Neither the published observations of that zoologist nor the discovery then communicated to the Society could, it was observed, throw any light on the existence or structure of the supposed terminal follicle noticed by Blumenbach.

Mr. Woods concluded by remarking that it is difficult to conjecture the use of these prickles, their application as a stimulus to anger being of course out of the question; but he observed that nothing was not very important, for, to say nothing of their small size and apparent uselessness, the majority of individuals, in consequence of the readiness with which the part is detached, are deprived of it for the remainder of their lives. (Zool. Proc., 1832.)*

Prickles at the end of the lion’s tail. (Blumenbach.)

Emasculature, it is stated, prevents the development of the mane; and the lion so mutilated is said never to roar.

Geographical Distribution.

The true lions belong to the Old World exclusively, and they were formerly widely and plentifully distributed; but at present they are confined to Asia and Africa, and they are becoming rare in many of the quarters of the globe. That lions were once found in Europe there can be no doubt. Thus it is recorded by Herodotus that the baggage camels of the army of Xerxes were attacked by lions in the country of the Paeonians and Cretomoni, on their march from Acarnania (near the peninsula of Mount Athos) to Therman, afterwards Thesalonica (now Saloniki): the camels alone, it is stated, were attacked, other beasts remaining untouched as well as men. The same historian also observes that the limits of Europe within which lions were then found were the Necastri or Nestus, a Thracian river running through Abdera, and the Acheolus, which waters Acrania. (Herod. viii., c. 125-126, Schwingleh.; and see the article Atossa, p. 27.) Aristotle (vi. 31) says that the Lion is in fact an animal but little known. 'In the whole of Europe, for example, there are no lions, except between the Acheolus and the Necastri.' Again, the same author (viii. xxxvii, 33 of Scaliger’s discourse) mentions Europe as abundant in lions (famam) and states that a part which is between the Acheolus and Necastri, apparently copying the statement of Herodotus. Pliney (xxiv. 67) does the same, and adds that the lions of Europe are stronger than those of Africa and Syria. Pausanias copies the same story at the account of the lions on the country of Xerxes, and he moreover that lions often descended into the plains at the foot of Olympus, which separates Macedonia from Thrace, and that Polydorus, celebrated athlete, a contemporary of Demetrius Nicaea, slew one of them, although he was unarmed. The passage is in Ogyges (iv. 29).

And one more, from the Metropolitan Museum of Fine Arts, p. 30.
which some have considered as indicating the existence of Lions in Persia up to the banks of the Danube, fails as an authority for placing the Lion in that locality, because, as Cuvier observes, the context shows plainly that the name of Ister is there applied to an Armenian river, either by an error of the transcriber or a characteristic generic error cast; "Lionum tantum in Syria niger." *Alasian* (xxvi. 26) distinguishes the Lions which come from India other than Lions, stating that the skin of the Indian Lion is black. Oppian (iii.) towards the beginning of that book, notices the different parts of Africa, Arabia ("Africus" dicaeus), Libya, and Ethiopia.

These distinctions are altogether rejected by Buffon, who denies that there are different kinds of Lions. He denies, in fact, that the Lion has a curled mane, which, by Aristotle does not assert, for he only says that one kind has the mane more curly than the other. Buffon further affirms, that the Lions of Africa and Asia entirely resemble each other; and declares that if the Lions of the mountains differ from those of the plains, the difference is less in the colour of the skin than in the size of the respective animals.

Linnaeus, in his last edition of the "Syst. Nat.", notices no varieties: he places Felis Leo at the head of his genus Felis, with Africa only as the habitat. Neither does Gmelin distinguish any varieties, but he much increases the distribution; for he speaks of the Lion as inhabiting Africa, especially in the interior, as being rarer in the deserts of Persia, India, and Japan, and as having formerly occurred in other warmer parts of Asia, in Palestine, in Armenia, and in Turkey.

Pennant ('Hist. Quadr.', 3rd edition) appears to coincide in opinion with Buffon, Linnaeus, and Gmelin; for he mentions no distinctions, and describes the Lion as "an inhabitant of most parts of Africa, and rarely of the hot parts of Asia, such as India and Persia; and a few are still met with in the deserts between Bagdad and Bassorah, on the banks of the Euphrates. Mr. Niebuhr also places them among the animals of Arabia; but their proper country is Africa, and the largest is the African, and the range is greatest, and their rage more tremendous, being influenced by the influence of a burning sun upon a mottled soil.

Doctor Fryer says that those of India are feeble and cowardly. In the interior parts, amidst the scorched and desolate deserts of Zara, or the desolate solitudes, they lord it over every beast, and their courage never meets with a check, where the climate keeps mankind at a distance; the nearer they approach the inhabitants of the human race, the less their rage and the greater is their timidity; they have often experienced the effect of combat, and finding that there exists a being superior to them, commit their ravages with more caution; a cooler climate again has the same effect; but in the burning parts of India, where the sun is most powerful, and they live in a perpetual fever, a sort of madness fatal to every animal they meet with." Dr. Leach raised the form to the rank of a genus under the name of Leo.

LIONS OF THE OLD WORLD.

Zoologists generally distinguish the Lion by its uniform yellow colour, the tuft of hair at the end of the tail, and the mane covering the head and shoulders of the male. This last ornament, as we shall presently see, is very much reduced in one variety, with which we have lately been uncommon in England and France. Captain Cook has observed so many is that it hardly deserves the name of a mane at all.

If we go back to an early period, we shall find varieties of this great cat, usually considered as the strongest of the feline race, far greater in the majority of the species for the most part, mentioned by ancient writers on natural history. Thus Aristotle (xxiv. 44) distinguishes two kinds of Lions, one rounder than the other (στρεγγυλήτις), and which has the mane more curled (ολωδέρντις), which he states to be the most timid (βυθαντιοτέρος); the other longer and with a well-developed mane (ολωδέρντις), which he says is more courageous (αμερέρντις).

Pliny (vii. 16) remarks that the Lion is most noble when a male covers his neck and shoulders; and he also (loc. cit.) alludes to a maneless Lion, the offspring of a monstrous conjunction. ("Lexicon antiquum," tunc cum colla armoque vestimenta. Id enim estate contingit a leone concepta. Quos vero pardi generecave, insigni hoc carat.") In Africa, he goes on to state, he is more frequent; "Multiformes, ignibus animatuum partus, varie feminae, mares aut, ut vulgatae, sancta, aut voluptate miscit." whence, he adds, the Greek vulgar saying, that Africa is always producing something new. In the same chapter Pliny, after alluding to the European Lion, undernotes, "but above building repeats the observation of Aristotle, that there are two

* Stills gave a combat of one hundred Lions at once in his establishment; but this bloody exhibition is insignificant when compared with those of Pompey and Caesar in their triumphs. He performed a feat that was never repeated in four hundred. In Pompey's show, three hundred and five of the six hundred were preserved entire; whereas numbers consumed great numbers, frequently a hundred at a time, to gratify the people.
servations will prove these animals to be in reality distinct species, and notice them separately under the names of Leo Africana and Leo Asiaticus; he also alludes to the Maneless Lion, a notice of which had just appeared in the Proceedings of the Zoological Society of London, with a promise of further details in the Transactions of that Society, in a paper on the giraffes and the vultures and ostriches, to which we shall presently call the reader's attention.

Mr. Swainson (Classification of Quadrupeds, 1835) places the African Lion (Leo Africana, Sw.) at the head of the Felidae. In his arrangements of the animal kingdom he places the designation of 'Leo Antiquorum, Lions.' Head and neck furnished with a mane of long hair; tail tufted. The next genus, 'Felis, L. Cats,' he characterizes thus: 'No mane; tail long, not tufted.' In his 'Domestic Animals at Menageries,' 1836, the Lion does not appear to be noticed.

African Lions. Temminck notices two varieties of the African Lion—that of Barbary and that of Senegal. M. Lesson adopts these two varieties, and adds the Lion of the Cape, of which he gives two varieties. The Lion of Barbary. This Lion is described as having a deep yellowish-brown fur, and the mane of the male is stated to be very much developed. The Lion of Senegal is characterized by a fur of a more yellowish color, the mane being less thick, and nearly wanting upon the breast and inside of the legs. The Lion of the Cape presents two varieties, one yellowish and the other brown, the latter is regarded as the most ferocious and maddening. One of these is the 'Black-kinds,' and it seems indeed that there is a 'black-maned' Lion, one of which, accompanied by his Lioness, Mr. Burchell appears to have encountered in his travels in Africa. (See post.)

* * *

J. Miller well observes, that 'King of the Forest' is a title not very applicable to an animal which he, at least, never met but on the plains; nor do we ever meet with one in any of the forests where he had been. The low cover that creeps along the sides of streams bereft the life of the larger beasts, and gave to the grass of the valley, seem to be the shelter which the African Lion for the most part seeks. Of the strength of this variety we have most extraordinary examples on record. To carry off a man,—and there are dismal accounts of this horrible fact, which there is no reason to doubt,—appears to be a feat of no difficulty to this powerful brute. Indeed when we find that a Cape Lion seized a heifer in his mouth, and, though the legs dragged upon the ground, seemed to carry her off with the greatest ease—indeed, we cannot disguise our horror. We have overheard a man say that the Lion preferred a human prey; but be this as it may, the inhabitants of certain districts have, it appears, been under the necessity of resorting to a curious expedient to get out of their reach. Messrs. Schoon and M'Luckie, in 1821, penetrated the land of Khurrichiane, situated between 16 and 30 miles to the north-east of Litskow. They discovered, east of Khurrichiane, or Chuan, as it is more properly named, the river Moriqua, which rises in the south between the 25th and 36th degrees of latitude, and 29th and 30th degrees of longitude, taking a north-easterly course, and about 100 miles from the ford enters a high ridge of mountains. From hence, according to the natives, it flows into the sea, through the country of the Mantabees. About 70 miles to the eastward, the range of mountains and rivers direct the course of the river south, along the base of the mountains, is a place called 'Ongorutic-Fountain,' where there is a large tree containing seventeen conical holes. These are used as dormitories, being beyond the reach of the various beasts that range in these mountains, when so many thousands of persons were massacred, have become very numerous in the neighborhood and destructive to human life.* The branches of these trees are supported by forked sticks or poles, and there are three tiers or platforms on which the huts are constructed. The lowest is nine feet from the ground, and holds ten huts; the second, about eight feet high, has three huts; and the upper story, if it may be so called, contains four. The ascent to these is made by notches cut in the trees. The huts are all roofed with grass, which is covered with straw, and will contain two persons conveniently. The travellers had previously visited several deserted villages similarly built between the Moriqua and Leutitcan rivers, as well as three near the Atlas. But the ball erected about eight feet above the ground and about a foot square, larger in some places, and containing about seventy or eighty huts. The inhabitants, it is stated, under the shade of these platforms during the day, and retire to the clumps at night.

The general prey of the African Lion consists of the larger herbivorous quadrupeds, very few of which it is unable to master, and it is a severe scourge to the farmer, who is consequently ever on the look-out for lions, and generally gives warning. The sentiments of the inhabitants frequently happen in these huntsings, the cool sportsman seldom fails of using his rifle with effect. Lions when roused, it seems, walk off quietly at first, and if no cover is near, and they are not pursued, they gradually mend their pace, as if they were not at all alarmed; and, when they fancy themselves safe, and closely, they turn and cover, generally with their faces to the adversary; then the nerves of the sportsman are tried. If he is collected and master of his craft, the well directed rifle ends the scene at once; but, if in the flutter of the moment, he misses, the lion turns and, with a snarl and an assumed look of courage, dashes at him, leaving the lion unhurt, the infuriated beast frequently charges on his enemies, dealing destruction around him. This however is not always the case, and a steady unshrinkling deportment has, in more instances than one, saved the life of the hunter. Mr. Burchell gives an interesting account in his African travels of his confronting one of these animals. 'The day was exceedingly pleasant, and there was not a cloud to be seen. For a mile or two, we travelled along the banks of the river, which, in this part, abounded in tall rushes. The dogs seemed to enjoy prowling about, and examining every bushy place, and at last met with some object among the rushes which caused them to set up a most vehement and determined howl at the spot where it was standing. We paid no attention; the dogs proceeded, from the peculiar tone of their bark, that it was what we suspected it to be,—lions. Having encouraged the dogs to drive them out, a task which they performed with great willingness, we had a full view of an enormous lioness and her cubs. The lioness stood at bay for a minute, as she made her escape up the river, under the concealment of the rushes; but the lion came steadily forward and stood still to look at us. At this moment we felt our situation not free from danger, as the dogs recommenced preparing to spring upon us, and we, who were standing on the bank, at the distance of only a few yards from him, most of us being on foot and unarmed, without any viable possibility of escaping. I had given up my horse to the hunters, and was on foot myself; but there was no time for riper, and it was useless to attempt avoiding him. . . . I stood well upon my guard, holding my pistols in my hand, with my finger upon the trigger; and those who had muskets kept themselves prepared in the same manner. But at this instant the lion darted forward and flew in between us and the lion, and surrounding him, kept him at bay by their violent and resolute barking. The courage of those faithful animals was most admirable: they advanced up to the side with the utmost boldness and the hugest bellowing of all the pack together. The lion, floundering about in his face, without the least appearance of fear. The lion, conscious of his strength, remained unmoved at their noisy attempts, and kept his head turned towards us. At one moment, the dogs perceiving his eye thus engaged, had supposed he would fall asleep, and seemed actually seize hold of him; but they paid dearly for their imprudence, for, without discomposing the majestic and steady attitude in which he stood fixed, he merely moved his paw, . . .

* See South African Journal, September, 1850; and Steedman's 'Wanderings and Adventures in the Interior of Southern Africa,' where the reader will find a drawing of the inhabited tree above described, taken by Mr. Moffat of Litakow, who also visited this spot.
and, at the next instant, I beheld two lying dead. In doing
this he made so little exertion, that it was scarcely percep-
tible by what means they had been killed. Of the time
which we gained by the interference of the dogs, not a
moment was lost; we fired upon him; one of the balls went
through his side, just between the short ribs, and the blood
began to flow, but the animal still remained standing in
the same position. We had now no doubt; he would
spring upon us: every gun was instantly reloaded; but
happily we were mistaken, and were not sorry to see him
move quietly away, though I had hoped in a few minutes to
have been enabled to take hold of his paw without danger.
Even where the hunter has been seized with a panic and
pursued, a timely recovery of self-possession has saved him.
Sparman relates that Jacob Kok of Zee-koe-rivier, one day
walking over his lands with his loaded gun, unexpectedly
met a lion. Being an excellent shot, he thought himself
pretty certain, from the position in which he was, of killing
it, and therefore fired his piece. Unfortunately he did not
recollect that the charge had been in it for some time, and
consequently was damp; so that his piece hung fire, and
the ball falling short, entered the ground close to the lion.
In consequence of this he was seized with a panic and took
directly to his heels; but being soon out of breath and
closely pursued by the lion, he jumped up on a little heap
of stones, and there made a stand, presenting the butt end
of his gun to his adversary, fully resolved to defend his life
as well as he could to the utmost. This deportment had
such an effect on his pursuer, that he also made a stand
and lay down at the distance of a few paces from the heap
of stones, seemingly quite unconcerned. Jacob, in the
mean time, did not stir from the spot; besides he had in
his flight unfortunately dropped his powder horn. At
length, after waiting a good half-hour, the lion rose up, and
at first went very slowly, and step by step only, as if he had
a mind to steal off; but as soon as he got to a greater dis-
tance, he began to bound away at a great rate. There is
hardly a book of African travels which does not teem with
the dangers and hair-breath escapes of the lion-hunters,
and hardly one that does not include a fatal issue to some
engaged in this hazardous sport; but our limits will not
allow us to enter into further details on this part of the
subject, and we must refer to such works for accounts—and
they are very interesting—of the different modes of destruc-
tion employed against this powerful beast, from the poisoned
arrow of the Bushman to the rifle of the colonist.

**Lion (Mane not quite fully developed) from Eastern Asia, with Lions.**

**The Persian or Arabian Lion.**—This is stated to be dis-
tinguishable by the pale Isabella colour of the fur, and those
which have been exhibited in England as Persian Lions
certainly bear out this remark; but Captain Smee, to whose
interesting paper we shall presently have to call attention,
observes that the Persian Lion exhibited at the Surrey
Zoological Gardens seemed to him to differ but little from
individuals known to be brought from Africa. (See the
next section.)

**Persian Lion.**

**The Maneless Lion of Guzerat.**—The reader will bear in
mind the passage above quoted from Pliny (viii. 16), touch-
ing Lions which have no mane, and of the origin attributed
to them. Cuvier notices the statement; that maneless Lions
had been found on the confines of Arabia, and merely refer-
s to Olivier, observing that there is no detailed description
given of them. A zoological description is doubtless not
to be found in Olivier; but he enters somewhat minutely
into the subject, as the reader will here see. 'The Lion;
says Olivier (Voyage dans l'Empire Othoman, l'Egypte, et la Perse, tom. iv.), "which inhabits the part of Arabia and Persia near the river of the Arabs, from the Persian Gulf to the environs of Helles and of Baghdad, is probably the species of Lion of which Aristotle and Pliny have spoken, and which they regarded as a different species from that which is spread over the interior of Africa. The Lion of Arabia has neither the courage, nor the stature, nor even the beauty of the species of Africa. In the former it is remarkable rather than force: he crouches among the reeds which border the Tigris and Euphrates, and springs upon all the feeble animals which come there to quench their thirst, but he dares not to attack the baur which is very common there; and, above all, he never preys on man, woman, or even a child. If he catches a sheep, he makes off with his prey; but he abandons it to save himself, when an Arab runs after him. If he is hunted by horsemen, which often happens, he does not defend himself, unless he is wounded, and has no hope of safety by flight. In such a case he will fly on a man and tear him to pieces with his claws; for it is courage more than strength that he wants."

Jim, pacha of Bagdad from 1724 to 1747, would have been born by one, after breaking his lance, in a hunt, if his slave Suleiman, who succeeded him in the pachalik, had not come promptly to his succour, and pierced with a blow of his yataghan the lion already wounded by his master."

"We saw," continues Olivier, "five individuals of this rare species in a vast number, exclusive of the lions that have been there five years and had been taken young in the environs of Bassora: there were three males and two females; the former were a little larger than the latter; and all much resembled the African species, excepting that the parts of the body were more numerous, and that they never had any, and that no lion of these countries had one. We have often regretted that we did not ask the pacha for two of them, in order to make a close comparison with the African species, and to satisfy ourselves whether the lions of Africa and of Bassora were, as the species distinct from the others, or as a degenerate race."

In Griffith's Cuvier's 'Règne Animal' there is a notice that a man-eating and brownish coloured species of Felis, larger than a Lion, had been expected to be forwarded from North Africa, and that the description of this species, as it has been seen in the environs of Bassora, had been published in the Transactions of the Zoological Society of London, by Dr. A. R. C. Jardine, and had been seen in the catalogue of the British Museum. But I have not been able to obtain a copy of this description, and have not been able to find it in the British Museum."

In December 1833, Captain Walter Smeee exhibited to a meeting of the Zoological Society of London the skins of a Lion and a Lioness killed by him in Guzerat, and selected from eleven obtained by him, eight of which he had brought back, and two of which he had sent home, all of which were distinguished from those previously known by the absence of the mane (that is, it is maneless as compared with other Lions), from the sides of the neck and shoulders, the middle line of the neck being smooth, and, related to Felis jubata, which is the less hairy, and more nearly the same in the situation in the Chelid (Felis jubata). The under surface of the neck has long loose silky hairs, and there is a tuft at the angle of the exterior legs. Besides the absence of the mane, the tail is shorter than with Brown. Above each eye is furnished at its tip with a much larger brush or tuft. In the tuft there existed in the oldest of Captain Smeee's Lions, subsequently to the arrival of the skin in England, a short hairy claw or nail, similar in form to, but somewhat larger in size than, that described by Mr. Woods, and above added to.

Captain Smeee, who, in the Transactions of the Zoological Society, enters into a very minute description of the arrangement of the hair in this variety, both in the male and the female, and in the other species. Captain Smeee describes the hair or mane as subject to considerable variations in intensity of colouring. In both the colour is fulvous; but in some individuals, he says, this is much paler than in others, and in the darker specimens there occurs a tinge of red. The middle of the back and the head are covered with short hairs, the sides of the face is much paler and almost white. Among the hairs there is an intermixture of some which are entirely black, and the greater or less proportion which these bear to the paler ones is the principal cause of the variation in degree of colour that occur in different individuals. Of the Guzerat Lions the oldest individual is the lightest in colour. The tail becomes gradually paler towards its extremity, passing into greyish white; its terminal brush consisting of long hairs slightly curling with brown. Above each eye is a tuft, which is included a darker coloured spot for the implantation of the supraorbital vibrissæ, from twelve to fifteen in number, and of which the longest reaches nearly to the ears. In the African Lion these vibrissæ are implanted in a darker spot, but this spot is less defined, and is only partly surrounded by a paler space. In both, the points of insertion of the moustachæ are darker than the surrounding parts. Captain Smeee does not speak with certainty of the comparative form of these two varieties: but he states his impression to be that the Lion of Guzerat is a lighter in colour, and the mane much longer and rather shorter in its limbs; and that its head especially is shorter, has less of the square form which distinguishes the open face of the male African Lion, and is more rounded on the forehead. But, as he observes, this difference may be produced by the age of the animal which is, of course, in the one, while that feature is defined and visible in the other. The cranium of the Lion of Guzerat generally resembles that of the African race. Mr. Owen had remarked that the infra-orbital foramina were double in the only fatal known to be Asiatic examined by him, in both which killed in North Guzerat, this occurs on both sides; in the other, killed near Assund, it is found on one side only. Captain Smeee states that in a young skull of the Manelless Lion there exists on one side a double infra-orbital, foramen, and that the existence of this same character in the same skull contained in one of the skins had been ascertained. A male maneless Lion killed by Captain Smeee, measured, including the tail, 8 feet 94 inches in length, and his total length, with the tail, was 9 feet 11 inches. Four of his teeth (one of the upper jaw, splintered, and one of the lower jaw): the impression of his paw on the sand measured 96 inches across, and his height was 3 feet 6 inches. A female killed at the same time was 8 feet 7 inches long and 3 feet 4 inches high.

Ecology and Habits of the Guzerat Lion. - These maneless Lions are, according to the author last above quoted, found in Guzerat along the banks of the Sombermutte near Ahmadabad. During the hot months they inhabit the low bushy wooded plains that skirt the Ghadar and Sombermutte rivers, and from the moist marshes of which they do not being driven out of the large adjoining tracts of grassy jungle (called Bheers) by the practice annually resorted to by the natives of setting fire to the grass, in order to clear it and ensure a succession of young shoots for the food of the animal. For they are very much afraid of the fire, and run away from it, and bury themselves in the sand on the banks of the rivers, and thus escape being killed. It is a great range of country about 45 miles in length, including various villages, and among others those of Booro and Guliana, near which Captain Smeee killed his finest specimens. They were so common in this district that he killed them by the score, and the natives said that they were as numerous as the Tiger; yet scarcely any of the natives, except the cattle-keepers, had seen them previously to his coming among them. The cattle were frequently carried off, or destroyed, but this they were not afraid to do, for they told the natives that the Tiger does not exist in that part of the country. Those natives to whom the Lions were known gave them the name of Onitah Buung, or Camel Tiger, an appellation derived from their resemblance in colour to the Camel. They applied for the same reason to the Leopards, and in the remains of a considerable number of carcasses of bullocks were found near the place where Captain Smeee's specimens were killed; about ten days previously, four donkeys bad been destroyed at the village of Cashwah. Captain Smeee could not learn that men had been attacked by them. When struck by a ball, they exhibited great boldness, standing as if preparing to resist their pursuers, and then going off slowly and in a very sullen manner; unlike the Tiger, which on such occasions retreats springing and roaring. Captain Smeee has described another species of the same genus, which is found on the Rhun near Ranchor, and near Puttun in Guzerat, and that some persons who saw them in Bombay said that they also occur in Sind and in Persia; he further observes, that should subsequent inquiries prove that Olivier was right in his statement of the existence of these Maneless Lions, seen by him at Bagdad were obtained, and prove also their identity with those of Guzerat, a more extensive geographical range will be established for this curious race than Captain Smeee is at present disposed to regard as probable. Captain Smeee remarks that he is aware that the existence of these maneless Lions in Guzerat had been previously although by no means generally known, and quotes Liut, Co., having this knowledge. Mr. Charles Malus has also seen Lions on the banks of the Sombermutte, and though he makes no mention of the absence of the mane,
Captain Smeec thinks that they in all probability belonged to this nameless race, and indeed Sir Charles attributes to his Lion the native name noticed by Captain Smeec above. Our author makes the following remarks on the passages thus found in the narratives bearing on this subject. Having alluded in the commencement of this communication to the opinion that a manless Lion was known to the ancients, it might be expected that I should here bring forward and discuss the several passages which have been looked upon as supporting this view. Whence however the critics are at fault, it would be presumptuous in me to attempt to decide. I own that I do not find in the passages usually referred to any evidence at all satisfactory as regards the existence of Lions destitute of mane; and I am even far from willing to admit that the crimped hair noticed by Aristotle as distinguishing one race of Lions from another, in which the hairs were either dense or straight, must of necessity be considered as those of the mane rather than of any other part of the body. The language of Oppian is equally obscure, and even the expressions used by him are warmly contested by the critics. Another Greek writer, Agatharchides, the peripatetic, speaks of the Arabian, and especially the Babylonish Lions, in terms that recall Olivier’s description of those of Bagdad, but still with no de finite application to the want of a mane. Pliny alone, so far as I am aware, mentions the absence of mane as a distinctive mark of one race of Lions; but to this race he attributes a monstrous generation, and he was probably altogether misled with respect to it.

Captain Smeec thus characterizes his Manless Lion:—
Felis Leo, Linn., var. Georgiaeana.—Mane of the male short, erect: tuft at the apex of the tail very large, black. (See Zool. Proc., 1833; and also Zool. Trans., vol. 4, where an excellent figure is given.)

Habitats of the Asiatic varieties generally, Chace, &c.—The habitats of the Asiatic Lions do not differ much from those of Africa, excepting that the former, from the state of the country, frequent the jungles bearing on this subject; the elephant is generally employed in the chase, which is even now conducted with more pomp and circumstance than in Africa. The grand Asiatic huntings of former times, those of Genzian’s Khan for instance, will occur to many of our readers. The accounts of many Asiatic moderns, who give it much more generous bearing to the Lions in these encounters. One of these states that the Lions in India, instead of running away when pursued through a jungle, sink to take office as a refuge at all. On the approach of their masters, they spring out to meet them open-mouthed in the plain. They are thus easily shot; but if they are missed or only slightly wounded, they are most formidable adversaries. They are even said to have sprung on the heads of the largest elephants, and to have fairly pulled them to the ground, riders and all.

Reproduction of the Lion, &c.—The Lioness is said to go with young five months, and produces generally from two to four, at a litter, which are born blind. Three, two males and a female, were whelped in the Tower of London in 1848, in the month of the battle of Navarino; but the number seems generally to be two. In captivity the Lioness usually becomes as savage as soon as she becomes a mother; and in a state of nature both parents guard their young with the greatest jealousy. Mr. Bennett gives a description of these animals in the above alluded to work by the Rev. Mr. Watson, then on service in Bengal, being out one morning on horseback armed with a double-barrelled rifle, was suddenly surprised by a large male Lion, which bounded out upon him from the thick jungle at the distance of only a few yards; he instantly fired, and the shot took its effect, the animal fell dead almost at his feet. Sooner no had the Lion fallen than the Lioness rushed out, which the General also shot at, and wounded severely, so that she re tired into the thickest. Thinking that the den could not be far distant, he traced her to her retreat, which was a patchy, and in the den were found two beautiful cubs, a male and a female, apparently not more than three days old. These the General brought away; they were suckled by a goat, and sent to England, where they arrived in September, 1848. Mr. Bennett says the cubs were brought up in the Tower. The male was the animal from which Mr. Bennett gives his figure and description of the Bengal Lion, and the female was the mother of the cubs whelped in the Tower, above alluded to. (Tower Menagerie.) The young are at of age at five months, although they are full-bodied, orbital and latterly, even the hair of their tails is hardly visible. They are generally so well fed that they are never very much longer. Pompey, the great Lion which died in 1766, was said to have been in the Tower above seventy years; and one from the river Gambia is stated to have died there at the age of sixty-three.

The power and supposed generosity of disposition, has been more popularly hailed as the king of beasts, and considered as the emblem of majesty and might. It is the symbol of the British nation, and is borne in the royal arms, from which it forms one of the supporters, and which it assumes on great occasions. The generosity of disposition so liberally accorded to this powerful beast has been much and eloquently praised. It seems almost sacrilegious to dissipate the glowing visions which Buffon has raised; but if there is any dependence to be placed upon the observations of moderns, then it would appear that the Lion has not had the best opportunities of judging, and have the highest character for veracity, we must be compelled to acknowledge that Buffon’s lion is the lion of poetry and prejudice. He was very unlike the cautious lurking savage that steals on its comparatively weak prey by surprise, overwhells at
at once by the terror, the weight, and the violence of the
attack, and is intent only on the gratification of its
appetites. 'At the time,' says Mr. Burchell, 'when men first
adopted the lion as the emblem of courage, it would seem that
they regarded great size and strength as indicating it; but they
were greatly mistaken in the character they had given to
this indolent animal.' The fact of the lion sparing the dog
that was thrown to him, and making a friend of the little
animal that was destined for his prey, has been much dwelt
on, but these and other such acts of mercy, as they have
been called, may be very easily accounted for. If not
pressed by hunger, the lion will seldom be at the trouble of
killing prey; and the desire for a companion has created
much stronger friendships between animals in confinement
than between a lion and a dog.

The lion is easily tamed, and capable of attachment to
men. The story of Androclus, frequently called Androcles,
is too well known to need more than allusion, and we learn
from Bell's 'Travels' that the monarch of Persia had on
days of audience two great lions chained on each side of the
passage to the state-room, led there by keepers in golden
chains. Every wild-beast show almost has its tame lion,
with which the keeper takes the greatest liberties; liberties
which the beast will suffer, generally speaking, from none but
him. All these exhibitions have however been entirely exposed
by the feats of Mr. Van Amburgh, who exercises a complete
control over the lions and other great Felisidae which he
has subjected to his will.

HYBRIDS.

The lion and tigress would, under certain circumstances,
produce young. This has happened twice in England. Sir
William Jardine gives the figure of one of a litter so bred,
and exhibited in Atkins's collection, where they were whelped,
in 1827: they died young. Sir William Jardine correctly describes the
head of these hybrid cubs as brighter than that of the lion,
and the bands as better marked than they generally are in
the true-bred young lion. The specimen figured by Sir
William is in the Edinburgh museum. Another litter from
similar parents was whelped at Windsor; but these also
died before they came to maturity. There does not seem to
be much difficulty in promoting this union.

PUMA, OR AMERICAN LION.

The uniformity of colour in this great cat, combined with
considerable ferocity, were probably the reasons which in-
duced early travellers in America, who heard of it perhaps
with circumstances of exaggeration, or caught hasty
 glimpses of it not unaccompanied with terror, to state that
there were Lions in America. Thus, John de Laet (1633)
says, that Lions are found in Peru, though they be few,
and not so ferocious as they are in Africa, and that they
are called in the native tongue Puma. In an old tract (1649),
entitled 'A Perfect Description of Virginia,' we find among
the 'Beasts great and small,' 'Lyons, Beares, Leopards, Elks,'
and 'Garcellos.' We have of the Puma, or Lion of Peru.
In Hernandez (1651) there is a long account of the animal under the name of 'Puma, seu Leo Americanus'; and reasons are given to show that it is not a
true lion. In Piso the animal is noticed as the Cuguar,
and by Magergrave as the Cuguarana of the Brasil-
ians; hence the French name Cougar. Charlevoix de-
scribes it closely enough under the name of Caracajou, or
Cougara; this name is thought by some authorities to be
from the true lion, which it closely resembles in all the
characteristics of the species. In D'Azara's 'Gouzouara of Paraguay
trace is made of the French name of this animal. The
names Puma and Cougars both describe it by the name of the Pan-
American, which designation is known to the Anglo-Amer-
ican races to be the Micros of Fernandes in the catalogue at the end of the

The name Cuguarana of the Brazilians is the same as the
Cougara of the French. The name Cougars is the same as the
Panther, and the name Micros is the same as the Micros of
the catalogue at the end of the

The names Cuguarana, Cougara, and Cougara are the same as the
Cougara of the Brazilian

The Panther is the cat's kind; about the head is a large, round,
red-haired, of a reddish colour, the same as a Lion. He
bears trees with the greatest agility imaginable, is very strong
limb, catching a piece of meat from any creature he
strikes at. His tail is exceeding long, his eyes look very
sharply, and are of a greyish colour; his

F 2
animal has had to deal with one hunter only the conse-
quences have been sometimes fatal to the latter.
Cuvier remarks, that all it would appear that this animal
extends, or did extend, from California to Patagonia,
but has been careful in his researches to discover whether there
were not many species, or at least varieties, in this great
extent of country; the conclusion at which he arrived was,
that one species only existed.
The report must bear in mind that there is another cat
of a uniform colour, Felis unicolor, Traill, which is said
to inhabit the forests of Demerara and is one half less
than the Puma. The Black Cougar, Felis discolor, is
allowed by some zoologists and rejected by others.

Sir William Jardine describes as the Black Puma an
animal about 39 inches long, without the tail, which is
about 13, and of which he gives a figure taken
from a specimen brought in a merchant vessel to Greenock.
He gives as synonyms El Negro de Abarra and The Black
Cat of America (Griffith's Synopsis), both with a note
of interrogation. Sir William adopts Puma as a genus,
and gives the following species:—P. concolor; P. nigra; P. egua;
P. pujeros; and P. pujeros chalybata.

Remains of the Felis Species of Goliath, Hisheldura or
Lion of the caves, have been found in the caverns of
Franconia, &c. For an account of the four great fossil cats,
some as large as the Lion, enumerated by Professor Kaup
from the Eppelsheim sand, see Felidæ, vol. x., p. 224, and for
a detailed list of fossil cats see that article and Tigræ.

LIP. [Harp. Lab.]

LIPARI ISLANDS, the ancient Aeolian Insulæ, or
Liparian Islands, are a group of small islands, situated
between Calabria and the northern coast of Sicily, and
between 36° 26′ and 38° 50′ N. lat. and 14° 10′ and 15° 13′ E.
long. They are mentioned by the ancient geographers as
seven in number. Strongyle (now Stromboli), so called
from its round form; Lipara, now Lipat; Hieria, or Vul-
cana, now Vulcan; Didyme, now Saline; Phoenicades,
now Feonide; and Lusciana, now Lisciana, on which
some think is the present uninhabited rock called
Liscianà, whereas others suppose it to be the inhabited
island of Panarea. There are several other smaller islands,
or rather rocks, such as Lascana, Basiluzza, &c.,
which belong to the same group and are inhabited and barren.
The principal islands are ranged as follows:—1, Stromboli,
the most northern and the nearest to Calabria, is about
40 miles west of the Gulf of Sant’ Eufemia; it consists
of a conical mountain nearly 3000 feet high, which is a
constantly burning volcano. It rises abruptly from the sea on all sides, except on the
north-east, where the declivity of the mountain is more
gradual, and allows of a cultivated space between it and the
sea, which produces cotton and some wine, and is inhabited
by about 3600 people. The island is about 12 miles in
circuit. The flames of the crater are a constant light to the

\* Dr. Richardson observes that Charlevoix applies the appellation of Caracou
or Caracou; and does not seem to be aware of the Want of the Superintendent,
which mistake, the Doctor adds, has produced some confusion among some of
artists. — Trott’s remarks on the provinces given in the text, are not necessarily
true, as may be seen in the notes of the Rev. Mr. Thomas’s Puma Caracou. See the articles
Gorilla, Lyons.

1 Perrot and Gauthier is often called the Tigre. See also Hernández, where it
named Tigre Amerindian.
saline in that sea. 2. Panarea, about 10 miles south-west of Stromboli, is an extinct volcano, the crater of which slopes on one side to the sea-shore; the bottom or funnel of it is cultivated by a few individuals who are also fishermen. 3. Lipari, about five miles south-west of Panarea, the largest and most important island in the group, is a bishop's see, and the residence of a military governor; it is above 20 miles in circumference, and contains about 12,500 inhabitants. It has several mountains with volcanic craters now extinct, though they emitted flames in the time of Strabo: it also contains several springs, of which nearly every one has its public baths of lime, lava, obsidian, and other volcanic products. The land, which is very fertile, produces cotton, olives, and grapes, from which a luscious sweet muscat wine is made, called *Malvasia di Lipari,* which, as well as dried raisins, forms the chief revenue from the island.

The town of Lipari, which has a harbour, is on the eastern coast of the island; it contains a castle, several churches, and some remains of antiquity. Lipari is said to have been colonized by Greeks from Chios; it was afterwards occupied by the Carthaginians, and became an important station for their fleets during their occupation of Sicily. During the first Punic war it came into possession of the Romans. It was ravaged by Khaer Eddin Barbarossa in the year 1144, when the population was thirty thousand, and some of the inhabitants were murdered. 5. Four miles north-west of Lipari is the island of Salina, 16 miles in circumference, with several villages, and about 4000 inhabitants. It consists of two mountains separated by a deep valley which runs from north to south, and on both sides of which are several small mountains. In the south it is the only part of the island which has the appearance of being divided into two islands, which is the origin of its name Diddyme, or double. The valley is extremely fertile in wine, fruit, pulse, &c. 6. Ten miles west of Salina, near the town of Lipari, is a small island, with a few hundred inhabitants; it produces corn, fruits, and wine.

7. About eight miles west of Feliceu is the small island Aegidi, the most western of the Lipari group; it is hilly and not very productive, has some pastures of black cattle, and is inhabited by about 400 inhabitants.

The Islands of Lipari form part of the Intendencia, or administrative province, of Messina.

**Lippe River.** [River.] 8. The Lippe River probably derived its name from the river Lippe, on which the town of Lippe was built in the twelfth century. The ancestors of the family now reigning were reckoned in the twelfth and thirteenth centuries among the *Principes Lippe,* and were the hereditary possessors of extensive counties. Bernhard von der Lippe obtained in 1127 the town of Lermo from the emperor Lotharius; he and his brother Hermann are mentioned for the first time with the title von der Lippe in a document of the year 1127, by Abbot II., his son, a friend of Henry the Lion, appeared with a numerous retinue of well armed knights at the diet held at Mainz by the emperor Frederic I. In 1184 Bernhard III., obtained the lordship of Rheda by marriage in 1230. His grandson Stephanus, who succeeded the last, was elected bishop of Paderborn and established in 1368 the *Pactum Paderborn,* by which the eldest son only was to reign. Bernhard VIII., who died in 1363, was the first who took the title of Count von der Lippe. His son Simon VI. is the immediate forefather of the Lippe family. Among his three sons, of whom Simon VII. founded the line of Lippe-Detmold, Otto (Otto) that of Brake, and Philip that of Bückeburg, or Schaumburg. The line of Brake becoming extinct in 1769, on the death of Louis Ferdinand, Count of Lippe-Detmold, took possession of the county, without regarding the rights of Bückeburg, but the imperial aulic council, by judgments passed in 1734 and 1737, assigned half of the county to Schaumburg Lippe, and the two cases concluded a convention in 1747.

**Lippe Detmold:** consisting of the counties of Lippe and Sternberg, and part of that of Schauenburg, forms a compact territory situated between 51° 45' and 52° 10' N. lat., and 9° 34' and 9° 20' E. long. It is bounded on the north-east by Schaumburg (more properly Schauenburg), belonging to Hanover; on the east by Caledon (Hanover) and the county of Pyrmont; and on the north by the south-east, south, and west by the Prussian province of Westphalia. The small bailiwick of Lipperode, with the town of Lippspringe, obtained by the marriage of the Emperor of Westphalia, crosses the circle of Paderborn under the name of the Ems, and enters Lippe Detmold at Horn, whence it extends into the county of Rhenish Westphalia. The Lippe; here called the Lippe-Wald (the forest of Lippe), runs in the country three chains running parallel to the other from south-east to north-west, of which the first bounds the tract called the Senner Heath; the central one, which is the highest, contains the celebrated Exterateine, which are the principal restorative possession of the country; it is supposed that the ancient German priests performed their ceremonies by moonlight; and the third is turned towards the valley of the Werra. The Lippe divides the valleys of the Rhine and the Weser, the streams on the right running into the Weser, those on the left into the Lippe-Wald, part of the river, into the former river. The Weser, the only navigable river, just touches the northern frontier of the principality for a short distance, and receives the Ems, the Exter, the Emmer, the Sorga, and other small streams. The Ems rises at the source of the Stapelager, a branch of the Ems, crosses at the point of the Stapelager, a branch of the Senner, and soon enters the province of Westphalia. The Lippe merely touches the bailiwick of Lipperode and the town of Lippspringe. Vast forests of oak, beech, and other species grow in some parts of the mountains, while on the slopes there is the finest arable land. The climate is temperate but not pleasant; the atmosphere is frequently loaded with fogs and vapours; the winter is cold and wet; the summer, especially in the valley, very hot. The natural productions are corn, flax, hemp, potatoes, rapeseed, garden vegetables, and timber.

The inhabitants have the common domestic animals, small four-footed game, poultry, feathered game, fish, and bees. The mineral products are plaster of Paris, lime, clay, salt, quicksand, chalk, and lead. The annual production of salt is 36,000 bushels of salt are annually obtained. The staple productions are flax and timber, of which large quantities are exported. The breed of horned cattle is good, and sufficient for home wants; but the county has much increased and improved of late years. Swine and goats are numerous. The horses bred on the Senner Heath are hardy and spirited, and are esteemed some of the best saddle-horses in Germany. There are no manufactures of any importance. Thread, coarse yarn, and linen are made in some parts, chiefly by the peasantry after their labours in the field are concluded; there are likewise many tanneries and brandy distilleries, two glass-houses, five paper-mills, and many oil-mills and saw-mills. The exports, besides flax and timber, are some earthenware, linen, and Meerschaum tobacco-pipes manufactured at Lemgo.

The religion of the prince and the great majority of the inhabitants is Calvinism; but the inhabitants of Lengo and Lippspringe, all principalities and half about 5400, are Lutherans, and there are in the principality about 1600 Roman Catholics. The government is monarchical, with an assembly of estates consisting of 21 members, which, according to the constitution of 1819, includes by the prince the whole county. The prince of Lippe-Detmold, with Schaumburg-Lippe, Reuss, Hohnzollen, Liechtenstein, and Waldeck, has the sixteenth vote in the diet and in the full council one vote of its own.

**Dethom:** the territory on the Werra, consists of the old and new town, of which the latter is very pleasant, and has some delightful public walks and gardens.
chief buildings are the palace, the gymnasium, and the theatre. There is a gymnasium, a seminary for schoolmasters, a school of industry, a Bible society, a society for the promotion of Christianity among the Jews, an hospital, &c. The number of the inhabitants is 25,000, in addition to which is a walled city with seven gates, has 4000 inhabitants, who carry on various manufactures, especially of woolen, linen, leather, and tobacco-pipes, of which the last is very considerable. The town has one Lutheran and six Roman Catholic churches, and a gymnasium.

Among the public buildings are two houses belonging to the prince, called the Lippenhof and the Annenhof, the nun convent built in the fourteenth century, and the orphan-house.

SCHAUENBERG-LIPPE consists of four bailiwicks in the county of Schauenberg and three in the county of Lippe, which are surrounded by Hanover, the Hessian part of Schauenberg, Lippe Detmold, and Westphalia. It is 210 square miles in extent. The population is 25,000, who profess the Lutheran religion, except 3500 Calvinists in Altenbeken and Blomberg, and 160 Roman Catholics. The country, which is in general mountainous, has no rivers except small affluents of the Weser: the Stein-hude lake is about 5 miles long, 24 broad, and at most 6 feet deep. There is no fish, nor pigeon, partridge, woodcock, pheasant, mallard, teal, or other waterfowl. The only birds are the thrush, and is produced in large quantities. The river is navigable for 21,000 florins (about 21,000L sterling). The country has had over since 1816 an assembly of estates, which consists of 13 members, and meets annually. The chief town and residence of the prince is Bückeburg on the Aa, the palace of which was destroyed by fire in 1793. There is a Lutheran and a Calvinist church, a gymnasium, an orphan-house, &c., but no remarkable buildings. Stadthagen, a walled town with three gates, has 1485 inhabitants. There are in the town a palace, which is the usual residence of the prince, and a school of the crown, and a number of public institutions; and the church, with the splendid mausoleum erected by Prince Ernest. In the neighbourhood there are coal-mines and considerable stone-quarries.

Schauenberg-Lippe, as a member of the German confederation, has been part of the general vote of the sixteenth vote with Lippe Detmold, &c. Its contingent is 240 men, and its payment to the treasury 250 florins.


LIÉPUS, JUSTUS, was born at Isque, a village between Brussels and Louvain, the 18th of October, 1547. He was educated at Brussels, Cologne, and Louvain, and at the age of 30 he was a monk of the monastery of St. Thomas, one of the principal monasteries in the Low Countries. This was to be his life, but he was too strong for theabbey, and in 1579 he was appointed professor of history at Jena, where he resided till 1574. In 1579 he was appointed professor of history at Leyden, and took an active part in the ecclesiastical disputes of the times. During his residence at this place he professed the Reformed religion, but on quitting Leyden in 1581 he returned to the Roman Catholic church, in which he had been brought up, and published two treatises in defence of the worship of saints and their miraculous powers (Dea Virgo Hellenica, 1604; Dea Virgo Sichemineane, 1605). He was afterwards appointed professor of history at Louvain, where he remained till his death, March 24, 1606.

The works of Lipus, which are very numerous, were collected and published at Antwerp in 1637; and also at Wittenberg, 1657. Most of his works are of notes on the Latin authors, of which the commentary on Tacitus is the most valuable. His works on morals and political philosophy, and discursive on Roman antiquities and historical subjects.

LIPOAVA, Illiger's name for the Tutelis Mormot of Peters. (Zoöl. NEw, p. 417.) The species is marked as doubtful by Dr. Fischer, as far as the great Martes. The Latin name is marked as doubtful by Dr. Fischer.

LIQUATION, or ELIQUATION, a process by which silver is sometimes separated from copper: it is an old art that has fallen considerably into disuse on account of the trouble and expense attending it. When copper contains silver in the proportion proper for this operation, it is at a certain stage of the process of reduction mixed with copper, and has little silver in it. It is the copper, but contains silver easily with the silver; the lead holding the silver is then worked off on a cupel in the usual way, and the silver is obtained separately. (Aikin's Dictionary of Chemistry, vol. ii., p. 367.)

LIQUIDAMBAR, a genus of plants of the natural family of Balsaminum of Blume, which has been altered to Balsaminaceae by Dr. Lindley. The name is derived from liquidam, fluid, and ambar, the Arabic name of amber. The genus is closely allied to the willow and plane tribes, being a deciduous tree, the fruit of which is formed in moderate size, by it being composed of two to four seced capsular, and their abuminous embryo. The species are only three in number, all forming fine trees, and occurring in Java, the Levant, and North America. Liquidambar styraciflua is the species found in Mexico and the United States, in the latter of which it is called sassafras, and forms a large and fine tree, bearing some resemblance to the lesser maple (acer campestre): the wood is of a hard texture and fine grain, and makes handsome furniture, but the tree is more noted for the fragrant liquid resin with which it is covered, which is sold by its droppers, under the name of frankincense. It is a species whose leaves resemble very thick turpentine, has a feebler odor than the liquid balsam, and contains less volatile oil, but more benzoic acid. L. orientalis is a small tree, a native of Cyprus and other parts of the East Indies; was introduced into the United States in 1817. L. gmelinii is a native of the Red Sea. Dr. Poọcek, as quoted by Dr. Lindley, states that it is called, Xylon Effendi (the wood of our Lord), in Cyprus, where it produces an excellent white turpentine, especially by incisions made in the bark. It is this sublimate which, on being boiled with water, forms a spirit which is used in many works by the name Rosella, or molasses, descript as a balsamic fluid produced upon the island of Cabros, at the upper end of the Red Sea near Cadiz. It is a three days' journey from Suez. But there are no recent accounts of this substance, which is a sufficient reason why it is not known. Mention is made of the following species.—L. altissima is a native of the forests of Java, at elevations of 2000 to 3000 feet above the level of the sea. It forms a gigantic tree, with bark having a hot and bitterish taste, yielding a fragrant balsam, or liquid resin. It is one of the varieties of the species. There is no proof that the liquid storax known in Europe is obtained from it, and it does not grow near the localities whence liquid storax has so long been obtained. It is therefore probable that some portion is obtained by boiling the wood, and some by acting upon them with oil, spirit, or naphtha. (Styrax.)

The subject is interesting as connected with ancient commerce, inasmuch as old writers mention a liquid with the solid storax. By the Arabs the former is described under the name ma-saith, liquid storax, or liquid storax; the latter is known as ma-saith, solid storax. Both are described by Scopoli under the head Meba; by Avence under the several heads of Labna, Astara, and Miba. The name ma-saith, with the suffix ru (ruiss), would appear to be the origin of the Malayan Rasamala, and thus one which has been variously corrupted.

LIQUORICE. (Glycyrrhiza.)

LIRIODENDRON. (Tulip Tree.)

LIRIS. (Campania.)

LISBOA, in Portuguese, the capital of the kingdom of Portugal, is situated on the northern bank of the Tagus, about nine miles above the bar or entrance of the river, in 38° 42' N. lat. and 9° 5' W. long. It rises in the form of an amphitheatre from the bank of the river, which is precipitous and steep, and is entered by the hill of Buenos Ayres, or Estrella, to the west, and the castle-hill to the east. Most of the streets are steep, irregular, and tortuous, besides being ill paved and dirty. One part of the city however, which has been entirely rebuilt since the year 1794, is large, clean, built and handsome; it lies on even ground in a valley which runs in a direction at right angles to the river, between the castle-hill to the east, and the hills of S. Francisco and Do Carmo on the west. This space contains about eight or nine well-built parallel streets, some of them, such as the Rua
Augusta, tolerably wide, and nearly half a mile in length, containing the best shops in Lisbon, especially those of the goldsmiths, silversmiths, and jewellers. These streets are crossed at right angles by other streets, and they terminate on the river side in a handsome square called Praça de Comércio, one corner of which is formed by the Tagus, and the other sides by the arsenal, the custom-house, the exchange, royal library, and other public buildings. This square is adorned with a bronze statue of king Joseph I. At the opposite or north end of the above-mentioned streets are two towers, the turrets of the Convent of the Franciscans and the Praça do Rocio, the latter of which is bounded on one side by the convent of S. Dominic and the massive buildings formerly occupied by the Inquisition. Further north going towards the country is the Passeio Publico, or promenades of the nobility and gentry, and very inferior to the public gardens of other capitals.

The eastern part of the town, which lies at the foot of and beyond the castle, consists of narrow, irregular, ill-paved streets with a neat house here and there. This is the oldest part of Lisbon, and the houses here are low and highly fenced. It is remarkable that while the earthquake destroyed all the buildings in the valley, it spared the houses built on the steep declivity of the hill.

To the westward they grow streets the town rises on the steep declivity of a succession of hills, with a few good streets and open places here and there, especially along the river side, the rest of the streets being crooked, narrow, and filthy. Here and there are massive buildings, chiefly convents and churches, where the crooked and narrow streets of the hills, and tower above all the rest. Lisbon being an island, resembles London, and its suburbs very long and straggling in various directions, it is not easy to define its limits. Its western boundary however is generally fixed at the stream of Flechas, which flows into the Tagus, and thence to the extreme eastern point of the town the length in a straight line is between three and four miles, not reckoning the sinuosities of the ground; the depth of the town from the Tagus island varies from one mile to a mile and a half; not included in the town are the Thalwegs, and on the approaches to the town. The whole of the area described is however far from being thickly covered with buildings; many parts are occupied by extensive gardens, plantations, the naked steep declivities of the hills, and by ruins and rubbish. The district of Buen Ayres, along the slope of the western hill, is the least densely built, and contains many pleasant and healthy residences with gardens, which are mostly occupied by foreigners. West of the bridge of Alcantara a line of streets parallel to the Tagus, and running through the town and royal residence of Belem. [BELEM.]

The Tagus from Belem up to the western end of Lisbon—a little more than one mile in width, but opposite the centre of Lisbon it widens considerably, the left or southern bank being little used, and on the right or northern bank forming a wide bay or reach about five or six miles in breadth, and extending far to the north-east. This bay is the river in front of Lisbon a sea-like appearance, which adds to the effect of the scenery. The southern bank, which is hilly about Almada, and near the river, and is swampy at low water; it is however studded with small towns and villages, such as Aldeia Gallego, Monta, Alhosvedos, Lavradio, Barreiro, Coim, Seixal, Costa, Montella, and Almada. These places keep up a trade with Belem. The greater part of the country round Lisbon, particularly on the east and north sides, is covered with large gardens surrounded by high walls, which bound the view on every side. These gardens, called "Quintas," are often of considerable extent, and laid out in picturesque, generally containing plantations of orange and olive trees, and sometimes vineyards and even corn-fields. A pretty large house is attached to them, in which the families of the owners spend part of the summer. To the west of Lisbon the country is better cultivated, and the soil consists of basalt, covered here and there with limestone; the basalt on which Lisbon is built extends to the north-west towards the market-town of Bolas already mentioned, and thence to the north as far as the Tagus near Belem. (Link, Travels in Portugal.) Beyond Bolas, running north-east to south-west and terminating on the sea at Cabo do Rosco, rises a high range of mountains full of peaks, consisting of granite, partly covered
with limestone. The soul, delicacy of these mountains towards Lisbon is its beauty, and it is on the opposite or northern side of the delightful quintas and shady groves are situated which afford a summer residence to the wealthy inhabitants of Lisbon. [Contr.]

Leaving Lisbon for the north towards Torres Vedras there is a succession of picturesque villages such as Campo Grande, Carnide, Lumiar, Loures, &c., extending for several miles almost without interruption. The same occurs in a northeast direction along the banks of the Tagus towards S cavem.

The population of Lisbon is reckoned at 260,000 inhabitants. Its trade, though much diminished since the loss of Brazil, is still considerable. It exports wine, fruits, and oil; and it imports corn, salt fish, salt butter, cheese, timber, iron, lead, tin, copper, coals, tar, and all sorts of foreign manufactures, with which it suppleys the whole southern part of the kingdom. Lisbon has some manufactories of silks, paper, soap, and leather; its goldsmiths and jewellers are very expert; and there are also sugar refineries and potteries. We ought to observe here that the want of canes and ivory of the Portuguese have been much exaggerated by travellers.

The scientific and literary institutions are—1. The Royal Academy of Sciences, founded during the reign of Queen Maria I., a part of the last century. It is a respectable association, and has published very interesting memoirs on the history, laws, and economy of Portugal, as well as upon its natural history and that of its colonies. 2. The College of the Nobles, a very handsome building, founded during the reign of John V., and the Royal Academy of Medicine, founded in 1779, or School of Navigation and Ship-building, with the observatory attached to it. 4. The Royal Academy of Artillery and Engineers, founded in 1790. 5. The Royal Military College. 6. The School of Music. 7. The National Library and Re-cension of Natural History at the royal residence of Ajuda, near Belem. 8. The Royal Library and that of the Necessaries. 9. The Royal Schools of Vicente de Fora, where philosophy, geometry, physics, and the antique languages are taught. 10. The Royal Schools of Drawing and Civil Engineering. There are also primary or elementary schools in the various districts of the city.

Society at Lisbon is rather dull; families live much among themselves; the Portuguese are not very fond of exercise, and their chief relaxation is going to their quintas in the summer. Carriages are scarce and old fashioned. The Italian Opera, or De Carlos, is a handsome house and much frequented. The Portuguese play-houses are small, and the performances are not very cheap. Lisbon is kept by foreigners. There are some tolerable coffee-houses, and a number of taverns, or wine-shops, and eating-houses, generally dirty and ill-attended.

The inhabitants of Lisbon, though mostly inclined to bigamists, are not very averse to the constant intercourse with the English and other Protestants, and have not that horror of heretics which is exhibited by the inhabitants of the inland parts of Spain. (Kins., Portugal Illustrated; Miliano, Diction. Geog.; Link, Travels in Portugal, a good work of the last century; and other tourists. See also Map of Lisbon, by the Society for the Diffusion of Useful Knowledge.)

LISBON, a parliamentary borough town, not corporate, situated partly in the barony of Upper Sintra, and partly in the barony of Upper Castlecroft and county of Down, in Ireland. The parish, called likewise Biscuit, extends also into the barony of Lower Lavagh, in the county of Down. The town is 73 Irish or 93 statute miles from Dublin, or 9 statute miles from Renvyle. The boundaries of the borough, as settled by 2 and 3 Will. IV., c. 63, comprise 1232 statute acres.

This town took its origin from the erection of a fortified mansion, about 1610, by Lord Fulk Conway, to whom a large part of the manor of Dulichagh had been granted by James I. These grants were enlarged and confirmed to Viscount Conway in the succeeding reign, during which the number of English and Welsh settlers in the town and neighbourhood greatly increased. The town was at this time called Lynagarey, and soon became a considerable place, as it appears by the gallant and successful defence which it made against the Irish under O'Neill on the 28th November, 1641. The town and castle continued in the hands of the Royalists until 1649, when Sir Charles Coote took possession of the place for the parliament. On the Restoration, King Charles II., in consideration of the loyalty and services of the inhabitants, granted them a patent, dated 27th October, 1662, by which the church of Lissburn was erected into a cathedral for the united diocese of Down and Connor, and the inhabitants of the borough were exempted from the return of members to the Irish parliament. On the revolution of the Edict of Nantes, Lissburn became the residence of a number of French refugees, who introduced the linen and damask manufacture, from which much of the succeeding prosperity of the place has arisen. The town has since become one of the smallest and the chief part of the town. The castle gardens were then turned into a public promenade, and the town rebuilt in a more substantial and handsome manner. During the prosperous period which intervened between 1778 and 1800 the Irish and Lissburn increased rapidly. Since that time the town has rather declined, owing probably to the superior facilities for carrying on the linen and cotton-spinning trades possessed by the neighbouring seaport of Belfast.

The town is the return-officer in elections for the borough, which, since the Union, is represented in the imperial parliament by one member. The number of electors in March, 1836, was 124. The right of election by act 3 and 3 Will. IV., c. 89, is vested in the householders.

The appearance of Lissburn is very pleasing. It is situated on a gently rising ground, on the north-western or Antrim side of the Lagan. The market-house occupies an open space in the centre of the town, where the three principal streets of the borough meet. The town is marked by a cupola. Near the market-house is the church, an elegant edifice with a lofty spire, on each side of which the two streets leading towards Belfast and the old bridge over the Lagan diverge. The castle gardens are included between the two principal streets, and form a handsome terrace command a fine prospect. The houses in the main street are chiefly built of English brick, and have a very elegant appearance. Those in the opposite or western end of the town are of an inferior description, with the exception of 20 houses in the town of which the 3rd section is the finest. Of 992 houses within the borough, 675 are roofed with slate, which is an unusually large proportion of that class of houses in an Irish inland town. The manor court-house, formerly a chapel for the French Protestant sect, forms part of the mansion-house, and is well adapted to its situation. There are also three Presbyterian meeting-houses, one Methodist ditto, and one Roman Catholic chapel.

Lissburn is well paved, and is annually supplied with water by conduits to the houses. The provisions of the town are not of the best in Ireland, except in the case of the fish, which are landed in the town discharge the duties of municipal police. On an island in the Lagan, in the eastern suburbs, are extensive "trioil-works." Some of the largest bleach-prints for linen in Ireland are in the vicinity; and in the town itself are also several of the most celebrated distilleries in the kingdom, much celebrated for the beauty of its fabrics. A navigation extends from the town by the river Lagan to the sea at Belfast, and by the river and a canal to Locheagham. A railroad is now nearly completed between Belfast and Lissburn, which is intended as the commencement of a line through Armagh to Dublin. This is the second work of the kind hitherto undertaken in Ireland.

In 1812 the number of houses in the borough was about 809, the estimated number of inhabitants 5745. In 1821 the number of houses was 992, and of inhabitants 5745. In 1824 there were in the parish of Lissburn seven day-schools, educating 756 males and 548 females. Of these schools two were supported by the Association for the Purpose of Education in Protestant Schools in Ireland, and the other five were supported by subscribers. The county infirmary is at Lissburn, and there are almshouses for fourteen females, supported by bequests, amounting in all to 27.5.0d.

Lissburn was returned for Antrim county, Dublin, 1612; for the second time in 1701, and was returned by John Allen, first for Antrim county, and second for Antrim county, 1612; but the second time for Antrim county, 1701, although very little known in this country, still ranks high in Germany for his satirical writings, which, in his caustic irony, show their author to have had a comical turn of mind with Swift. Very few particulars of his life have been recorded, farther than that about the year 1729 he was private tutor at Liskeard, where a pedant named Sievers was the first who fell under the castigation of his pen. After this he became private secretary to
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Gehemen von Blome, from which nothing can be traced respecting him till he entered the service of Von Henecker at Dresden. Under this accomplished and generous patron he might have passed his days in tranquility, but his love of travel prevailed over his peace. Having offended the English minister at that court by some sarcasms, he drew upon himself the resentment of the all-powerful Count Bruhl, who caused him to be sent as a hostage to Berlin. There he died shortly after, October 30, 1760. Some have however questioned the truth of his having been in confinement.

Posthury has been more just to Liscey's merits than were his contemporaries. His satire was directed only against the house of Orange, not against the dynasty, or his person, certainly impartial, and without any respect to persons, for a powerful offender was in his eyes no more than the meanest. That he possessed no ordinary ability for politics may well be conceived when we find Pott, the editor of a notorious work of his, saying that had Count Bruhl listened to Liscey's advice, Germany would have been spared the Seven Years' War. The first complete edition of his works was published by Krieger Mithurich in 3 vols. 8vo, Berlin, 1806. Of several of these pieces the titles will be seen on the verso, i.e., On the Excellence and Usefulness of Bad Writers; On the Uselessness of Good Works towards Salvation; and the Inaugural Discourse of the learned J. B. P., &c., at the Academy of Small2 Essays and discourses on the state of the world, or the state of the修理 has been said, that had Count Bruhl listened to Liscey's advice, Germany would have been spared the Seven Years' War. The first complete edition of his works was published by Krieger Mithurich in 3 vols. 8vo, Berlin, 1806. Of several of these pieces the titles will be seen on the verso, i.e., On the Excellence and Usefulness of Bad Writers; On the Uselessness of Good Works towards Salvation; and the Inaugural Discourse of the learned J. B. P., &c., at the Academy of Small2 Essays and discourses on the state of the world, or the state of the

LISIEUX, a town in France, capital of an arrondissement in the department of Calvados, 93 miles west by north of Paris in a straight line, or 106 miles by the road through Evreux. This town existed at the time of the Roman conquest, and was probably called Liesiacum or Liesiacum; it subsequently took the name of Leuxic, from the people to whom it belonged; and from this name the modern Lisieux is derived. It was pillaged by the Normans in a.d. 877; burned by the Bretons in a.d. 1120; and often attacked by the Franks and English in the religious dissensions of the sixteenth century. It was before the Revolution the seat of a bishopric; the bishop was a suffragan of the archbishop of Rouen. The town stands on the right or east bank of the Touques at the junction of the Orbec. The old walls have been lately replaced by some tolerably handsome buildings and a promenade. The streets of the town are tolerably wide; the houses are mostly of wood. The chief public buildings consist of the town hall (with little character) and a circular palace with its gardens, the seminary for the priest-hood, and the great hospital. The population in 1831 was 10,257; in 1833 it was 11,473, showing an increase in five years of 1,216, or above 10 per cent. The manufactures of the place are chiefly of broadcloth, flannel, and other woolen fabrics; woolen and cotton yarn, and cotton goods; horse-cloths of wool and hair; leather, and brandy. There are bleeding and dyeing establishments. The trade, which is chiefly in the manufactures of the town, is promoted by the navigation of the Touques, which commences at Lisieux. There are six yearly fairs. Besides the public institutions already noticed, there are several others, judicial or fiscal; also a high school and a theatre.

Among the former bishops of Lisieux, Jean Hennuyer had been a prominent figure in the anti-Salica movement. He was named a cardinal in 1196 and died in 1208. His feast day is celebrated on January 22.

The town is a prosperous market and manufacturing center, with industries including textiles, leather goods, and lace. Lisieux is also known for its beautiful Romanesque cathedral, which houses the relics of St. Hilary. The town is home to the famous Lisieux Carmelite Sisters, who maintain a monastery dedicated to St. Thérèse of Lisieux, a saint revered in the Catholic Church.

LISLE, L'ISLE. [Avaucul.] LISLE, WILLIAM DE, born at Paris 28th February, 1616, was the eldest son of Lisle Delisle, a geographer and historian, under whose instruction were the proofs of a decided predilection for geographical pursuits.

Before the time of Delisle, the principal maps of authority were those of Nicholas Sanson, to whom geography is under many obligations; but these maps were exceedingly erroneous from the want of astronomical observations, although it does not appear that the author had fully availed himself of the few observations which really existed. After the death of Sanson, his sons continued to reproduce his maps with little change. In 1742 M. Cassini published the more recent accounts of travellers and the observations of astronomers, which greatly improved the positions of their maps. For this they were repeatedly censured both by La Hire and Dominique Cassini, to whom however they seem to have paid little regard. At length, in 1696, Cassini drew a planisphere upon the pavement of the hall of the Paris Observatory, whereon he marked the position of 39 places according to their observed latitude and longitude, and thus exhibited the magnitude of the errors which vitiated the existing maps, and at the same time pointed out the means of effecting their improvement. Still however the geographical positions of far the greater number of places could only be inferred from antient itineraries, which often conflicted with the results of modern travellers, while the coast-lines had for the most part to be determined from a tedious comparison of the log-books of seamen. It is obvious that for a task of this description, in addition to the requisite knowledge of languages, the capacity of making a very attentive and exacting survey of the coast, accompanied by an orderly and judicious arrangement of large, a person should be familiar with languages, and his reading must be sufficiently extensive to enable him to avail himself of all historical resources; he must be able to appreciate the changes which have taken place in the boundaries of nations; he must also be conversant with the measures of different nations, a problem of very considerable difficulty; but above all he must exercise a highly critical judgment in order to arrive at a degree of confidence properly proportioned to the error of the measurement. It was eminently endowed, although he left ample room for the display of perhaps greater abilities in his successor M. d'Anville, there is no doubt that his own labours contributed powerfully to the
LISMORE, a bishop's see, late in the archiepiscopal province of Cashel, and now in that of Dublin, in Ireland. It includes portions of the counties of Waterford and Tipperary, and extends 37 statute miles by 38. The chapter consists of a dean, precentor, chancellor, treasurer, archdeacon, and 8 prebendaries. In 1792 the diocese was divided into 73 parishes, constituting 35 benefices, and having 22 churches. In 1834 the numbers were: parishes, 73; benefices, 43; churches of the Established Church, 36; other Protestant churches, 5; Roman Catholic churches, 1; and Roman Catholic parishes, 1. In the latter year the total population of the diocese was 216,236, of whom there were 5970 members of the Established Church, 164 Presbyterians, 382 other Protestant Dissenters, and 2780 Roman Catholics. There were about 32 Roman Catholics to 1 Protestant. In the same year there were, in this diocese, 236 daily schools, educating 17,699 young persons, being in the proportion of 8:14 per cent of the entire population, under day-superintendents, of whom 11 respect Lismore stands thirteenth among the 33 dioceses of Ireland. Of the above schools, 12 were, in 1851, in connection with the National Board of Education.

St. Carthig, commonly called Mochuda, of Ratheny in Waterford, is supposed to have a foundation of the cathedral and school of Lismore, in A.D. 631. Carthig, afterwards bishop of Tarantum in Italy, succeeded during his time and that of his predecessor, the school of Lismore was greatly celebrated for the number of its students. This town or city, situated on a hill, was exclusively inhabited by ecclesiastics. Soon after the arrival of the English, the antient see of Ardmore was annexed to the diocese; and in the bishopric of Thomas de Reobje. A.D. 1358, the see, so increased, was added of Waterford and Lismore, being void, has been annexed to the united see of Cashel and Emily, and its temporalities are now vested in the Ecclesiastical Comm. of Ireland.

Lismore is situated in the barony of Comber and Combride, and county of Waterford, on the southern bank of the Blackwater, three miles from the point where that river changes its course from east to south. The town is well supplied with water, and is on the junction of the Blackwater and a branch of the river Suir, which occupies the summit of the southern bank. At the eastern extremity of the town is the cathedral, a plain building, with a tower and spire, boldly situated on the crest of the hill. It is in the later English style, and was completed by the Earl of Cork. It is a magnificent pile, originally erected by King John in A.D. 1185, and greatly enlarged and strengthened by the 6th Earl of Cork, stands on the summit of a rocky bank, which, at a height of nearly 30 feet above the Blackwater, at the opposite end of the town, is the property of the Duke of Devonshire, by whom it has been greatly improved of late. The town is also much indebted to the late duke, who built the bridge at a cost of 9600 and restored the castle, which had been reduced almost to ruin during the civil wars of the seventeenth century.

Lismore was erected into a borough by charter of James 1 and was represented in the Irish parliament by two members. The franchise was abolished at the time of the Union. The borough was incorporated in 1613 and the same charter, granted in 1613, the borough was incorporated; but the corporation is now defunct. The Blackwater is navigable within a mile of the town, and a canal has been constructed in the county of Wexford, by which lighters can now come up as far as the bridge. There is a small export of grain and flour; imports are trifling, consisting chiefly of coal and timber.

In 1831 there were in the town 366 houses and 22 inhabitants. In 1834 there were in the parish of Lismore 22 day-schools, educating 753 males and 498 females, and 18 of these schools were chiefly supported by the deaconess of the day-schools. In 1831 the town was reduced to 9600 by the Duke of Devonshire, one by an endowment by Lord Comber, and one by grant from Sir Richard Musgrave.
in solution, which, being evaporated, hydrate of lithia is left. Lithium is but little known. Davy obtained it from the above described hydrate by means of volatile electricity, in the same way as he had previously procured potassium and sodium from their respective hydrates. Lithium was found to resemble sodium in its whiteness, but it was oxidized and converted to lithia with such rapidity, that its properties could not be made to us examined.

Oxygen and Lithium.—It is evident from what has just been stated, combine with great readiness, and are separable with difficulty. Only one compound of these bodies is known, and that is the alkaline oxide lithia, which exists, as has been mentioned, in certain minerals, and also in the waters of Carlsbad, but in combination, lithia in its alkaline properties, in forming a hydrate with water, and in its chemical relations, is closely allied to potash and soda, and, unlike these alkalis, is not very soluble in water, but the solution resembles theirs in being caustic. It has not yet been obtained in the anhydrous state, so that when the solution is evaporated, hydrate of lithia is procured, which fuses at a low red heat, and on cooling concretes into a mass, which has a crystalline fracture; it does not attract moisture from the air.

The hydrate of lithia has not been analyzed, but from indirect experiments the oxide is concluded to consist of:

One equivalent of oxygen • • • • • 8
One equivalent of lithium • • • • • • • • • 6

Chlorine and Lithium readily combine when the alkali is dissolved in hydrochloric acid; the solution, when evaporated to dryness and fused out of the contact of air, leaves a chloride of lithium, which is a white powdery substance, very deliquescent, and soluble both in water and in alcohol. By evaporation cubic crystals are obtained, the alcoholic solution of which burns with a peculiar red flame. When strongly heated in the air, chlorine is expelled and oxygen absorbed, and the alkali lithia remains. It is probably composed of:

One equivalent of chlorine • • • • • • • • 36
One equivalent of lithium • • • • • • • • • 6

Sulphur and Lithium, when obtained in combination by decomposing the sulphate of lithia with excess of charcoal, form an extremely pyrophoric substance.

Iodine and Lithium.—No compound of these is yet known.

Flourine and Lithium form a fusible compound, prepared by dissolving lithia in hydrofluoric acid; it is difficultly soluble in water; the solution deposits small opaque crystals.

Nitric acid in a cold state forms salts with lithia. The nitrate of lithia obtained by treating the alkali with the acid. This salt is very deliquescent; when the solution is gently evaporated, crystals are obtained, which are sometimes needlemorphic and sometimes regular rhombic prisms. Its taste is like that of nitre; it is extremely fusible, and becomes by heat as liquid as water. It is probably composed of:

One equivalent of nitric acid • • • • • • • • 54
One equivalent of lithia • • • • • • • • • • 14

Carbonate of Lithia.—When a strong solution of carbonate of ammonia is added to one of sulphate of lithia, a white precipitate of carbonate of lithia is formed. This salt is very slightly soluble in cold water; it is decomposed by acids with effervescence, and has an alkaline taste. It is decomposed by lime and barytes, which separate the carbonate acid. It consists of:

One equivalent of carbonate acid • • • • • • • 22
One equivalent of lithia • • • • • • • • • • 14

The waters of Carlsbad in Bohemia are stated to contain bi-carbonate of lithia in solution; and by spontaneous evaporation the carbonate separates in the state of a crystaline crust.

Sulphate of Lithia.—This salt is very soluble in water; it has a saline taste without bitterness, and crystallizes only in irregular masses. The air does not act upon it, and, unlike most of the salts of lithia, it is very difficult of fusion. It is composed of—
Phosphate of Lithia may be obtained by adding phosphoric acid to sulphate of lithia; no precipitate is at first formed, but on adding excess of ammonia an insoluble phosphate of lithia is thrown down: this property enables us to separate the potash from the phosphoric acid, and enough of the salt to saturate the water, and to make a solution which assumes a colour more or less deep according to the quantity of litha set free. Lithium is distinguished from soda and potash by its greater saturating power, as shown by its lower equivalent number; chloride of lithium is distinguishable from the chlorides of sodium and potassium by its solubility in alcohol, and the solution burns with a red flame. Its salts are not precipitated by chloride of platinum, as those of potash are; and, unlike both potash and soda, it forms a diffusely soluble carbonate and phosphate.

Litho/Domus. [Mytilus.] The art by which impressions or prints are obtained by a chemical process from designs made with a greasy material upon stone. It has therefore been properly termed chemical printing, to distinguish it from all other modes of obtaining impressions, which are mechanical impressions taken from an engraved copper plate, the ink being delivered from the incised lines therein with the graver or etching-needle. An engraving on wood, on the contrary, gives its results from the projecting surface of the block, or those parts which are not cut away by the graver, in a similar manner to the chemical process. From both these modes, the impressions being obtained (by strict attention to chemical affinity) from a level surface.

There are various styles of lithography, as will presently be seen; but the principle of the art is uniformly the same, but as we have said, based upon those of chemical affinity. The stone best calculated for lithographic purposes is a sort of calcareous slate, found, in large quantities, on the banks of the Danube in Bavaria, and much esteemed in France, but the German have been found in some parts of Devonshire and Somersetshire, and also in Ireland; but we believe that on all the trials hitherto made, the stones found in this kingdom have been proved to want some of the most essential qualities necessary to the perfect performance of this art, and therefore almost exclusively used. Even these vary much in quality, all the strata not being equally good: some are too soft, and others are required until for use by the presence of chalk, flints and veins, and fossil remains. A good stone is porous yet brittle, of a pale yellowish-gray, and sometimes of a grey neutral tint. The stones split into slabs varying from 1½ to 2½ inches in thickness, which are then cut or squared into the different sizes necessary for use, and the face or upper surface of each is made level. In this state the stones are sent to the manufacturer, but further preparation is yet necessary to fit them for the immediate use of the artist, and they are either grained or polished, according to the nature of the work they are intended to execute. The mode of graining a glazed stone, as it is called, is this:—A stone, being finely ground, its surface, has its surface wetted, and some sand sifted over it through a very fine wire sieve. Another stone is laid with its face downwards upon this, and the two are rubbed together with a peculiar motion, to produce the requisite granular sub stance, which is made finer or coarser, to suit the taste or intention of the artist. The stones thus prepared are used for drawings in the chalk manner, or for imitations of those produced with the black lead pencil. Great care is requisite in this mode of preparation, to keep the granulation uniform and the surface free from scratches, the presence of which would otherwise much disfigure the future work.

Writings, imitations of etchings, pen and ink sketches, &c., require the face of the stone to be polished, which is effected by rubbing it with pumice-stone and water, or pumice-stone and paper applied with rasps: no sand is used, as it would produce a grind.

The two principal agents used for making designs, writings, &c., on stone, are called lithographic chalk and lithographic ink. They are composed of tallow, virginia-wax, copperas, and water, and a small portion of varnish, which is added to the mass. These are incorporated by a peculiar process of burning in a closely-covered saucepan over a fire, and the whole is ultimately cast into a mould, and receives the form calculated to fit it for use. The ingredients are the same as those of rubber, but a small portion of varnish is added. The chalk is used as it comes from the mould in a dry state, but the ink is dissolved by rubbing, like Indian ink, in water, and is used in a pen or camel-hair pencil. It will be further considered that it is the presence of the chalk in soap in this granular mass which renders it insoluble in water.

To render the lithographic process intelligible, let it be supposed that the artist now completes a drawing with the chemical chalk just described, upon a glazed stone. If white in this state, a sponge filled with water was passed over the face of the stone, the drawing was washed out. The chalk with which it is made being, as we have seen, soluble in water, by reason of the soap which it contains. Before therefore it is capable of yielding impressions, a weak solution of alkaline soap is applied with a brush. This neutralizes the alkali or soap contained in the chalk, and renders it insoluble in water. After this the usual course is to float a solution of gum over the whole face of the stone, and when this is removed, if a sponge and water be passed over the face of the stone, it will be found that the print is no longer removable, because the chalk with which it is executed is now no longer soluble in water. In this state the work is ready for the printer, who obtains impressions by the following process.

He first wipes his fingers a few drops of water on the stone, and spread them with a sponge, so as to be wet, or rather damp, the whole surface equally, the printer finds that the water has been imbibed by the stone only on those parts not occupied by the drawing, which being great in quantity, is washed away with dry. A roller proper is now charged with printing-ink, which is then passed over the whole stone, which will not even be soiled where it is wet, from the antipathy of oil and water. But the parts occupied by the drawing being seen to be dry, they have, dried and grey, having an affinity for the printing-ink, which therefore clings to the stone, and attaches itself to the drawing. In this state it is said to be charged, or rolled in. Damped paper is then put over it, and the whole being passed through a press, the printing-ink is transferred upon the paper, and the stone to the stone, which constitutes the impression. By repeating in this manner the operation of damping the stone and rolling in the drawing, an almost unlimited number of impressions may be obtained.

If we have said, the modes of lithography are various, but the illustration just given will explain the principle of them all. It consists in the mutual antipathy of oil and water, and the affinity which the stone has for both, i.e., in its power of imbibing either with equal avidity.

It will be inferred, that, to ensure complete success, great nicety is requisite in the preparation of all the agents employed in this art. Our limits will not allow us to go into details on the modes of manipulation, or the precise composition of the several materials used in making the designs, that form the subject of this treatise. For these materials for drawing, &c., on stone, in any style, are supplied by the different lithographic printers. Those who wish to study or practise the art in its full extent will do well to consult "A Complete Course of Lithography," by M. Rautesc, and the "Transfer Lithography," by Mr. Rautesc, and its greatutility, claims especial notice. A paper called "transfer-paper" is used to receive the writing in this mode of lithography. This paper has previously had a liquid gummy preparation washed over one side of it, which, when dry, constitutes its face, and the writing being performed with the chemical ink already described, rests upon them.
gummy surface, and does not penetrate to the paper beneath. When the writing or drawing done on the transfer-paper is dry, the back of it is wetted slightly but equally with a sponge and water, and the paper being very thin, the gum preparation on the front of it becomes at once partially dissolved. In this state the paper is laid, with its face downwards, on a polished stone, and being passed through a press, the transfer-paper is found strongly and closely adhering to the stone, and one corner being first raised, it will readily peel off, leaving the gum preparation, and of course also the writing which was above it, attached to the stone. The gum is then washed off with water, and the preparation removed, permitting the impression already explained. This mode of lithography being eminently calculated to facilitate the despatch of business, its great utility has been sensibly felt in the commercial departments of the country, and in several other governments, as by its means one written despatch can be multiplied at pleasure, without delay on the risk of typographical errors.

Another style of lithography is commonly called 'etching' or 'engraving on stone,' although it must by no means be inferred that in this process the stone is incised, but the results correspond with the clean-cut lines of the graver or etching-needle. A coat of gum-water, with some lampblack or vermillion mixed with it, to give it colour and render the work visible, is thinly but evenly rubbed over a polisher, and then covered with any application of grease. On this gum ground the design is executed with an etching-needle, precisely the same as in etching upon copper; and wherever the needle passes, of course the stone is laid bare, and it is best to cleanly remove any break from the stone by scraping. After this some oil is rubbed over the whole surface, and is imbibed by the stone wherever the needle has passed and exposed its surface by removing the ground. The gum is then washed off, and the work may be at once rolled in and printed, without any previous acidulation.

Thus we see that grease applied to the stone will yield impressions, but that the character of the impression depends, 1st, on the condition of the grease; 2dly, on the grease, since a destructive or impres- sion, is proved by a very curious phenomenon. That it is applied, we may observe in the progress of printing washed out with turpentine, so as both become quite invisible; and a looker-on, unacquainted with the subject, would suppose it to be slightly destroyed; but it is the black only which has disappeared; the grease remains, and on being rolled in again, the drawing re-appears uninjured.

The variation in the quality of the tints, arising from the mode in which the grease is applied, may be further illustrated by reference to the dabber, which is an instrument by which tints of exceeding delicacy may be produced. It is made of very smooth leather, being somewhat round on the edges, so that of all of them, the dabber a lithographic preparation, softer than the chalk, is evenly and thinly applied with a hard brush, and afterwards imparted to the stone by repeated blows with the instrument. The dabber was formerly much in use, particularly by those who are not admitted to the limited circle of artists who have been sufficiently cultivated, but among us, our artists have acquired greater manual dexterity, and produce tints of the greatest delicacy with the hand alone, which have the recommendation of standing better than those produced with the dabber.

The printing from two or more stones, although not a new discovery (since it was practised in Germany long since by Senefelder and others), has lately been more extensively practised in this country than heretofore. In this style the drawing is first made in the usual manner, and not on the stone, but on the sky and other delicate tints being omitted, and these are superadded from the 'tint stone.' The tint is executed with facility by the printer on another stone (polished), with a modified preparation of chemical ink, and thus much labour is saved to the artist.

The extreme lights are then scraped out on this tint-stone, and the printer superimposes the impressions from it to those already taken from the drawing on the other stone; of course taking great care that the two fit well, or 'register,' as it is technically called.

This mode has been applied in other ways than the one already explained; indeed it would be difficult to fix limits to its capabilities, improve as they may be in the hands of able chemists. Among the transfer modes, that of printing copper-plate engravings from stone is worthy of notice. The impression is first taken directly from the copper-plate, and without delay transferred, by passing through a press, to a polished stone; it is then acidulated, and the printing proceeds in the usual way. The impressions thus obtained are scarcely distinguishable from those printed direct from the copper. The advantage which this application of lithography holds out is most apparent where economy or great despatch are important. These objects are both obtained by transferring impressions to several stones, or several impressions to one stone, if the design be small, when the numbers can be multiplied with great rapidity, and without the original engraving being at all worn.

Plates of zinc have lately been much used as substitutes for the German stones, in chemical prints and the practice is called zincography; but the plates have the advantages of greater portability, and of being less liable to be injured in the process of printing. The advantages of zinc plates have been seen in any specimen which would warrant our saying that we think them equal to stone, for the best class of productions.

The purity of the paper used for lithographic printing is of very great importance, for however beautiful it may appear to the eye, if either acids or alkalies enter into its composition, or are used in the process of its manufacture, a circumstance of very frequent occurrence, they will certainly decrease the artistic propriety of the print, and be the cause of its failing. Hence arose a great obstacle during the early practice of lithography in this country. The increased demand for the article however has induced manufacturers to turn their attention to the subject, and papers are now produced for the express impressions of this art, which are free from the objections alluded to.

'Alloys Senefelder,' says Mons. Raucourt, 'an actor of one of the theatres at Munich, was the first to observe that calcareous stones had the property of receiving greasy lines and monotype paper, and that if ink be applied to the surface, it will unite with the stone, and the print made from it will be thus made. Hence is the invention of lithography. Although it was long a practice to decay this art, it has been revivified, and its merits and advantages are now sufficiently felt to make it unnecessary for us to say much in its behalf. If, as a general principle, an original drawing is better than a copy, then is lithography entitled to the respect of all who desire the general improvement of the public taste; which must surely be consequent upon a process by which original drawings are multiplied almost without limits; for all lithographic impressions are original drawings, if they be not altered or spoiled in the progress of the printing. The excellence of lithography depends of course, on the way in which the impression is performed; and the facility with which drawings are executed upon stone, and impressions of some sort obtained from them, has led to a glut of worthless productions, and a consequent feeling of disgust towards the art in the public mind. It is therefore absolutely necessary that consideration be paid to the result, even when the work is conducted by the best hands; for a variation in the quality of the stone, or any of the materials employed, or even in the temperature of the weather, produces considerable change in the impressions which have been produced are sufficient evidence that, even as a branch of the fine arts, it is every way worthy of esteem; while the commercial advantages of its lower departments, if not attended to, will have no effect, but will, on the contrary, be in great measure deprived of its originality. Our object has not been to enter into minute details, but to explain the principles upon which lithography is founded, and to show broadly its application to the dif-
fertent modes or styles; beyond this we have deemed it sufficient to refer to works from which more copious information may be obtained. For an account of the construction of lithotriptics see Press. 

**LITHOTRIPTICS** (λίθος, a stone, and τρίπτειν, to rub or bruise), medicines or other means which are thought to possess the power of dissolving stone or calculi in the urinary organs. The calculi concretions which are apt to form in the bladder are found in very different kinds, originating in different constitutions or in different habits of life or locality of abode. They are also different, not only according to the time of life when their formation began, but they often become varied in the progress of their increasing. They are different in the strata of which they are composed.

It requires therefore not only very close investigation into the characters of the urine of a person supposed to be affected with a stone in the bladder or kidneys of which they are composed, but an acquaintance with the chemistry and physiology of that fluid, and the great influence of the nature of the food and drink on its composition, to be able to direct the use of medicines which are regarded as lithotritic. With few exceptions, their effect is more apparent than real; and even when a diminution of the case has as frequently resulted as benefit from their employment. The researches of recent chemists and pathologists have given something approaching to a scientific explanation of the circumstances under which calculi form in the organs of urine, or vary in their size; so that chemically good may reasonably be expected from the use of lithotritics than has hitherto been realised. [CALCULUS.]

Of the twelve or thirteen varieties of calculous concretions which have been discovered in the bladder or kidneys of human beings, some are observed to be of rare occurrence, while the more common ones may be classed under two distinct heads — those which form under the prevalence of the uric or lithic acid state of constitution, and those which form under the prevalence of the phosphatic state of constitution. These sometimes alternate, and indeed the concretions which belong to the last class have almost invariably a nucleus or centre of the first kind, which shows how very important it is to avoid the causes of the lithic acid formed thereof.

Independent of constitutional peculiarities, the leading causes of the formation of calculous concretions are errors in diet or regimen. The kidney is the great channel for the expulsion from the system of the ascertained or nitrogenous products of the body; and it is necessary that these should be expelled from the body, a quantity of an aqueous menstrum is required. Hence whatever reduces the speed of the urine, or keeps the parts in which it is formed, in its formation. Now an excess of animal food, particularly if exercise be neglected, and strong wines, in a word, rich living, with indolent habits are the frequent origin of calculous complaints. Crude vegetables, with bad climate, and the unhealthfulness of the life, are the cause of the healthy action of the skin, equally predispose to the formation of stone, and thus the poor suffer from it as well as the wealthy. The causes being so widely different, the mode of treatment must also be different. A specific cannot therefore exist, and the use of a meddlesome hormone in such a case must lead to most hurtful results. Medicines taken by the mouth have been hitherto more successful in relieving the distressing symptoms (and such alone can be used with effect, for the urine escapes from the kidneys) than the various agents thrown into the bladder. There is however ground for believing that in certain cases, under competent direction, chemical agents and perhaps galvanism may be made available to dissolve the concretions in the bladder. (See Brodie, Lectures on the Urinary Diseases and particularly the very excellent work of Dr. Willis, Urinary Diseases and their Treatment, 1838.)

**LITHOGRAPHIDÆ.** A name applicable to all marine Conchifera, Molusca, Radiata, &c., that penetrate stones, masses of muds, and other hard clays, forming therein a nidus for themselves; but more particularly applied to the Conchifera. Whether the perforation be effected by chemical erosion or mechanical action is at present undetermined. Some observations on this part of the economy will be found in the articles on LAYERS, GASTROCHAETA (vol. xi, p. 261) others will occur in giving the natural history of Lithodomus, Pholus, &c., as well as in the treatment of the species noticed in this article. The erosion is not confined to the Conchifera only; for Patella has the power of perforating certain rocks to a limited extent; nor to the Mollusca generally; for several species of Echinus (Radiata, for instance, are known to make shallow basin-like lodgments in the rocks wherever they dwell. We shall here only refer to one of the last discussions on this subject, which took place at a meeting of the Zoological Society. In January 1837 Mr. Gray called the attention of the Fellows to some peculiar effects of chalk which he had recently found in the cliffs at Brighton, exhibiting perforations made by the Patella and Pholus, and presenting appearances which he considered to have been produces in the case of the Conchifera by the erosion action of the valves. His remarks elicited much discussion as to the manner in which certain molluscan genera penetrate limestone rocks and other hard substances, a phenomenon to be considered in connection with the case of the Conchifera, and in which it is evident, the valves can be made to move in many cases, in a manner similar to the Conchifera, but not, as far as he could observe, upon the supposition of its being exclusively caused by the erosion of the valves, but that it was chiefly due to the mechanical influence of the currents of water produced by the vibratile cells of the animal, as noticed by Mr. Garner in his admirable section of the moist conchiferous animals, made to the Society in 1835. (Zool. Proc., 1833, 1837.) This very interesting paper, beautifully illustrated, is published in its perfect state in the Transactions of the Society, vol. ii., and the observations which it occasioned have been followed up by Mr. Southward, who has examined the practical as well as the Zoological reader, for the subject is of high importance practically; as those who are interested in such great public works as the Plymouth Breakwater well know. If this paper should meet the eye of the practical engineer, he will find that the experiments which he has been making will be a public benefactor generally, and to this country, where so many submarine works are carried on, both in wood and stone, especially.

Besides the species above alluded to, and others noticed in the present memoir, to others advert in the proper place, certain crustaceans [Limnoria], possess the power of perforating wood at least. Excavation is also apparently carried on by the following marine animals. Certain Amelidaceae, says Mr. Garner, in the concluding paragraph of his observations on this part of the subject, apparently possess this power of excavation. The rocks on our coast are pierced by a minute worm, probably of the genus Diplomopsis of Montagu; it is strongly excelled, but its mouth does not appear adapted for making its way forward, nor is it the work of Vorticella, &c., although the erosion noticed by the naturalist of fresh-water bivalves takes place; the lime in water a part being soft and more distant from each other. We find the valves of the Oyster, Pecten, Litoraria, &c. performed by a circular aperture leading into the cavitites. Dr. Buckland showed this to depend upon the action of a zoophyte, which Professor Grant has particularly examined, and named Chonia calata. Dr. Buckland considers the holes to be formed by little borers, which in a circle each one, and which are circular perforations leading into the cavities. Dr. Buckland considers this to be accompanied by the phenomenon to be caused by the action of the Oyster. We have introduced this paragraph, that those who may be led to make the inquiry above alluded to may be able to find the minute animal agents constantly at work in the work of destruction, though their operations are feeble when compared with the ravages made by the Lamellibranchiate conchiferia in stone and wood, and by Limnoria in the latter substance.

This form is placed by Mr. G.B. Sowerby in that section of the Dimartya (with two adductor muscles) which is distinguished by having the branchiæ united medially; and the characteristic of Peneropus, as given by the same author, is to have the tube large, and the foot short and prominent behind.

**Generic Character.** - Animal oblong, rather thick,...
the borders of the mantle simple, slightly open before for the passage of a compressed and elongated foot; tubes two in number, rather long, united in a considerable portion of their length, and having their orifices radiated; branchial little and unequal; branchial appendages very small.

*Shell* solid, striated, or radiated, a little elongated, gaping posteriorly, more or less irregular, equilateral, very inequivalve, the anterior side being always shorter than the posterior side, which is generally slightly convex, and broken off in various forms. Umbones marked, nearly contiguous; hinge composed of slender, approximated, and neatly parallel teeth, two in the right valve, and three in the left, or three in each; posterior ligament a little elongated, in the most part external; muscular impressions oval, the posterior one the most rounded, both united by a pallial impression deeply excavated posteriorly.

Such is the character given by M. Rang, who apparently restricts the generic name to those species which excavate stones. &c. The shells, says M. Rang, "which compose this genus are lithophagous, and excavate in stones and madreporas cavities more or less proportioned to their form and to their volume, wherein they lodge themselves, and out of which when adult they cannot go, the aperture of the shell being too small to admit of their egress. They are without an epidermis, and generally of a dirty white."

M. de Blainville, who knew not the animal when he published his Malacologie, divides the genus into three sections: one called *Lithophaga*, by V. Rupellaria (genus Rupellaria, Fr. de Bell.), third, by V. lamellata (genus Petricha, Lam.); and he remarks that if the system of engraving of the species of excava-
tions which are observed on the surface of the shells are so well established as many genera as there are species. He adds that he has chosen Venerida from among the deno-
nimations proposed for some of these genera, because it well indicates that the species composing it are *Venerida of the rock*.

Mr. G. B. Sowerby (Genera, No. xxvii.) notices the diffi-
culty of ascertaining any distinguishing character between the Lamarckian *Venerida* and the *Venerida Pullastrea*, de-
casada, and others, except in the apparent habits of the animals and the manner of the shell's being perforated by Venerida. For this reason the *Venerida Pullastrea*, in chalk and limestone rocks, and that the *Venerida Pullastrea*, decasada, and several other species that resemble them in general form and appearance, are found buried in the sand; an apparently well-marked difference, and yet common to the same animals; we think however that we have evidence to prove that there exists in reality very little difference, and that the cavities in which Lamarck's *Venerida live are rather the natural conse-
quence of the action of the sea-water in conjunction with some of the excretions of the animal upon the chalk or limestone, than of any power of the animals themselves to pierce independently of such action; so that the difference is really only in the nature of the shore on which the very young shells are accidentally deposited, those which are thrown upon a sandy bottom burying themselves in the sand, and such as are deposited upon limestone or chalk producing a cavity in which they live. M. Sowerby then proposes to unite together under one appellation Lamarck's *Venerida* and those enclosed by Pernier's *Venerida*; the second is called *Pernierida*, *Malacida*, *Papilionacea*, *Adpera*, *Punctifera*, *Turgida*, *Litterata*, *Mucrovia*, *Textile*, *Texturata*, *Geographica*, *Rafitellana*, *deCasada*, *Pullastrea*, *aurea*, *viridescens*, and some others; and for the genus thus constituted he proposes the second of the *Venerida*, or *Venerida*, because it would convey the false idea that at least the greater number of the species were inhabitants of rocks. (*Venerida.*)

M. de Blainville and M. Rang, as we have above seen, named the very *genus Venerida* to the species that excavate shells.

Lamarck makes his *Lithophaga* consist of the genera

Sazicava, *Venerida*, and *Petricha*; and quotes the op-
nion of M. Fleuriou de Bellevue that boring shells gene-

* But see Gervaise, where a calcareous prot is recogised as being predicated; and the observations of Mr. Gervaise (Sazicava).
recognise the genus. They are, he adds, lithophagous or perforating shells which are very inequilateral, and which are not distinguished from Petricola, except in having three cardinal teeth, at least, in one valve.

"The greater part of the venerus," observes M. Deshayes, "is a genus of invertebrates, of which the family is known as the Petricola; they offer most frequently three cardinal teeth in one valve, two and rarely three in the other. When in some individuals one of these teeth is abortive, which often happens, the same species may be comprised in the two genera at once. The theory of the perforating Petricola are scarcely to be distinguished from those of the Petricola; only the mantle is a little more slit and the foot a little longer. In the Venerus these parts are different; and this proves that it is necessary to keep separated the two genera. M. de Blainville has thought it right to unite or approximate. We do not pretend to dispute, nevertheless, the analogy which is evidently exhibited between certain Venerus and the Venerus. We think that the Venerus only ought to be withdrawn from the genus and placed among the Venerus, because the animals are in fact similar; only some plunge themselves into hardened mud, whilst others live in the sand. And although they may enjoy the faculty of perforating stone, this would not be a sufficient reason to reject them from the Venerus, because we have seen that in a great number of genera belonging to very distant families there exist perforating species; thus we may well conceive that there may be perforating Venerus, but that does not hinder us from admitting the genus Venerus, the characters of which appear sufficient to us."

"The number of recent species of Venerus is not great; Lamark gives seven, and M. Deshayes adds one."

Geographical Distribution. The range of Venerus is wide; we have species on the coasts of England and France in the Mediterranean, in the South Sea, and in those of New Holland.

Habit. — See above: it is a littoral genus.

Example. Venerus perforatus.

Description. Shell sub-lanceolate, concentrically striated, running into strong wrinkles or ridges at the anterior side; sometimes, though very rarely, with very fine longitudinal striæ; colour light-brown; umbilicus very near to one end, small, and turns a little sideways; the longer side much truncated; hinge with three teeth in each valve, one of which is small, the others long, slender, and curving outwards; middle tooth a little bifid. Inside smooth, white, with generally some purple at the truncated end; margin plain; valves moderately concave. Length rarely exceeding 3-8ths of an inch, breadth more than 5-8ths.

Montagu, whose description this is, with very slight alteration, says, that with respect to shape it is difficult to fix any as a permanent character; it is, however, he adds, most frequently sub-lanceolate; sometimes nearly as long as it is broad, generally strait on the front margin, but in some instances deeply sinuous or indented.

Locality. — Coasts of England. Lamark records a very small and narrower, with sub-stratified lamellae, from the coasts of France, on the authority of M. Fleuriau de Bellevue.

Fossil Venerus.

M. Deshayes, in his tables (Lyell), makes the number of living species eight and of the fossil species (tertiary) six. He also quotes Venerus trus as being found both living and fossil (tertiary). He does not however note V. trus as fossil in the last edition of Lamark (1833), and only gives those two fossil species, V. globosa and V. striatula. M. de Blainville gives the number of fossil Venerus as five.

Petricola (Lam.; including Rapellaria, Fl. de Belli.).

Generic Character. — Animal oval, thick, especially at the upper part; mantle with simple borders which are a little dilated in front, where they form a rather small opening for the passage of a tongue-shaped and feeble foot; tube small, in the shape of cones, truncated at their summit, separated for a third of its length, and finely radiated at their orifices; branchi small.

Shell rather delicate, without an epidermis, white, radiated, oval, sub-trigonal, gaping anteriorly, more or less irregular, equivalve, inequilateral, the anterior side much shorter than the posterior, and not so thick as Lamark has described it; in this genus not very conspicuous; hinge composed of small cardinal teeth not diverging much, one of which at least is bident, to the number of two in one valve, and one in the other, or two in each; ligament external, posterior, short, and convex; muscular impressions oval, united by a pallial impression, which is often not very distinct, and has a very deep and rounded excavation posteriorly. (Rang.)

Mr. G. B. Sowerby observes (Genera, No. xv.) that the genus Petricola, as it stands at present, is composed of several shells which Lamark thought sufficiently different to form two genera, his Petricola and Rapellaria, the first with two cardinal teeth in one valve and one in the other, the second with two teeth in each valve; but Mr. Sowerby entirely agrees with Lamark in regarding them both as one. He is not so well satisfied with the species assigned by Lamark to this and some other genera which form the hollows in stone wherein they dwell; and he thinks that a great degree of similarity in external figure and appearance of the habit should have brought them nearer to the Pholadaria.

M. Deshayes, in a note to the last edition of Lamark, also of opinion that the latter did well in uniting Petricola and Venerus, which exhibit in fact so little difference, that the same species may be described under the one or the other genus, according to the state of development or preservation of the hinge. M. Deshayes goes further, and says that perhaps we shall be obliged hereafter to unite Petricola and Venerus, which in reality differ but little from each other. This resemblance, he adds, exists not only in the shells but also in the inhabiting animals. Mr. Garner appears to be of the same opinion, for in his "Aramical Classification of the Lamellibranchiata," we find the name Petricola applied to species which at present gives a very large extent, but no mention of Petricola.

Geographical Distribution. — Nearly coeval with that of Venerus, as far as the localities of that genus are recorded; and rather numerous on the coasts of the warmer waters of the world. (Cuming.) Also found on the Galapagos Islands. (Cuming.)

Habit. — Much the same with those of Venerus, in the same rock with which, and in its close neighbourhoold. Petricola is often found. Mr. G. B. Sowerby speaks of the cavities in which they live as being evidently the result of working, though on account of their form they cannot possibly have been produced by a rotary motion, for they are exactly the shape of the shell itself, and a very little larger. Petricola has been found at depths ranging from the surface or near it to a depth of one fathoms from five to six, and in sands of different granulations.

The species are not few. Lamark recorded eleven recent, two of which occur also in a fossil state; and two entirely fossil. M. Deshayes does not add to the number of recent species, but he expresses his belief that Petricola liguinula, one of Lamark's, ought to be arranged as Petricola; nor does he admit Mr. G. B. Sowerby's Petricola disgustus and subligulosa ("Genera") into the last edition of Lamark. The ten new recent species brought to England by Mr. Cuming, and described in the "Proceedings of the Zoological Society" for 1834, were probably not published when the 6th volume of the new edition of Lamark went to press. M. Deshayes however gives seven new species, P. elegans and corallinaphaga.

The difference of form is so great in every instance that we have thought it advisable to give, with permission, representations of the following species from the "Genera," by Mr. G. B. Sowerby, instead of the description and figure of one species.
Fossil Coralliophaga.

The species here figured as recent is also noted by Lamarck as fossil in Italy, under the name of *Cypricardia coralliophaga*.

N.B. With regard to this genus the reader should bear in mind that M. Deshayes, who, in the last edition of Lamarck, gives *Coralliophaga carditoides* of De Blainville as a synonym of *Cypricardia coralliophaga* of Lamarck, says, in a note to the succeeding species in Lamarck's 'System,' 'These three last species—*Cypricardia rostrata*, Lam., *C. coralliophaga*, and *C. modolariis*, the first of which M. Deshayes considers to be identical with its antecedent species *C. angulata*, Lam.—are found fossil in the great siliceous of France and England. Lamarck, who had not seen their hinge, referred them, from their form, to the genus *Cypricardia*; but I, more fortunately, possess separate valves, from the hinge of which I have cleared away the stony matter, and have remarked that these shells have all the characters of *Crassina*, the genus to which I refer them.'

Clotho. (Fossil only.)

**Generic Character.**—Animal unknown.

Shell oval, subregular, striated longitudinally, equivaleve, and subquateral; hinge formed of a bival tooth, curved back into a hook, rather longer in one valve than in the other; ligament external.

Example, Clotho Faujasii.

This, the only species that appears to be known, was described by Faujas in the shells of *Cypricardia*, which were still lying in the stone which they had eroded away alive. M. De Blainville and M. Rang both adopt the genus; but the former says that he had not observed it himself.

**Ungulina.**

**Generic Character.**—Animal unknown.

Shell longitudinal or transverse, irregular, not gaping, equivaleve, subquateral; umbones sufficiently developed and eroded; hinge formed by a cardinal tooth, which is short and subbilab in each valve, and an oblong marginal furrow or depression, divided into two parts by a contraction; ligament subintertal, and inserting itself in these depressions; muscular impressions elongated; palial impression not flexuous. (Rang.)

**Geographical Distribution.**—M. Rang notes the locality as unknown in his 'Manuel,' but the locality for *Ungulina*...
ina transversa, given in Lamarck (last edit.), is "the seas of Senegal," on the authority of the former. Mr. G. B. Sowerby has also received specimens from Senegal, and says he has good reason to believe that they are marine.

The latter naturalist observes upon this genus, that it was established by Daudin and adopted by Lamarck, but is at present almost unknown in this country. He states that in general form and appearance these shells very nearly resemble the Lucinidae, and gives it as his opinion that the two species recorded by Lamarck are only accidental varieties of the same.

M. Deshayes does not think that the characters of this genus were well appreciated by Lamarck, and remarks also on its close approximation to the Lucinidae. The ligament, he observes, is not internal, as Lamarck thought, but external, and received, as in many Lucinidae and Cythereidae, in a deeply flattened nympha, separated by a deep furrow, in which the most superficial part of this ligament inserts itself. He is also of opinion that the two species recorded by Lamarck (to which in the last edition he has not added) are varieties of one only.

Habit.—M. Deshayes states that observations recently made by M. Rang have shown that the Ungulinae are perforating shells, which, he says, he had already known from a fossil species in the environs of Bordeaux.

Example, Ungulina transversa.

M. Deshayes, in his tables, records one living species of Ungulina, but notices none in a fossil state. It will be seen above that he speaks of a fossil species from Bordeaux in the last edition of Lamarck.

Saxicava.

Generic Character.—Animal elongated, subcylindrical, having the mantle closed on all sides, prolonged backwards by a long tube, double internally, a little divided at its summit, and pierced inferiorly and anteriorly by a rounded orifice for the passage of a small, elongated, delicate, and perforated foot; mouth moderate, labial appendages small; branchial lamina for the most part free, and very unequal on the same side.

Shell thick, solid, covered with an epidermis, elongated, rounded in front, truncated as it were posteriorly, gaping, irregular, equiaxial, very inquadrated, the posterior side being much longer than the anterior; umbones not very distinct; hinge without teeth or with two separated tubercular more or less developed; ligament external; muscular impressions rounded and a little approximated, united by a small straight palial impression, very narrow and occupying the middle of the valve. (Rang, from Saxicava rugosa.)

Both M. de Blainville and M. Rang place the genus among the Pyloidea. The former is of opinion that it differs but little from Glycymeris.

Mr. G. B. Sowerby ('Genera,' No. xx.) includes in the genus Saxicava shells which, he observes, have had, in conformity with the various views of authors, at least six different generic names. He apologizes for the conclusion to which he has come in contradiction to so many great authors, but gives the following reasons for his opinion. He premises that it will not be disputed that Solen minutus of Cuvier and Montagu, Hiatella arctica of Daudin, Canina arctica of Bruguiere, and the Bysomya of Cuvier, are one and the same species; and that Leach's Pholodoras includes as distinct species of the same genus the Solen minutus of Montagu and the Mytilus rugosus of Lamarck. 'Now the former of these,' continues Mr. Sowerby, 'a Hiatella arctica of Lamarck and Turton, and the latter Saxicava rugosa of the same author: if all the six genera are reduced to one by Dr. Leach, whose authority is indisputably very great in such matters, we do not however propose to our readers to take it as conclusive, but will state that we possess, as Dr. Leach did, a series of specimens, the young ones of which are more regular in shape and more strongly sinuose than the older, and are to all intents and purposes Hiatella arctica, or Solen minutus, and the older specimens, losing the strongly-marked double row of spines, though always retaining indications of these, and assuming a much less regular form, become characteristic specimens of Saxicava rugosa; the hinge teeth of the younger specimens may be advanced as an argument against the identity of these shells: it is however well known that in many shells, particularly those that are irregular, the teeth become obsolete with age: thus if the hinge teeth, the general form of the shell, or the double row of spines, cannot be depended upon as generic distinctions, the Lamarckian genera Hiatella and Saxicava, and his Solen minutus, merge into one; to show that the shells described as distinct species under either of these generic names are identical is not important to the present work; it is therefore sufficient to observe, that in all irregular shells that are either found attached to or imbedded in rocks, coral, general form of the shells, &c., the general form cannot be taken as a character; and we believe the Mytilus precissus and several of the Saxicava described by Lamarck and Turton to be merely variations of C. rugosa, than which there is perhaps no shell more subject to variety of form.' To illustrate this exposition, Mr. G. B. Sowerby gives in his 'Genera' the following figures of Saxicava rugosa in different states of its existence.
We must consider the character of the byssus in the By-ssus as of little value; for the greater number of zoologi-gists have united this genus to the Saxicava. M. Deshayes then goes on to observe that Lamarck has comprised the same species under two very different genera, and that his Solen minutus and Hiatella arctica are the same shell; he is satisfied with one, only to compare the syno-nym. 'The fact is,' he adds, 'that the shell in question is not a Solen, and ought not to constitute a particular genus; for it belongs to the byssiferous Saxicava, as we have satisfied ourselves that it does by examination of the type.'

M. Deshayes further observes, in a note to Saxicava Aus-tralis, that all shells which, like those of this genus and the two following (Patricia and Venerupis) are crammed in their cement mixture, can easily be imposed upon the most acute observers, especially when the observa-tion is confined to a small number of individuals. This happened, he adds, to Lamarck, who has given to the same shell the names of Corbula Australis, Saxicava Australis, and which has prevailed on this subject. Lamarck recog-nised catalogue it would be necessary to unite these three species under one name, and arrange them among the Saxicava.

Geographical Distribution. — Very extensive. The Nor-thern Ocean, the Britannic seas, the Mediterranean, the South Sea, and the warmer coast of America, are recorded as localities.

Habits, &c. — M. G. B. Sowerby remarks that the Saxi-cava are frequently found upon the outside of oysters, pro-tected by their irregularities, and in clefts of rocks or crevices, or any creviced place, according to their habits. Lime-stone and hard clay. These, he adds, which themselves perforate the hollows in which they live are more regular than others.

Of species, the species of the crypts of Saxicina are not circular: hence M. de Bellevue and Mr. Oster, in this instance, believe them to be formed by the phosphoric acid secreted by the animal, and they suppose this animal to inhabit those rocks only which are composed of carbonate of lime, as found on the last surface of the earth. Garner declares to be not correct to his own knowledge.

M. G. B. Sowerby observes that the species of this genus are not numerous, and that they are not easy to distinguish from each other, as the reader may imagine from the confu-sion of species, one having another by which it is distinguished. M. Deshayes has added S. Guerini, from the Mediterranean, and S. rhomboides as recent species. Mr. G. B. Sowerby (Zool. Proc., 1834) has added three recent species collected and brought home by Mr. Cuming.

Lamarck, as we have above noticed, characterized no fossil Saxicina. M. Deshayes, in his tables, gives the number of recent species as 5; and 11 as the number of fossil species (tertiary). He notes two species, S. minuta and S. Pholidae, as both living and fossil (tertiary). We do not find S. minutula recorded at all in the last edition of Lamarck (1835), nor is the fossil designation added to S. Pholidae.

Of fossil species only five are recorded, unless we regard Saxicina rhomboidea (Desh.). As well only, which is the synonym of Donax rhomboidea, Pol., Selen minutula, Linn., and Hiatella arctica, Lam.) seem to forbid. There is no recent "habitat" given; but there can be little doubt that it is identical with the living and fossil S. minuta of the latter species.

The reader will bear in mind that the ravages of the stone-excavating genera noticed above, though considerable when they congregate in numbers, are superficial in comparison with other operations of Pholas and Lithodoma.

LITHOSTROTION. — This genus is not so rare, as might be adopted by Fleming, to some fossil 'madrepores,' as the laminiferous corals are commonly termed, which appear con fined to the older strata (especially mountain limestone).

The only species known is in Cratylusophyllium of Goislau by Professor Phillips (Geol. Mag.). It is probably by Blainville (Anatomie. p. 350).

LITHOTRIA. — [Cirripedia, vol. vii., p. 208.]

LITHOTOMY (from Xipho, a stome, and rípiss, to cut) Although urinny calculus may be extracted from the kidneys,

urethra, or bladder, the term lithotomy is restricted to the operation of cutting through the latter viscus for the purpose of removing one or more stones. From the complex nature of the fluid secreted by the kidneys, and the quantity of saline matters which it holds in solution, deposition not unfrequently take place in one or other of the cavities to which the urine has access. Hence solid concretions, or urinary calculi, may be met with in the kidneys, ureters, urinna, bladder, or urethra; but the majority of these concretions are believed to be formed originally in the kidneys. Now, if we suppose one of these calculi to have descended into the bladder, it is easy to imagine that it would there form a nucleus, around which the addition of new material would be constantly adding to itself. A priori reasoning would lead us to suppose such to be the result, and that the vitreous substance which takes place is proved by the fact that many calculi have for their nucleus foreign bodies that have accidentally entered the bladder, as bullets, splinters of metal, twist of bougie, &c. The number and size of calculi met with in the bladder differ as much as their form and composition vary, and their magnitude is generally in an inverse ratio to their number. A vesical calculus has been recorded in which 396 calculi, from the size of a pea to that of an olive, were found in the bladder after death; while, in a case described by the late Sir James Earle, a stone was extracted after twenty years, which weighed forty-four ounces, its long axis meas-uring sixteen inches, and the shortest diameter, that the average size of vesical calculi is about that of a walnut. Their form is mostly spherical, or egg-shaped, and sometimes flattened on two sides like an almond.

In general, they are either soft and friable, or very dense and hard, and can be quite smooth or besset with numerous tubercules. These circumstances, together with their loose or fixed position in the bladder, have considerable influence in determining the comparative duration of the patient's sufferings. Children and aged persons are more subject to the attacks than those in the vigour of life, and males than females; the inhabitants of temperate climates, than those of higher or lower latitudes.

S. Symptoms of Stone in the Bladder. — These consist in a palpable tumour which gradually swells, and in the extremity of the penis, with a frequent desire to micturate, and evacuate the bowels; the urine is voided with great pain, particularly the last drops, and while flowing in a full stream is liable to be suddenly arrested, from the stone falling against the vesical orifice of the bladder, and in much irritation is present, the urine on cooling becomes cloudy, and deposits a large quantity of opaque mucus, not infrequently mixed with blood, especially after any rough micturition. The stone may be of various size, according to the species of the stone and the smoothness or roughness of its surface, its fixed or loose position in the bladder, the quality of the urine, and the condition of the bladder. Instances are recorded of persons living with stone in the bladder for years without it causing them inconvenience from it, but these cases must be considered exceptional. In general the health sooner or later gives way, and, without recourse to one of the operations we are about to speak of, the patient lingers out a miserable existence till death terminates his sufferings. Nearly all the operations we have just described as belonging to stone in the bladder may however be simulated by other diseases of the bladder or neighbouring parts; a positive diagnosis therefore can only be made by auscultating the patient. This consists in introducing into the bladder, through the urethra, a metallic instrument called a sound, by means of which the stone can be plainly felt, and an audible noise perceived on striking it: till this be rendered evident no surgeon would be justified in undertaking the operation. It sometimes happens that stones are forced, by the violent contractions of the bladder during fits of the complaint, between the fasciculi of the muscular coat of this viscous, so as to become what is termed encysted; or they may become adherent to the wall of the bladder, so that the circumstances the surgeon would be best equipped for the operation.

Modes of performing Lithotomy. — To describe at length the various modes of operating for the stone, and the modifications which each method has undergone, would be too much space in a publication not strictly surgical; we shall therefore merely glance cursorily at those formerly in use, while we direct our attention more particularly to the method which is employed at the present day.
LIT

Of the Apparatus Minor, Cutting on the Gyrus, or Celsus's Method—This is the most antient kind of lito-
tomy, and has probably been practised from time imme-
orable; but Celsus having first described it, it has been
called Lithotomia Celsiana; and from the stone, pre-
viously fixed by the pressure of the fingers in the anus, being cut
directly on the stone, the name of lithotomia is the only
instrument used. The appellation of the lesser apparatus
was given to it by Marianus, in order to distinguish it from
a method which he described, called the apparatus major,
from the many instruments employed.
The apparatus minor is working in the urethra, &c. 1st. It is only
applicable to children under fourteen years of age. 2nd.
It is uncertain what parts are divided; this depending on
the degree of force employed in making the stone project
in the perineum. 3rd. The injury liable to be inflicted on
the parts, whose integrity is essential to the success of
the operation.
Apparatus Major, or Marianus Method, was founded on
erroneous principles, and in ignorance of the nature of
the parts to be operated on. It was supposed that
wounds of membranous parts would not heal, while their
distilation might be undertaken with impunity. In
conformity with these notions, the precept of Celsus, 'Ut
plaga paulo major quam calculus sit,' was neglected, and
the apparatus major was to be at least as possible
with the knife, and as much as possible with
instruments called dilators; but the parts thus
subjected to attempts at distillation are inelastic, and conse-
quently susceptible of that injury. The severity thus
rendered this one of the most fatal operations in surgery;
but notwithstanding this, it was practised for near 200
years, till Frie Jacques, in 1697, taught at Paris
the method in present use.
Marianus, who named from the incision into the
bladder being made above the pubes, was first practised
in Paris in 1475, by Colot, as an experiment on a criminal, by
permission of Louis XI.; but the earliest published account
of this mode of operating was in 1556, by Pierre
France. This operation was much used in England in the
sixteenth century, but the stone is too large to be extracted from the perineum, or
where there is disease of the urethra and prostate gland;
but there are several objections to it, and it is now entirely
abandoned.
Operation through the Rectum.—This method was first
suggested in a work published in the sixteenth century;
but the proposal never received much attention till the year
1816, when it was revived by M. Sanson, of Paris, and
can be exhibited to him, and the favourable results
which attended the performance of this operation prevented its being generally tried or adopted,
and no one of the present day ever thinks of performing it.
Lateral Operation—so called from the prostate gland
and urethra being cut, and avoiding the rectum, is that adopted at the present
day. It was first practised by Pierre Franco, a surgeon at
Tournières, but he never established the method as a per-
nanent in the practice of surgery; this was left for
Frère Jacques, a priest, who, in 1697, came to Paris in order to
make known this method, which he employed with great
success at various places. Although it appears that he was
not quite so successful as he had led the world to believe,
the superiority of his mode of operating was immediately
perceived and recognised, and, with slight modifications,
was adopted by most of the surgeons of that period. Hitherto
the Marian section had used: the advantages of an
operation by which a free opening was made into the bladder,
over which the incision was immediately made.

Lithotomy in Women.—From the shortness, largeness
and very dilatable nature of the female urethra, the surgeon
seldom called upon to perform the operation in women.
The formation of calculi is perhaps not so common in woman
than in men; but from the anatomical circumstances just
alluded to, stones of considerable magnitude have been
voided spontaneously. This fact has suggested the plan
of mechanically dilating the urethra, and thus extracting them
without the employment of any cutting instruments;
but where the stone is very large, the degree of distillation
necessary for its extraction is liable to produce paralysis of
the part, and infection of urine ever after. To avoid these
complications, a dilatation is immediately made, and the operation
is simple. A strict stuff, or director, is
introduced through the meatus urinaris; the groove is turned
obliquely downwards and outwards, in a direction parallel
to the ramus of the left is pubis; and the knife is thus con-
ducted in the direction of the passage, through the whole extent of the passage and neck of
the bladder.

Treatment after the Operation.—The dangers to be
looked for after lithotomy are, inflammation of
the bladder and peritoneum; infection of stones
into the cellular tissue of the perineum and parts
adjacent; and hemorrhage. To prevent the dangers that would arise
from inflammation, the patient should be kept perfectly
quiet, and on a low regimen; but supposing it to
have set in, the most prompt and energetic measures must be taken.
LITHOTOMY

are present, we imagine few could be found who would not give it the preference over the operation of lithotomy.

LITHOTOMY, a last truce of country which has formed some important provinces of the Russian empire, but which once constituted an independent and powerful state, until it was united to Poland by the accession of its reigning dynasty to the throne of that country. Its history is very remarkable, and presents a most extraordinary instance of a nation which, after having remained for centuries in a state of utter insignificance, assumed, by its conquests and wise policy, in a comparatively short time, a station which rendered it for about a century the most formidable power of the north.

The early history of Lithuania is involved in much obscurity, and the several traditions contained in its chronicles are exceedingly confused. A current tradition that a Roman colonia had settled on the shores of the Baltic has been shown to be a mere fable. There are some very ingenious conjectures that the Heruli, who destroyed the Western empire under Odoacer, were inhabitants of Lithuania, and that after their expulsion from Italy they returned to this country, brought with them those words, resembling the Latin, which abound in the Lithuanian language.

The first mention of Lithuania occurs in the chronicle of Quedlinburg, a.d. 1089. (Naruszewicz, Hist. of Poland, vol. i. p. 145.) From this period it appears to appear more frequently in Russian chronicles, which speak of the Lithuanians as a poor and savage nation, some tribes of which were compelled by the bordering Russian princes to pay a tribute, consisting of the bark of birch trees for making fences and hedges, and of the leaves of various trees, and of brooms. The rudeness and poverty of the nation must have been very great if their conquerors were satisfied with such sylvan produce. In the twelfth century they are well known, particularly by their wars with the German knights.

Towards the year 1200, Albert, bishop of Riga, founded the order of the Knights Sword-bearers (Ensiferi), in order to conquer the pagans who inhabited the shores of the Baltic, at the head of whom the half-savage barbarians were soon subdued by the valour and military skill of those warrior monks, and reduced to a state of the most oppressive bondage. Not long after, about 1220, Conrad, duke of Mazovia, being unable to resist the predatory attacks of the Prussians, and the Lithuanians, called to his assistance the Knights of St. John of Jerusalem, and granted them a large tract of land, with many castles. These knights did the same in Prussia that the Sword-bearers had done in Lithuania; they acquired such strength from their union, which was effected in 1238, and became most formidable enemies to their neighbours, particularly to the converted Lithuanians. These petty soldiers were certainly the bravest, and most armed of the nation; and their numbers were continually recruited by German adventurers, who flocked to their standard in order to obtain the remission of their sins and a grant of land wrested from the native idolaters. Such were the enemies with whom the Lithuanians had to contend, they themselves being ignorant of the science of war, almost destitute of defensive armour, and having for the most part no other weapons than spears, clubs, and arrows. In spite of these disadvantages they not only resisted the German invaders, but possessed of the Russian principalities to which they had been obliged to pay tribute. The decline of the powerful Russian principality of Halicz, by the death of Prince Roman, who was defeated and killed by the Poles in the battle of Zanzhoch, 1323, delivered the Lithuanians from a formidable enemy, and their predatory incursions began to be more dangerous to the Polish and Russian principalities: some of the latter fell into the hands of Lithuanian chiefs, who generally sought to incorporate them under the crown of Lithuania (as of the Eastern Church) of their new subjects, although the bulk of the Lithuanian nation remained faithful to their idols.

Ryngold was the first Lithuanian ruler who, after having united under his dominion all the principalities of that nation, assumed the title of Grand-Duke of Lithuania about 1235. His son Mindog, having received from the Pope the royal diadem, embraced Christianity, and was crowned at Novogrodek in 1252 (formerly the capital, now an insigni-
Lithuania, but elective in Poland, after their accession to the crown of the latter country, gave up the government. Lithuania to a prince of their family, but still retained the sovereignty. The most celebrated of those princes was Vitold (1436). A kind of union of the two countries was ef- fected at the diet of Lithuania in 1550, composed of senators and deputies of both nations. By this transaction the rights of the Polish nobles were extended to those of Lithuania, whose throne became elective like that of Poland. The diets of the two countries were held in common, but the laws, finance, and administration were separated. This state of things continued till the fall of Poland.

We have already said that Lithuania extended under the reign of Olgerd as far as the banks of the Don and the shores of the Black Sea. It lost a great part of its do- main when the Swazis, who were the vassals of Lithuania, revolted and grand-duke of Lithuania, and on several subsequent occasions. But these events belong to the history of Poland, of which Lithuania then formed an integral part. At the time of the division of Lithuania, in 1569, Lithuania was divided into the following palatines or counties: Vilna, Troki, Novogrodsk, Brest, Vitebsk, Polock, Mstislaw, and the duchy of Samogitia.

The territory which constituted the government duchy of Lithuania, in 1569, was already at first almost as large as the Russian governments of 1828. It extended over the northern part of Russia, and was to extend their control over those parts which became now a portion of the Lithuanian empire.

Two nations, of a different origin and creed, thus became blended together, and the Russian Christians were always considered as the vassals of Lithuania. Russia did not have yet the position of a grand-duchess of Lithuania. The Russian became the official language of Lithuania, and continued so till the middle of the seventeenth century, when it was superseded by the Polish language.

The government of Lithuania was in some degree feudal: each province was given in fief, generally to a prince of the reigning family. There was no however anything like the regular feudal organization of western Europe. After its union with Poland, Lithuania was governed by the same forms as that country.

Ghedymin was killed in 1328, at the siege of the fortress of the German knights. He divided his empire among his several sons, but after some contention, one of them, called Olgerd, obtained the sovereignty of Lithuania. He was a worthy successor to his glorious father: he defeated the Tartars, and compelled those of Crimea to become his vassals, having extended the limits of Lithuania to the banks of the Don and to the shores of the Black Sea. When Olgerd was murdered, his son Vitold ascended the throne, and covered himself with glory before the gates of Moscow in the years 1369, 1370, and 1373. He died in 1381, in the Christian community of the orthodox church, which he embraced on his death-bed, at the solicitation of his mother, who was a pious princess of Tver. It is even supposed that he had secretly been a Christian during his lifetime, and had early become a convert to its doctrines.

Olgerd's son and successor, Yaguellon, married, in 1385, Hedvige of Anjou, queen of Poland, and, having been baptized, ascended the throne of that country. From that time Lithuania was united with Poland.

Yaguellon, having become a Christian, strenuously exerted himself to convert his pagan subjects. The attachment of these idolaters to their religion seems to have been at that time very weak, and Yaguellon had no great difficulty in accomplishing his task. It is asserted by the chronicles that the promise of a new white woolen coat was sufficient to induce the pagan prisoners to desert their idols and to approach the baptismal font.

Yaguellon himself translated for the use of his subjects the Creed and the Lord's Prayer into the Lithuanian language. He introduced for the new converts to retain for a long time many heathen customs. The Catholic church, which was persecuted in our days, and which the common people preserve many customs evidently derived from their idolatrous forefathers. Although by the accession of Yaguellon to the throne of Poland the two countries became one, it is not supposed that the privileges of the Lithuanian congregation, who were hereditary sovereigns independently of

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The Polish-Lithuanian, or Samogitian language, which is spoken in the north-western part of Lithuania, and particularly in the province of Samogitia, differs from the Russian dialect in being more free from the admixture of German words, and it is certainly the purest of all the dialects, as the population by which it is spoken resisted the German invasion. The Polish language, which, as we have seen, became the official language of the country, from the fourteenth century, and the subsequent influence of the Polish, have introduced many words derived from both these languages. There is said that a Protestant Bible translated by Chilik, published at London in 1600, and many other works of a religious character.

The second principal dialect of the Lithuanian is the Lettenian, or the Livonian, which is sometimes called the Prussian. It is the greatest of the four dialects, in the Grand Duchy of Courland, and a part of the government of Vitebsk, which was formerly called Polish Livonia. It differs from the other Lithuanian dialects in having an admixture of Finnish words, which is peculiar to this dialect. It is subdivided into five or six varieties, and the number of persons who speak it is considerable.

LITTÚP, a genus of pelecypodiate mollusks, established by M. Rang, with the following characters:

1. Animal, transparent, spiral, furnished with a rather short and narrow foot, and a head provided with elongated conical tentacles, with the eyes at their external base.

2. Shell not thick, bony, with a slight epidermis, slightly transparent; conoid; the whorls of the spire rather rounded, the last whorl larger than all the others put together, the anterior whorls generally rounded, the posterior whorls being defined by a single seam, which is rounded, arched, and a little truncated anteriorly. No operculum.

M. Rang places this form between Janthina and Phasianella; and observes that the habits of this pelecypod mollusk are very curious. He states that he had many years previously observed the shell, but had not permitted him to study the animal. M. Bellanger, captain in the French navy, was the first who recognised it, but that gentleman unfortunately had not studied its external organisation; he observed however, that the animal, when living upon floating plants, quits them sometimes, but holds itself fixed by a thread. M. Rang dissected some specimens preserved in spirit of wine given to him by that officer, and observed some small glistening masses which appeared to M. Rang to be attached to the foot, and which were easily drawn out to considerable length. M. Rang looked in vain for an operculum, the absence of which establishes a great difference between this genus and Phasianella, and has described two species, as regards the shell, but with apparently similar animals.

Geographical Distribution.—The ocean.

M. Rang observes that the genus Litopia, like some others, proves that it is not possible to establish divisions founded on the presence or absence of an operculum.

* See Linn. Trans. Vol. xiii., p. 800.

Shell of Litopia, magn. 4.
LIT

powder; this is then mixed with urine and lime, and in a few days the blue colour is developed. The litmus is imported in small cubical cakes of dusky-blue colour, which are light and easily reducible to powder. The colouring matter, which is supposed to be erythrin, existing also in archil, is soluble both in water and spirit of wine, and is of a beautiful tint.

Litmus is used as a chemical test for detecting the presence of acids, by which it is turned red, and the blue is restored by alkalis. When slightly reduced with Conc. niter, it is used to detect alkaline earths when employed either as a tincture, or more commonly paper stained blue with it is used. The tincture is sometimes, but improperly, called tincture of turnsole, a name which was given to the colour in 1712 by Sir G. C. S. Source a source of tests as a test of acids; it was nevertheless found by Mr. Watt that it detected the presence of sulphuric acid diluted with 100,000 times its weight of water.

By exposure to the sun's rays tincture of litmus becomes red, and there exists between its colouring matter and that of indigo a definite degree of analogy; both for example are capable of being deprived of oxygen, and when thus deoxidized lose their blue colour, which is restored by exposure to the air or other means of reoxidation. The former action is well known to produce indigo, and that of deoxidize indigo, produce the same effect upon litmus.

LITRE, the French standard measure of capacity in the metric system. It is a cube decimetre, or a cube whose sides are each one decimetre, and which contains 1.05766 cubic feet, or £1.70032 imperial gallons. The litre is therefore a little less than our quart: more precisely, it is $\frac{200095687}{1000000000}$ of a gallon.

LITTLEN, THOMAS, was the eldest son of Thomas Westcote, of the county of Devon, Esq., by Elizabeth, the daughter and sole heiress of Thomas Litleton, or Littleton, Littleton, or Littletton (the last being the mode in which he himself appears to have written it: see the extract from his will below), of Frayley, in Worcestershire, whose surname and arms he took. He was educated at one of the universities, and thence removed to the Inner Temple, where in due time he became one of the readers of that Society.

Sir Edward Coke mentions his reading on the statute He 2. at Byrde' s donation to the court of Common Pleas, and rode the Northamptonshire circuit. About the same time he obtained a writ, directed to the commissioners of the customs for the ports of London, Bristol, and Kingston-upon-Hull, for the annual payment of 110 marks, to support his hill-walk, in the county of Worcestershire.

Collins Peere, who gives as his reference, Pat. 36, Hen. 6, p. 1, m. 7.) In 1462 (2 Edward IV.) he received the great ward-

Littleton died at Framley on the 23rd August, 1411, aged about sixty, and was buried in Worcester cathedral, where his tomb bore the following inscription:—"Hic jacet corpus Thome Littelton de Framley, Militia de Balneo, et Deputatus de Civitate de Londini, anno Dom. 1411, qui obiit 23 Augusti, Anno Dom. MCCCCLXXXIX." In Collins' 'Peere' there is a copy of Sir Thomas Littelton's will, 'faithfully copied from the original remaining in the Prerogative Office.' It contains some curious particulars. In the will he only makes room for the following extract from its commencement:

'In the name of God, Amen. I, Thomas Littelton, Knight, son of King's justice of the common place, make my testament, and ordain my will, in the manner and form that followeth. First, I bequeath my soul to Almighty God, Father, Sonne, and Holy Ghost, three Persons and one God, and our Lorde, maker of heaven and earth, and of all the world; and to our most blessed Lady and Virgin, the mother of our Saviour Jesus Christ, her Sonne, and of all the creatures that are in heaven, and to Saint Christopher, the which our said Lorde did truste to bear on his shoulder, and to all the saints of heaven; and my body to be buried in the tomb I let make me in the chappell of the Romeriz church of the monestaries of our said blessed lady at Worces-

ter, under an image of St. Christopher, in case if I die in Worcestershire. Also, I wulle, and specially desire, that immediately after my decease, my executors finde three or four of the better men in Worcestershire, or else in the other parts of the county of Warwick, to pray a perpetual mass for my soul every saterday, by himself, sing one trental, and that ever such preest have right sufficiently for his labor; also, that my executors finde another gode preest for to singe for my sole fouye masses, &c. He then makes a provision for his children, and in case his will be not fulfilled, and in certain mansions and lordships should 'make some estates' unto his sons Richard and Thomas Littelton.

He appointed his three sons and Sir John Goldsmere, parson of Bromsgrove, Sir Robert Cank, parson of Evesham, and Sir John Ormesby, as executors, at this district beginning at Framley, 22nd August, 1481, being, as appears from the date of his death on his monument already quoted, the day preceding that of his death.

Sir Edward Coke has given it as his opinion that Littelton's Corporation was purchased by him when he was judge, after the reign of King Edward IV., but that it was not printed during his life; that the first impression was at Rouen, in France, by William de Taillier, ad instantiam Richardi Fisnom, the printer of Henry VIII., and that it was first printed in London in 1548. It was again printed in London in the year 1559, or by Robert Redmayne again by Robert Redmayne, and that the nineteenth year of the reign of Henry VIII. It is observed that, to determine with certainty when the Rohan or Rouen edition was published, is almost impossible; but that from the date above mentioned it may be collected, not only that the Rohan impression is older than the year 1528, but also what occurs in the beginning and end of them, that there had been other impressions of the book in question. However, when the book was first translated, it settled with accuracy when the first edition of Littelton's work was printed.

Littleton's work on English tenures is written in Norman French, divided into three books, and addressed to his son, and to the Bishop of London. It is a learned work, divided into twelve books, and addresses itself to the better understanding of certain chapters of the "Antient Book of Tenures." And after the Table of Contents of the book, he thus commences:—

'Epiloge.

'And know, my son, that I would not have thee believe—'

And afterwards, I would have men to believe—'

'That all which men have in these books are laws, I will not press any to be taken upon me. But of those things that are not law inquire and learn of my wise counsellors.'
or Constantinopolitan church three Liturgies are in use, those of Basil, Chrysostom, and the Liturgy of the Pres- 
byters. In every church the Liturgy is divided into several 
books or offices, as the breviary, the cerimoniale, 
or office peculiar to the pope; the missal, or office of the 
mass; the pontifical, directing the functions of the bishops, 
or the rule, or pastoral, for the guidance of the simple 
priests. The Spanish is better known by the name of the 
Mozarabic Liturgy. The Ambrosian Liturgy is that more 
particularly in use in the church of Milan. In France the 
church of St. Martin at Tours had a breviary of its own, 
which was not the Roman nor that of Tours; and the 
same difference obtains at St. Quintin and in other 
Gallican churches.

At the Reformation all the Protestant churches on the 
Continent, without a single exception, introduced Liturgies 
for the more uniform celebration of divine service.

Previous to the Reformation of the Church of England 
the service was performed in Latin, and different Liturgies 
were used with us, also, in different parts of the kingdom. 
The cathedrals of York, Lincoln, Hereford, and Bangor, 
were so called, doth but obscure it. (vol. i., p. 21.) Coke's 
'Commentary on Littleton' was no other than a sort of 
common-place book kept by Coke as a manual, in which he 
jotted down all his laws and references to law as they oc- 
curred.

'To put this Commentary, or rather common-place book, 
into a student's hands to read as an institutional or ele- 
mentary book is evidently futile; and the doing so is pro- ably the cause why so many students of English law break 
down at the very threshold of their career. The effect is, 
as a general rule, to confine the student to the common- 
place, and to turn a ready reader of a dictionary, who never 
acquainted with the language: and therefore with him we may conclude that 'cer- 
tainly it is an error for a student to peruse such. (North's 
'Life of Lord-Keeper Guilford,' vol. i., p. 21.) It is much 
better that the student should have a copy of the sec- 
dary books in short, very much as he would read 
Eucel, if he wishes to master it. (The authorities used in this article are chiefly Coke's 
Preface to his Commentary on Littleton; the article 'Lit- 
urgy' in the Travels of the three editors; the Preface to the thirteenth edition of Sir Edward Coke's 
'Commentary'; and Collins's 'Porridge,' vol. vii., article 'Lord 
Littleton.')

LITORTI'NA. [TURINAE.] A town of Piedmont, nearly in the 
region of focal cephalopoda, confined to the 
area of the Silurian and older systems. The shell is partly 
straight and partly convoluted, nearly as in spirula, Lam.

LITURGY (from the Greek λειτουργία, which originally 
meant service of the gods, or official mode in which the 
deity was approached. Consists of public acts or duties 
expected by the worshipper, like the Christian Confession, 
and more particularly the Office of Common 
Prayer used in our own or any other church. In the Greek 
P. C. No 558.

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LITUS, a name given to a spiral thus described:—Let a variable circular sector always have its centre at one fixed point, and one of its terminal radii in a given direction. Let the area of the sector always remain the same; then the extremity of the other terminal radius describes the LITUS, a crooked staff resembling a crozier, used by the augurs among the ancient Romans in making their observations on the heavens, hence called the AURIGAL LITUS, Dr. E. D. Clarke asserts that there was an older litus, called the Regal or Quinual LITUS, which the ancient kings of Italy held as a sceptre in their hands long before the time of Romulus or the institution of the Augurate, particularly mentioned by Donatus and Servius in their Commentaries upon Virgil. The etymology of the name is uncertain.

(Plinius Lexicon, in voce; Clarke’s Observations on the Litus of the Antient Romans, in the Archaeol., vol. xix., p. 356-404.)

LITURGANDUS, or LITURPANDUS, was a deacon at Pavia in the year 946, when Berengarius, marquis of Ivrea and reignet of the kingdom of Italy, sent him as his ambassador to Constantineople, where he learned the Greek language. After his return he was made bishop of Cremona. Otho I, emperor and king of Italy, sent him in 943 on a mission to Pope John XIL; and in the following year Liturprand accompanied Otho to the council held at Rome, which deposed John and chose Leo VIII. in his place. On that occasion he firmly repudiated the objections of the emperor, who did not understand Latin, as he says in his Chronicle. In 968 Otho sent him as ambassador to Nicephorus Phocas, emperor or usurper of Constantineople, who treated him very severely, and kept him as a kind of prisoner, telling him of the state and condition of the emperor, in no flattering colours. The work is very curious. Another work has been attributed to Liturprand, namely, De Pontificium Romanorum Vita, but his authorship of it is very doubtful. The best edition of the works of Litur- prand, A. M., is that of 1797. A. and R. v., which is the most extant, with very copious notes, by Jerome de la Huguenet and L. Ramirez de Prado, with a dissertation at the end on the Diphytalon Toletanum.

LIV/A/DIA. ['Germa.']

LIVE STOCK. The animals necessary for the stocking and cultivation of a farm, and those which are kept on it for profit, or for the sake of their dung, are called the live stock of the farm, in contradistinction to the dead stock, which consists of the implements of husbandry and the produce made from the dead stock. The live stock on a farm must vary according to circumstances. The number of horses or oxen kept for the cultivation of the land and other farming operations should be suitably proportioned to the land to be done. If there are too few, the operations will be performed in their proper time, and the crops will suffer in consequence. If there are too many, the surplus beyond what is strictly required is maintained out of the profits of the farm. To determine the proper number of the farm, the greatest profit is one of the most important problems which a farmer has to solve: what may be very profitable in one case may be the reverse in another; and, as a general maxim, it may be laid down, that the fewer mouths he has to feed the better. The number of horses or oxen he is likely to incur. But this rule admits of many exceptions. It is of great importance, in taking a farm, to calculate the extent of the arable land, so that it can be properly cultivated by a certain number of pairs of horses or oxen. It is an old measure of land to divide it into so many ploughs, that is, so many portions which can be tilled with one plough each. When there are several of these, it is useful to have an odd horse over the usual number required for two or three ploughs, to relieve the others occasionally. The same rule would apply to any other plantation; the whole farm will be done in proportion to the capacity of the farm, and the relief which occasional rest will give to the other horses. The other part of the live stock kept on a farm must depend on various circumstances. Where there is good driving land, the profit on the improvement of the live stock, or their produce, is evident and easily ascertained. But where animals are kept upon artificial food or fattened stalls, it is often a difficult question to answer, whether there is a profit on their keeps or not. In most cases the manure which is produced and litter afforded for them is sufficient to recruit the land, at a reasonable price.
it might often be more advantageous to sell off all the hay and straw of a farm, and to keep only the cattle necessary to till the ground or supply the home consumption, but can only be the case in the immediate neighbourhood of large towns.

In the country at a greater distance no manure can be purchased; it must consequently be produced on the farm; and for this purpose live stock must be kept, even on the least advantage, for the purpose of furnishing manure, and is therefore an important part of husbandry. The object of the farmer is principally to obtain manure for his land, and if he can do this, and at the same time gain something on the stock by which it is obtained, he greatly increases his profit.

A little more skill has been displayed in the selection of profitable stock than in the improvement of tillage. Some men have made great profits by improving the breed of cattle and sheep, by selecting the animals which will fatten most readily, and by feeding them economically. It requires more knowledge of what stock is most profitable on different kinds of land and in various situations. Unless very minute accounts are kept, the result can never be exactly known. It is not always the beast which brings most money in the market that has been most profitable; and many an animal which has been praised and admired has caused a heavy loss to the feeder. Unless a man breeds the animals which are to be fattened, he must frequently buy and sell; and an accurate knowledge of the qualities of live stock and their value is indispensable. If the farmer may be the salesman he may employ, he cannot expect him to feel the same interest in a purchase or sale, for which he is paid his commission, as the person whose profit or loss depends on a judicious selection and a good bargain. Every farmer must therefore not only have an accurate knowledge of stock, and carefully attend all markets within his reach to watch the fluctuation in the prices. It will generally be found that the principal profit in feeding stock as the manure, and to this the greatest attention should be directed. A little more skill will often greatly improve both the quantity and quality of this indispensable substance, and make all the difference between a loss and a profit in the keeping of stock. [Manure.]

LIVER.

The liver is the secreting organ or gland by which bile is formed. Its existence has been traced very low in the scale of animals; and parts supposed to have an analogous function have been found in insects, but their nature is at present a disputed question. The differences in regard to size, form, and colour, which the liver presents, are of great importance.

In man the liver is a large solid viscous, of a reddish brown or mottled red and yellow colour, situated immediately beneath the diaphragm, in the right hypochondriac region of the abdomen. [Anatom.] When enlarged, it can be felt by the hand applied below the ribs on the right side. It is flattened in the vertical direction, thinner at its anterior than at its posterior border, and is outlined when viewed from above, is irregularly concave, lies above and in contact with the stomach, large intestine, and right kidney, is attached to it the gall-bladder, and presents two deep fissures, which divide it into several compartments, termed by anatomists lobes. Of the fissures, one running from before backwards (the longitudinal fissure) transmitted, during uterine life, the vessel which conveyed the blood from the placenta to the heart of the foetus; it afterwards contains merely the cord-like remains of that vessel, now impervious in the greater part of its extent. The second fissure, in the under surface of the liver, is called the transverse fissure, since it crosses the former at right angles, living however chiefly to its right side; it serves to allow the exit of the bile-duets.

Like other viscera of the abdomen, the liver receives an investment from the lining membrane of that cavity, the peritoneum, which, being reflected from it at different points, forms broad bands connecting the liver with surrounding parts.

The substance of glands generally is constituted of minute ramified or convoluted canals, closed at their radicle extremity, and communicating only with the principal duct, by which the secretion is conveyed away, and of a great number of blood-vessels which surround the above-mentioned canals in their whole extent, and afford the component matters of the secretion; these matters find their way into the intercommunicating, the glandular canals, not by distinct openings from the blood-vessels, but by transudation through their walls. In the human subject all other glands than the liver receive one kind of blood only, namely, arterial blood, from which the components of the secretion are derived, and the organ at the same time nourished, and the only veins are those which convey away the secretion. But in the liver it is rendered venous by the changes it undergoes in the gland. But the liver, like the lungs in man and the kidneys also in some animals, receives two kinds of blood—arterial blood to general nourishment, and venous for the nourishment of the gland, and a venous secretion of greater quantity, from which the bile is principally formed. The vessel which brings the arterial blood, the hepatic artery, is small, and comes off the aorta (Aorta), together with the portal vein, from the general supplies of the spleen, duodenum, and omentum. The venous blood is brought by a large vessel resulting from the union of all the veins returning the blood from the spleen, omentum, pancreas, and gall-bladder, and from the viscera directly engaged in the function of digestion, namely, the stomach and intestines. The hepatic artery and portal vein enter the liver at the transverse fissure or furrow of its inferior surface, where the bile-duets issue, and ramify together with the branches of that duct through the substance of the organ. After the vasa efferentia of the liver have been formed, the secretion of the bile, have been derived from the blood of the two sets of vessels already mentioned, it is returned to the general circulation by a third set, the hepatic veins, which issue from the liver at its posterior border, and immediately enter the vena cava. The ultimate arrangement of these different blood-vessels in the liver is very peculiar: it was discovered a few years since by Mr. Kiernan. When the substance of the liver is torn, it is seen to be composed of innumerable granules of a more or less globular form; each of these granules is the element of a liver. They are connected most intimately with the branches of the hepatic vein, a small twig of which is contained in the interior of each, while on their exterior surface and in their interstices run branches of the portal vein, hepatic artery, and bile-duets. The by the hepatic granule or lobule is constituted in part of a close network of capillary blood-vessels, which communicate on the exterior with the small branches of the portal and on the interior the twig of the hepatic vein. The blood is conveyed by the hepatic vein to the portal vein, which is the capillary network of each granule or lobule of the liver, and after yielding in it the constituents of the bile, is received into the branches of the hepatic vein, whence it is conveyed to the vena cava. The branches of the hepatic artery soon become very minute on the exterior of the lobules, and few can be traced into their interior; it is probable that, after having nourished the coats of the vessels and ducts, and other tissues of the liver, the blood of the hepatic artery is returned into the capillaries, and performed by the ultimate division of the portal vein, and contributes with the blood of that vein to yield the constituents of the bile.

The form and disposition, in the liver, of the primitive radicles of the secreting canals or bile-duets, have not been determined. In all other known glands the radicles of the ducts commence by isolated closed extremities; but this has not been demonstrated in the case of the liver, and some anatomists have imagined that the ducts arise by a network of reticular pleats in the interior of each granule or lobule; however this may be, we must suppose that they penetrate into the interior of the lobules, so as to be brought into contact with the delicate reticular terminations of the portal vein, in order to receive the components of the bile; and the blood of the bile being not much congested with blood, is most probably owing to the presence of minute biliary canals filled with their secretion.

The biliary canals reduced in number by successive reduction to two tubes, one from the right, the other from the left lobe of the liver, issue at the transverse fissure of its under surface, there soon unite, and form one main trunk, the hepatic duct. After running a short distance together with the portal vein, hepatic vessels, and nerves, in a quantity of dense cellular tissue enclosed within the
fold of the peritoneum that connects the liver with the stomach, the lesser omentum [Parsaeum], the hepatic duct meets and unites with the duct of the gall-bladder, or cystic duct. The tube resulting from the junction of the hepatic with the cystic duct is called the ductus communis choledochus: it is about three and a half inches in length, and is continuous with the duct of the pancreas, into the portion of the intestine named duodenum, at the distance of a few inches from the stomach.

The gall-bladder is a peritoneal membranous sac, lodged in a shallow depression at the inferior surface of the liver, which lies in an oblique position as we have seen in the etiologic history of the ductus cysticus. As the gall-bladder is consequently obliged to regurgitate through the cystic duct into the gall-bladder, which serves as a temporary reservoir for the secretion, discharging it again when the presence of bile is required in the intestine and the digestive process. At the neck of the gall-bladder, close to its termination in the cystic duct, the lining membrane forms a spiral fold, which seems destined to retard the flow of the bile from the reservoir. The gall-bladder is not constantly present. Animals in which it does not exist are the horse and elephant.

The function of the liver is manifold and important. The analysis of the fluid which secretes shows that it frees the blood from excess of carbonic acid and hydrogen; and by this means, and probably also by effecting some change in the matters which have been added to the blood during its circulation through the viscera of the abdomen, the liver assists in preparing that fluid for the nourishment of the tissues. The bile secreted by the liver contains a viscid, dilutant, and alkaline fluid, derived from the food, and of some of its ingredients, serve as a natural stimulus of the peristaltic action of the intestines.

Development of the Liver. The liver, like other glands, is developed in the embryo as a diverticulum, or small sac protruded from the intestinal canal. The walls of this diverticulum become thickened, and in them are formed the secreting canals and other component parts of the organ, which after its separation from the liver, passes as a diverticulum and forms the excretory duct. Subsequently the gall-bladder is in its turn developed as a diverticulum from this duct.

LIVER, DISEASES OF. The liver is subject to all those general morbid changes which, depending on disorders of the blood vessels, modification of the nutritive process, or alterations in the blood itself, may affect most organized parts of the body: such as inflammation (hepatitis), acute and chronic; hypertrophy and atrophy; induration and softenings; and the different kinds of tumors or transformation of tissue, carcinoma, or cancer, medullary sarcoma, fungus hematomas, melanosis, and serous tubercle. It is occasionally infested by parasitic animals (hydatids), which may likewise affect other parts of the body.

But the liver is also liable to other diseases which appertain to it specially, and are connected with its function — secretion. The chemical changes which give rise to the formation of bile in the liver may be so deranged, that one or all of the glands of the liver may become the seat of inflammation, or vitiated in quality, and such disorder of the secreting process may manifest itself in several ways: the imperfectly formed fluid passing into the intestines may cause irritation there, and consequently diarrhea; or being absorbed into the blood, may produce jaundice and its concomitant symptoms; or some of the ingredients of the bile may coalesce into solid masses in the ducts of the liver or the gall-bladder, forming gallstones. The diseased state of the liver in which it becomes impregnated with an unnatural quantity of bile may also be regarded as a disease appertaining to the special function of the organ, for the bile naturally contains a large proportion of fatty matter (cholesterine), though the chemical composition of this substance, and that of the oil or fat with which the liver is impregnated in disease, appears to be different.

Acute hepatitis, when it exists in a severe degree, is indicated pretty distinctly not only by the general signs of inflammation and symptomatic fever, such as thirst, heat, and rigor, but also by local symptoms, which point more especially to the seat of the disease, namely, pain and tenderness on pressure beneath the ribs on the right side, difficult breathing from the liver being pressed upon by the diaphragm. In air is drawn into the liver from the right side, dependent either on the extension of the inflammation to the diaphragm, or a sympathetic affection of the parts engaged in respiration. The pain in hepatitis so frequently extends to the right shoulder, and has been considered characteristic of disease of the liver. Vomiting is a common attendant on hepatitis, as an inflammation of most of the abdominal viscera. Another symptom is jaundice, which in this case is a consequence of the inflammatory action having disturbed the process by which the components of the bile are formed and separated from the blood.

Inflammation of the liver may terminate in suppuration, and the formation of one or more abscesses, which occasionally escape notice in the organ, produce externally, and even burst and discharge their contents through an opening in the skin.

Acute inflammation may be produced in the liver by any of the influences which give rise to it in other organs: the liver being a seat of disease in cold climates, the liver is especially liable to it in hot countries. The cause of this difference is not at present known; the mere heat of the atmosphere however, or some circumstances connected with it, seem to be influential, since even in hot countries, the liver is not free from inflammation.

Chronic hepatitis is indicated by the presence, in a less violent degree, of many of the symptoms which attend the acute form of this disease. The 'fever' is a cold pain or sensation extending from the right side, with some degree of tenderness in the same situation, pain in the right shoulder, slight jaundice or yellowness of the skin, and disorder of the stomach and digestive organs generally, are the most constant signs. It is frequently difficult to distinguish inflammation of the liver without enlargement from some disordered states of the stomach and bowels, which sympathize so much with it, and hence has arisen the popular error of designating any chronic disorder of the digestive organs a 'liver complaint'. There may not be a close correspondence between the liver, stomach, and bowels, and other viscera of the abdomen in disease, since we know that they are all engaged in one great function — digestion; and in the healthy state associated together in their action by a natural unity for the purpose of co-operation in that function.

The liver is very apt to become enlarged by chronic inflammation, and then can be felt externally. Of such enlargement, chronic hepatitis may be a cause. The surface of the chronic inflammation of the liver has extended to the whole lining membrane of the abdominal cavity.

Of the structural diseases, not inflammatory in their nature, some, as serous tuberculous, are rarely met with in the liver; metastatic growths, or carcinomata, are more frequent in it than in most other internal organs, except the intestinal canal. There are no certain means of ascertaining the presence of these diseases in the liver, until the tumours which they form attain such a size as to be felt externally; though it should be suspected, when the general state of the body marks the carcinomata and tubercular diathesis existing more when these diseases are known to be present in other parts, if at the same time there are marks of irritation and disturbed action of the liver.

The liver is a fat organ, and an attendant on palmar or cutaneous phthisis: it cannot be recognised by any signs during life. The liver in man, as in many animals, particularly the abeve...
as we have said, subject to become the seat of parasitical
being creatures — lydatis. These are generally contained
in great numbers in a firm general cyst, which not uncom-
monly protrudes externally, and bursts, or is opened by a
lacer, when numerous pellucid, balloon-like bodies of dif-
ferent sizes, floating in a transparent fluid, escape.

The nature of the changes to which the secreting action
of the liver is prone is but little understood; a further con-
ideration of these changes will be misplaced here.

The treatment of diseases of the liver is regulated by the
general principles according to which the cure of diseases
in other parts is attempted, and will of course vary with the
nature of the particular affection requiring it.

LIVERPOOL, a municipal and parliamentary borough
and seaport of Lancashire, and capital of the
county of the Mersey, in 53° 24' N. lat. and 2° 56' W.
long. The etymology of the name Liverpool, is, according
to the popular belief, derived from the name of a bird called
a liver or lever, which was said to frequent the site of the
town, great part of which was formerly a marshy pool, which
was filled and emptied with the flowing and ebbing of the
sea. In conformity with this popular tradition, the cor-
porate seal of the town bears the figure of a bird, which,
however, as there represented, is of a species wholly un-
known at the present day. It is, as is much doubted,
such a bird ever existed. The name of the town has also
been derived, and with at least an equal appearance of pro-
bability, from the Welsh words LLerpwll, signifying 'place
on the pool,' and it is certain that antiently the whole of the
estuary of the river Mersey was as far up as Lydiate called
LLerpwll, Lyrlpery, Lerpoolo, or Litherpool. In con-
firmation of this etymology, it may be observed that the name of Liverpool
is pronounced 'Lorpeel' by many of the country-people who live in the
neighbourhood.

No mention is made of Liverpool in Domesday-book,
though it contains the names of several places in the vicinity,
and also the grant of all the parts between the Ribble and
the Mersey to Roger of Poitiers, by whom it is said the
castle of Liverpool was built. This was probably the original
of an English town, which, if indeed, is as much doubted,
such a town ever existed. The name of the town has also
been derived, with at least an equal appearance of pro-
bability, from the Welsh words LLerpwll, signifying 'place
on the pool,' and it is certain that antiently the whole of the
estuary of the river Mersey was as far up as Lydiate called
LLerpwll, Lyrlpery, Lerpoolo, or Litherpool. In con-
firmation of this etymology, it may be observed that the name of Liverpool
is pronounced 'Lorpeel' by many of the country-people who live in the
neighbourhood.

The returns for 1837 include only seven of the twenty-
six articles enumerated in the previous years, but as regards
some of those seven exhibit a very important increase.

The number and classification of houses in the borough,
approached to the poor-rate in 1853-4, were as follows:—

<table>
<thead>
<tr>
<th>Description</th>
<th>1831</th>
<th>1832</th>
<th>1837</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cows</td>
<td>96,715</td>
<td>97,105</td>
<td>69,634</td>
</tr>
<tr>
<td>Pigs</td>
<td>2961</td>
<td>3,059</td>
<td>672</td>
</tr>
<tr>
<td>Horses</td>
<td>5,559</td>
<td>5,559</td>
<td>13,580</td>
</tr>
<tr>
<td>Mules</td>
<td>263</td>
<td>522</td>
<td>1,052</td>
</tr>
<tr>
<td>Sheep</td>
<td>134,324</td>
<td>138,634</td>
<td>76,390</td>
</tr>
<tr>
<td>Lambs</td>
<td>25,575</td>
<td>25,725</td>
<td>54,074</td>
</tr>
<tr>
<td>Pigs</td>
<td>150,001</td>
<td>205,001</td>
<td>605,005</td>
</tr>
<tr>
<td>Eggs (doz.)</td>
<td>5,650</td>
<td>4,070</td>
<td>8,190</td>
</tr>
<tr>
<td>Wheat (bush.)</td>
<td>227,690</td>
<td>351,130</td>
<td>233,690</td>
</tr>
<tr>
<td>Barley</td>
<td>110,679</td>
<td>111,725</td>
<td>94,000</td>
</tr>
<tr>
<td>Rice</td>
<td>21,325</td>
<td>21,325</td>
<td>24,000</td>
</tr>
<tr>
<td>Beans</td>
<td>26,800</td>
<td>9,860</td>
<td>7,923</td>
</tr>
<tr>
<td>Peas</td>
<td>1,724</td>
<td>3,448</td>
<td>1,223</td>
</tr>
<tr>
<td>Flour</td>
<td>513,154</td>
<td>320,469</td>
<td>191,710</td>
</tr>
<tr>
<td>Pork (lbs.)</td>
<td>10,000</td>
<td>9,000</td>
<td>8,000</td>
</tr>
<tr>
<td>Beef (lbs.)</td>
<td>20,300</td>
<td>20,300</td>
<td>20,300</td>
</tr>
<tr>
<td>Butter (lbs.)</td>
<td>1,254</td>
<td>1,254</td>
<td>1,254</td>
</tr>
<tr>
<td>(half doz.)</td>
<td>13,971</td>
<td>24,041</td>
<td>15,981</td>
</tr>
<tr>
<td>(lits.)</td>
<td>4,462</td>
<td>6,813</td>
<td>10,860</td>
</tr>
</tbody>
</table>

The total for 1837 is $3,012,700.

No considerable town in England has received greater
improvement during the past half-century than Liverpool.
Before that time the streets were narrow and inconveniencing,
and the buildings were wholly devoid of architectural beauty,
but successive alterations have given to the town
an amount of commodiousness and elegance not to be
met with in any other commercial port in this country.
This altered condition has been produced by the exertions
of the Corporation, in whom is vested the property of a great pro-
portion of the houses. As the leases of these properties have
therefore been renewed, the conditions have been amended,
with the sums necessary for the required
embellishment. The value of the corporation estates
is estimated at three millions of money, and the annual income
derived from rents and dock-dues has of late increased to

270,377

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upwards of 300,000/. A great proportion of this income has been devoted to the improvement of the town, including the building of churches, hospitals, and other charitable and public edifices. The sum expended in these objects, including the cost of works of art, between 1726 and 1838, is stated to have amounted to 1,668,500/.

The disbursements of the corporation have so far exceeded its income that it has incurred a considerable debt, and in October 1832, when a Report was made on the subject, the amount of the debt was 92,500/.

The most important public buildings are the town-hall, the Exchange buildings, and the custom-house. The building of the town-hall was begun in 1749, but was not completed in its present form and extent until near the end of the 18th century, when it was restored, and with many improvements, at an expense of 110,000/.

The ground-floor of this building contains the council-room, several committee rooms, the mayor's, town-clerk's, treasurer's, and town-surveyor's offices. The principal room was given by the corporation, which also contains a very fine suite of rooms, which are magnificently furnished. The saloon is 30 feet 6 inches long and 26 feet 6 inches wide. The two drawing-rooms are respectively 29 feet and 30 feet long, and 27 feet wide. The large hall is 44 feet long, 41 feet wide, and 40 feet high.

The second hall is 61 feet by 28, and 26 feet high; and the banquet-room, in which the mayor receives his guests, is 50 feet by 30, and 35 feet high. The whole of these rooms are surrounded with stucco. The staircase is lighted by means of a dome with lateral windows: the height from the floor of the building to the centre of the dome is 106 feet. The staircase is ornamented by a colossal statue of Cænus, by Chantrey, and surrounding the dome is a colossal figure of Britannia.

The Exchange buildings form with the town-hall three sides of a quadrangular area, which is used by the merchants of Liverpool as an Exchange. This quadrangle is 197 feet long from north to south, and 178 feet wide; it therefore contains nearly 37,000 square feet, which is more than twice the size of the recently destroyed Royal Exchange of London.

The buildings which form the west side of the area are occupied as offices by merchants; while the east side comprises a news-room, 94 feet by 32 feet, which is frequented by the merchants and brokers; and an underwriters' room about of somewhat smaller dimensions. The architecture of the two wings harmonises with that of the town-hall. In the centre of the area is a bronze monument, erected in honour of Lord Nelson. This monument, which is executed in bronze, faces a marble base, and is surmounted by a pedestal, figures emblematical of Nelson's principal victories. The statue of the dying admiral rests one foot on a prostrate enemy, and the other on a cannon; and he is receiving upon his sword a naval crown from Victory.

The rooms which form the north side contain the corporation's offices, the excise-office, and where it is intended shortly to place the post-office and the office for the distribution of stamps, is situated on the site, now filled up for that purpose, of the old dock. The land on which it stands, valued at 900,000/., was purchased by the corporation, which was not until 1796, 21 years ago, that it was able to take to expend 175,000/.

The erection of the building under an agreement with the government, by which, in consideration of 150,000/., to be paid by annual instalments of 25,000/., each to the corporation of Liverpool, was to make over the property to the government at the expiration of 20 years. The extreme length, measuring from east to west, is 466 feet 8 inches. The principal front faces the north, and in the centre there is an octostyle Ionic portico, the cost of which was 5,000/., and at each end are projecting wings, each of which is 94 feet wide.

The basement is used for storing bonded goods; the west wing is occupied by different offices of the custom-house; and the central contains the 'long-room' of that establishment. The passage and staircases to other offices.

The east wing contains the excise-office and the duty offices, and will afford accommodation for the post-office and the stamp-office. The long-room is 146 feet in length, 70 feet wide, and 45 feet high, and is surrounded by a dome 50 feet high: the passages and staircases of the wings are lighted by means of two smaller domes. The height of the rooms in the principal story is 20 feet, in the second story 21 feet 6 inches, and in the attic 14 feet 8 inches.

Liverpool contains 26 churches, some of which are hand-built some modern buildings; besides numerous chapels and meeting-houses, belonging to the Roman Catholics and various denominations of Protestant Dissenters. The church dedicated to Saint Nicholas, the tuteal saint of mariners, according to the Roman calendar, is one of the oldest places of worship in Liverpool, having existed as a chapel-of-ease under Walton parish before the town became a separate parish; it stands near the river, at a short distance from the town-hall.

The body of the church was rebuilt in 1774; and the tower, which was originally opened in 1610, was rebuilt in 1796. It is of a noble and classical style: it has a peal of twelve bells. Many of the churches were built with the funds of the corporation, but others have been erected at the cost of private individuals under private acts of parliament. The town contains many buildings which are fitted up for business purposes, of which one is the most splendid in the kingdom, is almost like a little town: it will accommodate about 1600 people; a larger hospital belongs to it. The infirmary, originally opened in 1800, was built on a better site in 1824 at the cost of 27,500/.

There are also large female patients. The lunatic asylum, which is capable of accommodating sixty patients, is a neat and commodious building, with spacious cells and day rooms, and furnished with warm baths. The foundation stone of this asylum was laid in January, 1829, and the building was completed at a cost of about 11,000/.

A building previously used for the same purpose is now used as a barracks. Besides these there are two smaller hospitals, two dispensaries, and an out-patient establishment, which was erected in 1809, has accommodation for 250 boys and 100 girls, who are carefully boarded, and clothed gratis. There are also charitable schools for the blind, and for the deaf and dumb, two corporation free-schools, and numerous other schools supported by private donations. Of Churches' Institution in Mount Street is built on ground given by the corporation, and cost 11,000/. The theatre, or lecture-room, will contain 1200 persons; it was opened in 1824 during the visit of the British Association at Liverpool in 1823. Attached to this institution are schools, in which, for very moderate charges, boys receive an education according to the station which they are intended to occupy.

There is no town in the kingdom which, in proportion to its size and population, is better provided than Liverpool with scientific and literary institutions. The Royal Institution, formed in 1814 by Mr. Roscoe, by shares or subscriptions of 100/., each, was opened in 1817, and in 1822 the subscribers were incorporated by royal charter.

The building has a frontage of 146 feet, and contains a series of rooms, comprising a circular lecture-room, capable of accommodating 500 persons. The second and third stories of the building are occupied by the Museum of Natural History, which is the largest and most valuable in that part of the kingdom. The instruments in the rooms which contain the star-glass and the Airship, the Amphitheatre, and the 50-inch telescope, are of the best kind; and the 12-inch telescope in the Royal Astronomical Society, which is the largest in the world, is contained in this. The Almshouses of the Society are also attached to the institution. The Literary, Scientific, and Commercial Institution was set on foot in 1835 by a few young men engaged in commercial pursuits, and already contains a library of 2500 volumes. It is supported by an annual subscription of 1000/., and, like the other institutions, they have the advantage of a news-room, lectures on various literary and philosophical subjects, and classes for the acquisition of languages and other branches of learning.

The Medical Institution, recently built at the cost of about 4000/., contributed chiefly by members of the medical profession, contains a museum and library, and comprises various halls and committee-rooms, and a theatre capable of holding 500 persons.

The borough hall is a large building, on the plan recommended by Mr. Pugin; it has been praised much by the inhabitants of Liverpool, as it contains more than 400 cells, and is calculated for the reception of 500 prisoners. This establishment was formerly situated in the town, but was removed to the eye of the town to the eye of the town, and 1668, 500/.

It has been praised much by the inhabitants of Liverpool, as it contains more than 400 cells, and is calculated for the reception of 500 prisoners. This establishment was formerly situated in the town, but was removed to the eye of the town, and 1668, 500/.
The market-places in Liverpool are upon an extensive scale. Saint John's Market, which stands in the centre of the town, covers a space of 12 acres, being 550 feet long and 135 feet wide, the whole under one roof, supported by 116 pillars. Meat, poultry, fruit, and garden vegetables, are daily sold in this market, but the principal market-days are on Wednesdays and Saturdays. The fish-market is on the opposite side of the street in which Saint John's Market stands. There are several smaller market-places in different parts of the town.

The principal places of public amusement are:—the Theatre, on the east side of William Square; the Royal Amphitheatre, in Great Charlotte Street; the Liver Theatre, at the top of Church Street; the Wellington Assembly-Rooms, in Mount Pleasant; and the Rotunda, in Bold Street. There are also a large and well-stocked botanical garden at Edge Hill and a zoological garden in Derby Road.

Several cemeteries on a large scale have lately been made in or near Liverpool: that of St. James, which is formed out of an old stone-quarry, contains the statue of Mr. Huskisson, who is interred there.

The town is plentifully supplied with water by a company connected with the corporation, formed in January, 1800, and incorporated by act of parliament, and by a second company, which brings its water from the village of Bootle, about three miles from the town to the north. The streets and shops are well lighted with coal-gas, supplied by two companies, which make handsome returns to the proprietors.

The growth of the town will be seen from the following statement of its population at different times, from the end of the seventeenth century:—

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Year</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1670</td>
<td>5,714</td>
<td>1770</td>
<td>35,600</td>
</tr>
<tr>
<td>1710</td>
<td>8,168</td>
<td>1777</td>
<td>34,107</td>
</tr>
<tr>
<td>1729</td>
<td>11,833</td>
<td>1790</td>
<td>55,732</td>
</tr>
<tr>
<td>1738</td>
<td>15,074</td>
<td>1801</td>
<td>77,708</td>
</tr>
<tr>
<td>1742</td>
<td>18,000</td>
<td>1811</td>
<td>94,576</td>
</tr>
<tr>
<td>1768</td>
<td>18,500</td>
<td>1821</td>
<td>118,776</td>
</tr>
<tr>
<td>1760</td>
<td>25,787</td>
<td>1831</td>
<td>165,221</td>
</tr>
</tbody>
</table>

By the Municipal Corporation Act (5 & 6 Wm. IV., c. 175), the council consists of a mayor, 16 aldermen (one for each of the sixteen wards into which the town is divided), and 48 councillors, one-third of whom are elected every year, those who vacate their office being eligible for re-election. The mayor is a justice of the peace during his year of office, and for one year after. The aldermen serve for six years: one-half are elected every three years. The council thus constituted has the right, under a private act of parliament passed in 1832, of nominating persons to fill corporate offices, and is empowered to make laws for regulating the police of the town, of the docks, and of the port generally, for lighting and watching the town, and for the suppression of disorderly and immoral practices. General sessions of the peace are held four times in the year, in which the recorder, who is appointed by the crown, presides as judge. The assizes for the hundreds of Salford and West Derby, forming the southern division of the county, are held in the town. Liverpool is a parliamentary borough, sending two members to the House of Commons. The right of voting rests in the householders occupying premises of the annual value of 10l. and upwards, and in all free burgesses not receiving alms. The number of persons registered as electors in these two classes, in 1836 and 1837, respectively was:—

1836. 1837.
Householders paying rates 10,225 10,715
Freemen 3,197 3,175
13,422 13,890

The number of actual electors is not so great as is indicated by the registers, because some names are entered in both capacities. The number who gave their votes at the general election in 1837 was 9091, of whom 6670 were householders, and 2421 were freemen.

The living is a rectory, divided into two medieties—the new church of St. Peter, and the parochial chapel of St. Nicholas.

The progress of Liverpool as a commercial port may be traced from the receipt of customs duties during the last 100 years, which has been as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Customs Receipts</th>
<th>Customs Receipts</th>
<th>Customs Receipts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1743</td>
<td>£236,468</td>
<td>1800 1,062,798</td>
<td>1829 3,216,044</td>
</tr>
<tr>
<td>1750</td>
<td>215,961</td>
<td>1805 1,276,370</td>
<td>1830 3,662,114</td>
</tr>
<tr>
<td>1753</td>
<td>300,237</td>
<td>1808 1,470,730</td>
<td>1832 3,509,536</td>
</tr>
<tr>
<td>1763</td>
<td>248,818</td>
<td>1810 2,000,987</td>
<td>1833 3,608,008</td>
</tr>
<tr>
<td>1775</td>
<td>369,436</td>
<td>1816 1,484,075</td>
<td>1835 3,752,132</td>
</tr>
<tr>
<td>1778</td>
<td>503,994</td>
<td>1818 1,981,625</td>
<td>1837 3,840,208</td>
</tr>
<tr>
<td>1782</td>
<td>574,265</td>
<td>1819 3,067,851</td>
<td>1841 4,272,984</td>
</tr>
<tr>
<td>1783</td>
<td>119,690</td>
<td>1820 3,300,020</td>
<td>1842 4,402,483</td>
</tr>
<tr>
<td>1785</td>
<td>680,928</td>
<td>1825 3,819,503</td>
<td>1847 4,263,496</td>
</tr>
<tr>
<td>1788</td>
<td>696,438</td>
<td>1831 2,651,496</td>
<td>1848 4,263,496</td>
</tr>
</tbody>
</table>

The growth of the trade of Liverpool has been further shown by the number of vessels unloaded in the docks, and the amount of dues collected on the same. [Dock.] The number of ships unloaded and amount of dues collected in each of the years ending 24th of June, 1837 and 1838, were:—

<table>
<thead>
<tr>
<th>Year</th>
<th>Ships</th>
<th>Dock Dues</th>
</tr>
</thead>
<tbody>
<tr>
<td>1837</td>
<td>15,038</td>
<td>£191,330</td>
</tr>
<tr>
<td>1838</td>
<td>14,420</td>
<td>161,843</td>
</tr>
</tbody>
</table>

The course of the trade of the port is shown by the following statement:

Number and Tonnage of Vessels Entered Inwards and Cleared from the Port of Liverpool during the year 1837, under each of the different Heads below stated.

<table>
<thead>
<tr>
<th>Inwards.</th>
<th>Outwards.</th>
</tr>
</thead>
<tbody>
<tr>
<td>British</td>
<td>Foreign</td>
</tr>
<tr>
<td>Europe, generally</td>
<td>548</td>
</tr>
<tr>
<td>Africa</td>
<td>96</td>
</tr>
<tr>
<td>America, c.</td>
<td>133</td>
</tr>
<tr>
<td>British Northern Colonies</td>
<td>329</td>
</tr>
<tr>
<td>West Indies</td>
<td>197</td>
</tr>
<tr>
<td>Foreign West Indies</td>
<td>12</td>
</tr>
<tr>
<td>United States</td>
<td>161</td>
</tr>
<tr>
<td>South American States</td>
<td>210</td>
</tr>
<tr>
<td>Total</td>
<td>1,685</td>
</tr>
<tr>
<td>Foreign, c.</td>
<td></td>
</tr>
<tr>
<td>Greenland</td>
<td></td>
</tr>
<tr>
<td>Isle of Guernsey, Jersey, &amp;c</td>
<td></td>
</tr>
<tr>
<td>Isle of Man</td>
<td>246</td>
</tr>
<tr>
<td>Irish Trade</td>
<td>3,359</td>
</tr>
<tr>
<td>Other Coasters</td>
<td>2,002</td>
</tr>
<tr>
<td>Total</td>
<td>10,281</td>
</tr>
</tbody>
</table>
It will be seen from this statement that very nearly two-fifths of the tonnage inwards and outwards are engaged in the trade with the United States of America, and of that the shipping so engaged nearly four-fifths are under a foreign flag. It will be further observed, that the intercourse with Ireland and with other parts of Great Britain has been more than doubled since 1838. Liverpool has benefited more than any port in the kingdom (London alone excepted) from the application of steam-power to navigation. Steam-ships of the first class proceed to and from Liverpool daily. The Drocourt and inter-course is kept up four times a week; with Belfast three times a week; with Waterford, Newry, and Londonderry, twice every week; with Glasgow daily; with the Isle of Man, Beaumaris, Bangor, Menai Bridge, and Carnarvon, as frequent as the geographical situations of these places will admit; while every port of Great Britain is now generally supplied with regular steam-conveyances. In 1854, the town and villages on the opposite side of the river.

The inland trade of Liverpool is much assisted by means of canals, the most important of which in extent is the Leeds and Liverpool canal, 128 miles long. The Mersey and Irwell navigation served until the opening of the Liverpool and Manchester railroad for the conveyance of bulky and heavy goods to and from Manchester. The Duke of Bridgewater's canal connects the Mersey with Birmingham and Manchester, joining the Grand Trunk (1.), thus perfects the communication with London. The trade with North Wales, through the western part of Cheshire, is carried on by means of the Ellesmere canal; and the river Weaver navigation connects with the Grand Trunk (1.), and gave the place of the town of Ellesmere. [Canals.] The modern adaptation of iron railways for the rapid conveyance of goods and passengers was first brought into practical operation by the Liverpool and Manchester railroad, which was opened for use in September, 1830. The traffic upon this line from that time to Midsummer, 1835, since which date such particulars have not been made public, was as follows:

<table>
<thead>
<tr>
<th>Merchandise</th>
<th>Coal</th>
<th>Passengers</th>
</tr>
</thead>
<tbody>
<tr>
<td>From 16 Sept. to 31 Dec., 1830</td>
<td>1,433</td>
<td>5,260</td>
</tr>
<tr>
<td>1 Jan. to 30 June, 1831</td>
<td>56,498</td>
<td>5,296</td>
</tr>
<tr>
<td>1 July to 30 June, 1832</td>
<td>72,481</td>
<td>7,846</td>
</tr>
<tr>
<td>1 July to 30 June, 1833</td>
<td>60,320</td>
<td>7,204</td>
</tr>
<tr>
<td>1 Jan. to 30 June, 1834</td>
<td>62,347</td>
<td>8,171</td>
</tr>
<tr>
<td>1 Jan. to 30 June, 1835</td>
<td>104,305</td>
<td>46,629</td>
</tr>
<tr>
<td>1 Jan. to 30 June, 1836</td>
<td>113,647</td>
<td>55,444</td>
</tr>
<tr>
<td>1 July to 30 June, 1837</td>
<td>117,817</td>
<td>68,963</td>
</tr>
</tbody>
</table>

From these figures, which do not include great numbers of cattle, sheep, and swine conveyed from Liverpool towards the interior of the country, it appears that in less than six years there were conveyed upon this railway nearly two millions and a half of passengers, and but little short of a million and a quarter of tons of merchandise and coal. Exactly one century before the opening of this line, the town of Liverpool contained only one carriage, and no stage-coach came nearer to the town than Warrington, the traffic being then principally carried on by means of pack-horses. In 1760 there was only one stage-coach between Liverpool and London, and the journey required four days: the first mail-coach to London began to run on the 25th July, 1785. Now that the time required for the performance of this journey has been reduced, by means of the Grand Junction and Birmingham railways, to a ride of ten or eleven hours, the number of passengers must be reckoned by hundreds of thousands in the year, an alteration which adds another and very effectual element towards the continued growth and prosperity of Liverpool.

It appeared from the annual bills of mortality printed at Easter, 1838, that the number of baptisms in the town and vicinity during the year was 10,143, the number of marriages 3,017, and of burials 2,779. Of the births and baptisms, there were belonging to the Established Church 6,273, Roman Catholics 2,917, Presbyterians 1,166, Baptists 620, Independents 128, Unitarians 52, Methodists 107, Friends 13, Jews 33, other Dissenters 409 513, 10,143.

Of the deaths in the parish, 6,675 in number, there were—

For further particulars relating to canals and railways connected with Liverpool see Lancashire.

LIVIA. [Augustus.]

LIVIUS, with his full name, LUCL'IVIUS ANDRONICUS, was the first person who introduced Livy's great work, which was long, (Livy, vii. 23.) He is said to have been the slave and afterwards the freedman of M. Livius Salinator. The time and place of his birth are uncertain; but his first play was probably exhibited 240 B.C., in the year before Ennius was born. (Cic., Brut., c. 19; Liv. vii. 22.) We learn from Livy the historian, that he acted in his own piece, and that after his voice failed him, in consequence of the frequent wearing of a repetition of the audience frequently demanding a repetition of his favourite passages, he introduced a boy to repeat them. (Liv. vi. 2.) The fragments of his works, which have come down to us, are too few to enable us to form any opinion respecting them: Cicero says that they were not worth being read a second time. (Brut., c. 18.) They were hitherto, and are at the time now being performed, and continued to be read in schools till a much later period. (Hor. Epist. ii. 1. 69-71.)

The hymns of Livy were sung on public occasions, in order to avert the threatened anger of the gods. (Liv. viii. 3.) For this reason the historian had been distinguished honour to Livy, in consequence of the success which attended their arms in the second Punic War, after the public recitation of a hymn which he had composed. Livy wrote both tragedies and comedies: that, if we may judge from his name, he might have been chiefly taken from the Greek writers. The titles, which have been preserved, are—Achilles, Adonis, Agisthus, Ajax, Andromeda, Antiphus, Antenomos, Equo Tritonus, Helena, Hermione, Ino, Lydus, ProteusIon, Serenus, Teres, Tereus.

LIVIUS, Titus, the Roman historian, was born at Patavium (Padua), B.C. 59. We possess very few particulars respecting his life. He appears to have lived at Rome, and to have been in intimate terms with Augustus, who is said to have been an admirer of his writings, which were in part written for the use of Augustus. He was the author of an account of the Africans which he bestowed upon Pompay's party. He also appears to have superintended the studies of Claudius, who was afterwards emperor. (Suet. Claud., c. 41.) He died a.d. 17, in his 76th year, which, if we believe Livy, he had passed. Books, as the titles would seem to indicate, of the 14th and 15th, books have been published, which contain fragments of the 136th book, as it is called, in reality the epitome of the 136th. Many hope have been entertained at various periods of recovering the lost books of Livy's original work, but they now appear to be irrevocably lost. (Erpenius.) Others have stated that there was a translation of them into Arabic; but such a translation has never been discovered. The fragments of the lost books, which have been preserved by grammarians and other writers, are given in Drake's edition. That portion of Roman history which was
conflict of external testimony, he is never induced to pause or doubt by any internal difficulty, any inconsistency or contradiction, or perplexity in the results which he draws from the materials of his story. Nothing less than a miracle is too strange for his acquiescence. It is evident that he has bestowed no labour upon examining the probability of the events which he relates, or investigating their connection with each other. There are also sufficient proofs that he wrote hastily, and even carelessly. He sometimes mentions incidentally in a subsequent part of his history, circumstances which he has omitted in their proper place. Thus it is only by his remarks for the most part upon the dignities of pontiff and augur to the plebeians (xv. 29) we learn from him that Ramnes, Titienses, and Lucerenses, were names of the antient tribes. He sometimes repeats (xxxv., 21 and 39), sometimes contradicts himself (xxxv. 22, and xxxiv. 44).

In the no less of his want of familiarity with the antiquities of his country, that though he expressly informs us that, till a very short time before the capture of the city, the Roman way of fighting was in close phalanx with long spears, yet in no description of a battle does he allude to the use of the older times the terms which relate to the more modern structure of the army. We cannot therefore feel assured that he always represented accurately the statements of the older annalists from whom he takes his materials.

With much might be expected, of the importance which these works would be single and detached, could bear but a very small ratio to the bulk of the history, and would not affect its general spirit. But the very tone and manner of Livy's work, however great may be his power of description, however beautiful his illustrations, however they dazzle the imagination or interest the feelings of his readers, is a warning against implicit belief. He excelled in narration and in the eloquent expression of felt emotions, and he obviously delighted in the exercise of his genius. But in the investigation of the important and the striking, he seems less desirous to ascertain the truth than to array the popular story in the most attractive garb. He is not so much an historian as a poet. As the history advances, and the truth of facts is better ascertained, he is of course compelled to record records which he has engraven. But, in that he appears to have had the curiosity to examine the monument himself, but is content with repeating the report of Augustus Caesar (iv. 20). This is one of the few passages in which he descends to a critical comparison of his materials and his opinions; and it will serve as a proof of how little he regarded the problem in that art of an historian, and how little he valued the result for: though in this digression he professes to believe in the superior authority of the inscription, in the main course of his narration he never deviates from it. He makes no mention of other monuments which we know to have existed; the column in the temple of Jupiter Feretrius, which was at variance with the received fasti (or register of magistrates), and some others which, according to the ties of the league (Dion., iv. 26); the treaty of Tarquinii Superbus with Gabii, written on a bull's hide, and preserved in the temple of Diane Fidiai (Dion., iv. 59); a treaty with the Sabines, of the time of the kings (Hor. Epist., ii. 25); the treaty with Carthage in the first year of the republican war (Polyb., iii. 22); and here his negligence is without excuse; for even though the document itself might have perished before his time, he could have found the translation of it in Polybius, if he had consulted him before he began to narrate his history, which was known to Pliny (H. N., xxxiv. 14). He does not therefore find his narrative upon contemporary records, but aways draws his materials from the works of other annalists, Fabius Pictor, Calpurnius Piso, Valerius Messala, Cæcilius Metellus, and others, who were contemporary with him, and who are mentioned in the inscriptions, which he does not trouble himself to consult. This is a proof of his want of original investigation; and it is not an accidental peculiarity of the history of the first centuries of the city. But many discrepancies less flagrant, and even some as important as those which he has passed, he over looks without notice; and yet we know with certainty that they existed, because they appear in the narrative of Dionysius, who drew from the same authorities as Livy. But though the course of his narration is sometimes checked by the P. C. N. 859.
In addition to the history of Rome, Livy wrote several other works, which have not come down to us; amongst which Scenae, or the festival of the Scenae of the Greeks and other theatrical subjects; and Quintilian (Inst. Orat. x, 1), a letter to his son, recommending the study of Demosthenes and Cicero.

The best editions of Livy are those of C. Greuter, 1735-1746; Drakenborn, 1783-1786; Estes, 1804; Rappe, 1817; Du Puigaudeau, 1816-1824; and Kreysig, 1823-1827. His Roman History has been translated into most European languages; but we are not aware of any one which gives a faithful representation of the original work: the most esteemed are the translations in Germany by Göttingen, 1726-1729; and Cilard, 1727-1729; in Italian, by Nardi, 1753; in English, by Baker, 1797; and in French, by Durou de la Malle et Noel, 1810-1812; and 1824.

LIVONIA (Livenland; in German, Liethland), is one of the Baltic provinces of Europe, situated between 55° 3' N. lat. and 23° 29' and 27° 38' E. long. It is bounded on the north by Estonia (or the government of Reval), on the north-east by Lake Peipus, on the east by Pakow, on the south-east by Vitepask, on the south-west by Courland, and on the west by the Baltic, which separates it from the Island of Oesel, and some smaller ones belonging to this province. The area, according to Schubert, is 20,708 square miles; but other writers make it only 17,150 or 17,560 square miles. The province derives its name from its first inhabitants, the Livens, a nation of fishermen, whose race is now extinct, or, confounded with the Esthoniens and the Lettenmans (Lettens).

The surface is on the whole level and gently undulating, with here and there some hills, which rarely exceed 100 feet in height. There are no mountains. The most elevated part of the east ground of the whole province is the Mesenburg, near Wenden, which rises to the height of 1200 feet. Livonia is covered with vast forests, lakes, rivers, meadows, marshes, and heaths. The soil on the sea-coast (which is bounded by a cliff several miles high), is sandy; in the interior, sand, clay, loam, and moorland alternate; but there are also many very fertile tracts. In the east the appearance of the country is not pleasing; the better portions are in the south, especially on the banks of the Sile and the Venta, which is some 20 miles broad, and now forming the nobility, clergy, and burgheys in the towns; about 45,000. 5th. Russians, 7000, and a very few Jews. Almost the whole, except the Russians, who are of the Greek church, profess the Lutheran religion. There is a considerable number of freeholders, all of whom are peasants; formerly serfs, but vassalage was abolished in 1818, and they are now nearly in the same condition as the German peasant.

The provinces of Livonia, Estonia, Courland, and Semgallia, have in different times, been under the Russian state, to which however they only paid tribute, and had their own government. The Russians did not even oppose the enterprises of foreign conquerors; thus it happened that during the distracted state of Russia they made themselves masters of Estonia and Livonia, and now and then, for the sake of mere nobility, clergy, and burgheys in the towns; about 45,000. 5th. Russians, 7000, and a very few Jews. Almost the whole, except the Russians, who are of the Greek church, profess the Lutheran religion. There is a considerable number of freeholders, all of whom are peasants; formerly serfs, but vassalage was abolished in 1818, and they are now nearly in the same condition as the German peasant.

Towards the end of the century Canute VI., king of Denmark, made himself master of these provinces, which Walker, 1731, one of his successors, ceded for a sum of money the Teutonic order, which was united with the Order of the Swedish archbishop of Stockholm, and so the Teutonic Knights remained in possession of these four provinces. At length the weakness of the Order, who was unable to resist the czar Ivan II., Wasiliowitsch, who sought to recover those provinces that had been detached from the Russian empire, compelled the cession of the whole state. Estonia placed itself under the protection of Sweden; Livonia was united with Poland; Courland and Semgallia became a duchy under Poland, which Gottthard Kettler, the last grand-master of the Teutonic order, obtained by this treaty. In 1560, Germany was divided into five circles, those of Riga, Derry, Arenberg, Perma, and Wenden.

(De Bray, Essai sur l'Histoire de la Livonie, 3 vols., De par, 1817, Hassel, Erdbeschreibung, &c.)

LIVONIECA. [Isoroda, vol. ii, p. 92.]
LIVORNO, called by corruption Leghorn by the English, and Livourne by the French, is a seaport town on the west coast of Italy, in the grand-duchy of Tuscany. It stands at the southern extremity of a low and partly marshy plain, which extends from the left bank of the Arno to the town of Livorno, where a projected line of the navigable river Volterra, and divides the basin of the Arno from that of the Ombrone or Maremma of Siena. The hills of Montenero end abruptly on the sea about three miles south of Livorno; they are naturally stony and barren, but the slopes towards Livorno are clothed with meadows and gardens, which are the resort of the merchants and their families during the summer, and have a fine sea-view, which embraces the coast and the Apennines to the north towards the Gulf of La Spezia, the islands of Gorgona, Capraia, and part of the island of Cape Ferra. On the extreme of the island of Corsica, Livorno is 14 miles south by west of Pisa, and 45 by south west of Florence, in 43° 33' N. lat. and 16° 19' E. long.

The town is neatly and regularly built; the streets are wide and mostly straight, and there is a fine canal in the middle of the town. The western district, called la Nuova Venezia, is intersected with canals, by which the goods are carried in boats from the shipping in the harbour and landed before the warehouses of the merchants. Many of the private houses are handsome, uniting Italian outward architecture and French glittering with windows. The streets are paved with stones, and fitted up in good taste. Of all the towns in the Mediterranean perhaps Livorno most resembles an English town; the inhabitants are, by long intercourse, familiar both with the English, and with the French, who have long traded with them, and the English garrison has, at least understood, from many of the natives. The people are active, steady, and peaceably inclined. A greater toleration exists here than in any other part of Italy: the English and Lutheians have chapels and burying-grounds, the Greeks a church, and the Jews a synagogue. The Harbour of Livorno, situated on the ramparts, is adorned with numerous marble monuments—amongst others that of Smollett, who died here. The town itself is little more than two miles in circumference; but two large suburbs, one beyond the north of the town, and the other, called Borgo Cappecuca, have gradually increased to the size of towns, and have been lately included within the boundaries of the Porto Franco, wherein goods can be landed and warehoused, and exported again without paying duties. The outer mole, which is more than a mile in length, and joins the little house, affords a pleasant walk. The harbour is tolerably large, but not sufficiently deep for large vessels, which lie in the roads, where the anchorage is safe and good. The Darsena is a fine and well-constructed dockyard, where vessels of every description are floated, and fitted out by extensive warehouses and convenient lodgings.

Livorno is entirely a commercial place: it has however a casino, or assembly-house, a theatre, very good inns and coffee-houses, and the vicinity of Pisa affords the opportunity for a pleasant drive and amusing excursion. Elementary schools and infant schools have been of late years established at Livorno; and the Jews, who are about 15,000 in number, and many of whom are descended from Spanish and Portuguese Jews expelled from the Peninsula two centuries ago, have established some good schools and institutions for education. The population of Leghorn is now reckoned at 75,000, among whom are individuals of every nation in Europe; besides Turks, Moors, Armenians, and Jews from Africa and Asia.

Livorno claims to classical antiquity; it is first mentioned as a village, parish, and fort, adjacent to Porto Pisan, or the harbour of Pisa, in the eleventh century. It was ravaged in the wars between Genoa and Pisa, was taken possession of by the Visconti of Milan, and afterwards by the French, under the Duke of Bourbon, who entered it in 1407 to the Genoese for 26,000 gold florins. It was partitioned, but fell at that time into the hands of the Florentines, who not long after effected the purchase of Livorno from the Republic of Genoa, in 1421, for 100,000 golden florins. The Florentines established docks at Livorno, where they built their vessels, and surrounded the place with walls. As the neighbouring Porto Pisan became gradually filled up by the simultaneous effects of the alluvial deposits of the Arno and other streams, and by the sand thrown up by the western storms, the importance of Livorno as a port increased in proportion, until at last it entirely obliterates the former. But the great increase of Livorno took place in the following century, under the dynasty of the Medici. The grand-duke Cosimo I. granted to all new settlers privileges and immunities, under the condition of their pursuing in consequence of debts contracted or penalties incurred in other countries. He also built a mole and lighthouse, and made it the station of the galleys of the military order of St. John of Jerusalem, was converted against the Turks and Moors. His successor Ferdinand I. greatly extended the improvements begun by Cosimo; he raised regular fortifications round the town, built warehouses, a fortress, a lighthouse, and numerous other buildings, and excavated a navigable canal. The commercial communication with the rest of Europe was, by this time, so great that they confirmed the privileges and immunities to new settlers granted by Cosimo, but he published an indult in forty-eight articles, dated the 14th of June, 1593, by which merchants of all nations and of every religion, Greeks, Armenians, Turks, Jews, Moors, and others, were invited to come and settle at Livorno, without fear of being molested on account of their religion, and with full security for their persons and property. It happened that about this time the fanatical intolerance of the Spaniards was driving away the Jews and converting the Christians of the kingdom into Moors, who availed themselves of the asylum thus offered to them by Ferdinand. A number of Corsicans, dissatisfied with their Genoese rulers, and of Provencals, seared away by the civil wars which desolated France, came also to settle at Livorno. Cosimo II. confirmed and extended the privileges of Livorno, and the various statutes, built new ships of war, and when the edict of Valencia, in September, 1609, by Philip III., banished all the remaining Moors from Spain, Cosimo invited 3000 of these exiles to settle as colonists in the territory round Livorno. But Ferdinand, considering the number of these strangers and the imminent danger of the grand-duke of some time to embark them for the coast of Africa. Livorno has continued ever since to prosper through the enlightened protection of the successive grand-dukes and the tranquillity which Tuscany has in general enjoyed; it prospered so well, that its people, by their vigorous spirit, were able to prevent, by concerted effort, the war of the French Revolution, the neutrality adopted by the grand-duke Ferdinand, whilst all the rest of Europe was at war, favoured greatly the commerce of Leghorn. When Bonaparte had invaded Italy in 1796, he did not respect the neutrality of Tuscany, but sent a body of troops to seize upon all English, Portuguese, Neapolitan, and Austrian property at Leghorn, and even insisted that the merchants of Livorno should deliver the balances and documents belonging to individuals of the above nations, and that of bad faith, which was honourably avoided by subscribing a round sum, which they paid to the French. After the rupture of the peace of Athens, Livorno enjoyed a kind of neutrality under Maria Theresa, but when Napoleon occupied Tuscany and annexed it to the French empire, upon this, the trade of Livorno was annihilated, its counting-houses gradually became deserted, a ship seldom entered the harbour, many of the merchants wound up their accounts, and retired to Pisa and other places. Livorno was one of the ports which suffered most from the Continental System, and in which the dominion of Napoleon was most disliked. With the peace of 1814 the prosperity of Livorno returned, and it had made rapid strides ever since. Population and buildings have been rapidly increased, and the immunities of the Porto Franco have been extended to the suburbs and the whole city has been constructed, and other improvements have been effected. A railroad is now in progress between Livorno and Florence. A capital of thirty millions of Tuscan livres (about 10 million sterling) has been raised by shares of 1000 livres each for the purpose. The length of the road will be about 50 miles.

The imports into Livorno are either for consumption or for deposit. In the first place, Livorno supplies with foreign goods Tuscany, Liguria, and the Roman States, and partly with goods from Genoa, Pisa, and Livorno itself. Foreign goods supplied Lombardy also, but Trieste has now supplanted Livorno in this branch of trade. The deposit trade of Livorno was also in the last century more extensive than it is now. The English, Dutch, American, and other ships from the Atlantic carried thither manufactures and colonial goods, and exchanged them for cotton, silk, and other produce of the Levant, which were brought to Livorno by Italian and
Greek vessels. The facilities afforded by the lazaretto and warehouses, the perfect freedom of trade, and the security enjoyed there, made Livorno a most convenient place of exchange between the Levant and the nations of western Europe. This relation of things is now materially altered. Commerce is become more direct: the English, American, and Dutch vessels, from the west coast to the Levant and the Black Sea to exchange their cargoes, and the improvements that have taken place in Turkey of late years, and the security afforded to navigation by the state of general peace, all tend to favour the direct intercourse between the ordinary carriers, and to diminish both the importance of ports of deposit, such as Livorno, Malta, Lisbon, &c. Still the transit trade of Livorno is considerable; its warehouses are always well supplied, and it is a convenient place especially for the smaller vessels from the coasts of Italy and its islands to take in their cargoes.

The principal articles of produce of the country exported from Livorno are: silk, either in thread or manufactured, to the amount of about three millions of frances annually, oil, two millions; straw hats, three or four millions—for the manufacture of which there are eight millions of frances; iron from Elba, paper, potash, alabaster, coarse woolen cloths for the Levant, coral gathered on the coasts of Barbary and Sardina, and manufactured at Livorno; and anchores, which are fished off the island of Ugo. Livorno's chief exports are: corn from the Black Sea, French woollens, English cotton goods, hardware, salt fish, and colonial articles. In 1832 the imports amounted to sixty-eight millions of frances, and the exports about fifty millions. In the same year there entered the port of Livorno 135 English vessels, 126 Austrian, 27 Russian chiefly from the Black Sea, 61 American, 30 Swedish, 9 Danish, 4 Dutch, 61 Greek, besides more than 2000 coasting vessels from the coasts of Italy, France, and Spain.

LIVRE, antiently a money of account in France, afterwards a coin. The word is derived from the Roman libra, or pound, the standard by which the French money was regulated. Twenty sous being made equal to ten cents in the livre.

Kelly, in his 'Complete Cambist,' vol. i., p. 141, says, 'Accounts are kept in France in francs of ten decimes, or a hundred centimes. Before the year 1792 they were kept in livres of 20 sous or 240 deniers. The livre and franc thus formed are of the same value as now; but the livre is now 12 centimes better; thus 80 francs equal 81 livres, and by this proportion the antient monies have been generally converted into modern. By a decree of 1810 the following proportion was established: pieces of 49 livres, at 47 francs 22 centimes; pieces of 24 livres, at 23 francs 55 centimes; of 6 livres, at 5 francs 80 centimes; of 3 livres, at 2 franc 73 centimes.

The livre was formerly of two kinds, Tournois and Parisis. The Livre Tournois contained 20 sous Tournois, and each sous 12 deniers Tournois. The Livre Paris was of 20 sous Parisis, each sous worth 12 deniers Parisis, or 15 deniers Tournois; so that a livre Parisis was equivalent to 25 sous Tournois; the word Parisis being in opposition to Tournois on account of the rate of money, which was one-fourth higher than at Tournois.

In the money of the Mauritius, or Isle of France, colonial livres are used, two of which equal a franc.

Kelly, in 'Supra,' vol. i., p. 269, says, under 'Neufchatel in Switzerland,' that the different names of keeping accounts having different antients. The best antient method is in Livres foibles, of 12 gros or 144 deniers, which is partially retained, particularly in rents and inferior departments of business. The second way of keeping accounts is in livres Tournois of Neufchatel, deniers being to those of the livre of which equals 24 livres foibles, and is worth 13l. 3d. sterling money. Another mode was introduced in 1798, which is in francs of 10 barten, or 100 rappen.

The Lira Italiana is the Italian livre; equal to the English shilling, divisions and multiples in proportion. There is also the lira of Modena, and the lira of Reggio; the former worth 3l. 3d. sterling, the latter worth only two-thirds of the lira of Modena.

Accounts are likewise kept in several parts of Canada in livres foibles of the antient system of France. (Kelly, vol. i. p. 59; ii. p. 293.) This is called old currency.

LIXIVIUM, a term which is synonymous with ley. It was used by the older chemists to signify a solution of an alkali in water; and what is now usually called an alkaline solution, or a solution of an alkali, was termed indifferently an alkaline ley or alkaline lixivium.

LIZARD. [Lacertidae; Saurians.] LIZARD POINT. [CORNWALL.] LJUNGAN-ELF. [ANGERMANLAND.] LJUNGN-ELF. [SWEED.] LLAMA (Auchenia of Iliger; Lama of Cuvier and others), the generic name for that form of the Camelidae which is confined to the New World.

OBLIGATION.

| Denition: | 2 Canine | 1-1 | Molars | 5-5 | 4-4 | 30 |

The difference between the dentition of the two sub-families of Camelidae, Camelus and Auchenia, appears to consist mainly in the absence of the two small pointed teeth, or, in the other words, the two cusps in the canines and the molars in the Camelus, from the jaws of the Llamas. Thus the Llamas have four false molars, as they may be termed, less than the Camelis. In other respects the dentition of the one is, as nearly as may be, the dentition of the other. The following cut exhibits the dental arrangement of the Dromedary, and will convey a sufficiently accurate idea of the same parts in the Llamas, if the spectator will suppose the absence of the four teeth above-mentioned. The difference was considered by M. P. Cuvier to be of such small importance, that he has not considered it necessary to give a figure of the dentition of Auchenia.

Teeth of Dromedary. (F. Cuvier.)

Baron Cuvier observes, that the Camelis and Llamas differ in many respects from the boomed ruminants. Considered as a whole, the head of the former presents a narrower and more lengthened muzzle (anience plus alinement), a cranium larger in proportion, orbits placed more forward, and the edges of those orbits more prominent, in consequence of the temples being more sunk.

In the Llamas the bones of the nose are short, and their extremity notchèd; their base is slightly enlarged; the lacrymal bone is but little advanced upon the cheek, and leaves a wide space between its anterior angle and the upper external angle of the nasal bone. It does not cover the orbit in the maxillary bone, but stops above the suborbital internal hole; nothing of the vomer is to be seen above the sphenopalantine hole, and a small portion of the pterygoid internal apophysis scarcely shows itself there. The pterygoid bone is almost united into a single bone much wider than it is found in the intestinal suture of animals, nevertheless, before the occipital crest. The temporal wing of the posterior sphenoid bone has a descending prominence, and its pterygoid wing terminates in a sharp point, which projects more than that of the pterygoid app.
noted by Cuvier, which peculiarly marks the Camelidae, viz. the absence of the perforations in the transverse processes of the cervical vertebrae for the transmission of the vertebral arteries.

In the structure of the stomach, the Camelidae exhibit a marked difference from other ruminants. This part of the organization in the true Camels is explained in the article Camel; and though doubts have been thrown on the fact, the stomach of the Llama is formed upon the same peculiar plan that governs the development of this viscous in the Camel. Sir Everard Home maintains that, though a portion of the stomach of the Llama is, as it were, intended to resemble the reservoirs for water in the Camel, these have no depth, are only superficial hollows, and the cells, and allow the solid food to pass into the fourth cavity, or truly digesting stomach, without going into these cells. Dr. Knox, on the contrary, has pointed out the real differences between the stomachs of the Llama and Camel, viz. differences less than had been imagined. He thus, in making observations on parts of this description, a great deal depends upon the care taken to keep the body of the subject in a fixed position. Thus we find Mr. Spoons, on the occasion of his reading his notes on the post mortem examination of a specimen, that Dr. Gray, to whom he was reading contained food; and he was therefore induced to suspect that the animal, at the time of the correctness of the generally received opinion, that these sacs are destined to act as reservoirs for fluids.

Upon this, Mr. Owen stated that he also had found in the cells of the stomach of Llama, which he had dissected more or less of food; but he suggested that this might have been forced into them by moving the animal about after death, when, muscular power being abolished, resistance to the admission of the food into the cells would have ceased. He added, that in the instance of the Camel which was killed some years since at the Royal College of Surgeons (the particulars of the examination of which have been published by Sir E. Home), the cells of the second and first cavities of the stomach were found to be filled with water and food; and that the animal, kept without drink for three days, was then allowed to drink freely, was killed three hours afterwards, and opened without being moved from its erect position. Mr. Cox, on the same occasion, suggested that the existence of such cavities of the digestive organs should be accounted for by the fact that the animals in question had been kept for many years in this country, where they were at all times provided with water; under these circumstances a receptacle for the preservation of fluid would be requisite, and the cavities above mentioned ceased to be applied to that purpose, the muscular power of their apertures would have been consequently diminished. Colonel Sykes added, that on examining, in India, the stomach of a Camel, he had found the cells devoid of food.

The metatarsal and metacarpal bones of the Camelus and Llama are easily recognised, because they are divided higher in the other ruminants and well above the ulna, a peculiar bone in the cells. The lower end of the ulna is more advanced than the other. The posterior front of the pelvis is enlarged, and its posterior border more like that of the horse; and so it is in the Llama. (Oseemens Peron.)

Professor Owen has detected an osteological character, not
visible from without, giving a succedaneous character to those parts of the paunch. The several compartments of the stomach have been laid open in this preparation to show their communications with each other and the character of their inner surface. The stomach is divided into two compartments by a strong fasciculus of muscular fibres, which, commencing on the left side of the cardiac orifice, traverses the paunch longitudinally. On the right side of this ridge, about a millimetre distal from the caecum, another muscular fasciculus pass off at right angles, and these ridges are connected by still smaller fasciculi, running transversely between them at different distances from each other; the quadrangular spaces which result from the above arrangement of fasciculi are partitioned by a production of the lining membrane, leaving a circular aperture in the centre of each square for the passage of liquids into the cells beneath. The compartment of the paunch to the left of the great longitudinal ridge terminate in two sacculi, at what may be considered the extremitas cerci. The sacculus nearest the osophagus is simple; the one farthest from it is developed into a series of cells, of a smaller size but of precisely similar construction to those on the opposite side of the paunch—a secondary muscular band pass off at right angles from the larger one, which separates the two sacculi, and these lesser bands being connected by transverse fasciculi, in the intervals of which the cells are developed. The reticulum, or water-bag, is laid open, showing that the cells in this chamber is in series of parietal fasciculi as in the rumen; but their further subdivision is carried to a greater extent, and their orifices are not guarded by membranous partitions. The external muscular coat of this cavity is so disposed that its exterior is smooth and uniform, and its cells are nearly equal. The osophagus is laid open, so as to show the muscular ridge which traverses it longitudinally, and winds round the upper part of the reticulum to terminate at the orifice of the paelterium. 'It is obvious,' continues Mr. Owen, 'that the junction of this formation, or the connection between the first two cavities and the osophagus would be cut off, and the remasticated food would be conducted, as in the horned rumenins, into the third cavity. A slighter degree of contraction would cut off the communication with the reticulum, and the passage through the paelterium or water-bag, which probably takes place when the Camel or Llama drinks. A free communication however subsists between the water-bag and paunch. A porcupine's quill is passed through the oblique canal leading to the thoracic cavity, and this canal is distinct from and intervening between the reticulum and paelterium; it is not so distinct in the Llama; but on a close inspection, the inner membrane nearest the orifice above mentioned may be seen to be produced into ridges, which are evidently of the same parietal form as in the camel. A similar structure is more distinctly observable in the Camel, this cavity was considered by Daubenton as the true analogue of the reticulum, and the water-bag as a peculiar super-addition. The remainder of the stomach in the foetal Llama may be seen to form one elongated continuous channel, bent upon itself at its lower third without rugae or laminae, the latter being afterwards developed at the cardiac half of this cavity. The pylorus is a small transverse aperture protected by a large oval protuberance. The duodenal is a distinct part of its cavity. No. 356 D exhibits a small portion of the stomach of an adult Llama, showing the canal which passes along the upper part of the reticulum, and conducts the ruminated food from the osophagus to the third cavity. The muscular fibres of the greater ridge, forming the upper boundary of this canal, are displayed: some of the fibres wind round the aperture of the third cavity, while others return and pass into the lesser ridge. It is these latter fibres, observes Mr. Owen, which, by a forcible contraction, draw up the orifice of the third cavity in the form of the comma. And between the osophagus and water-bag. The commencement of the reticulum, analogous to the third or supernumerary cavity in the Camel, is kept distended by a bristle. No. 356 D is a portion of the greater group of cells from the paunch of an adult Llama. The cuticle which lines these cells is turned down, and the subjacent membrane removed, to show the muscular fibres of the larger fasciculi, and also those of the lesser connecting bands, which are distinctly muscular, and evidently calculated to close the orifices of the cells.' Mr. Owen further observes that, after death, when these contractile parts have ceased to act, the smaller matters contained in the paunch, such as grains of oats, &c. may pass into these cells; but their contents be ejected when they are forced down the osophagus, of second cavity, or true water-bag of the Llama. This cavity, Mr. Owen remarks, is not lined with cuticles, as in the horned rumenins; the other differences are pointed out in the description of the following preparation. The walls of the reticular chamber are very thin. The deeper layers are formed of what appear to be pictures of the 22. The external membrane is thick and muscular, and the cuticle of the cells, as well as the alimentary passage in the different cavities, have been described. The Llama and Camel differ in structure, or the external muscular tunics of this part of the stomach. On the other side of the preparation a portion of the external layer of fibres is exhibited. (Catalogue, vol. i.)

Mr. Owen, in his interesting paper 'On the Anatomy of the Nubian Giraffe,' states that the action of the abdominal parieties in rumination is much stronger in the Camel than in the Llama. The Camel is furnished with two sets of teeth, and one which has not hitherto been noticed, that the Cameline Ruminants differ from the true Ruminants in the mode in which the cud is chewed. In the Camel it is ground alternately in opposite directions from side to side by the mandible and the maxilla; in the Ruminants, the jaw is ground against the upper in the same direction, by a rotary motion. The movements may be succeeded, from right to left, or from left to right, but they are never alternate throughout the masticatory process, as in the Ruminants. The Llama is furnished with humps for the humps of the true Camels on the backs of the Llamas, yet there is, according to Molina, a conformation in the latter resembling that existence, and consisting of an excess of nutritious matter, in the shape of a thick esculent under the skin, which is worked as a compensation for occasional want of food. The most marked difference appears to exist in the structure of the feet; and this difference is, as we shall presently see, demanded by the several localities and habits of the two groups. No structure can be better adapted to the mode of life of the Llama than the passage of an animal over arid sands than the elastic pad which forms the sole of the Camel's foot, on which the backbone rests. But the problem to be solved was the adaptation, in an animal of general and similar structure, of a foot to the exigencies of the case. The pad which connects the toes of the Camel beneath would have afforded no sure footing to an animal destined to climb the precipices of the Andes, and we accordingly find, in the Llama, toes with strong and incurved claws, which are not, however, separately movable, each defended by its own pad or cushion, so as to present the most perfect modification of the parts with a view to firm progression, either in ascent or descent, whilst there...
NATURAL HISTORY.

Considerable doubt has been entertained as to the number of species belonging to the genus *Auchenia*, and we shall endeavour to trace some of the accounts given, beginning with some of the earlier historians and zoologists, and continuing the inquiry down to the present time.

The Spaniards, when they conquered South America, found the Llamas, which seems to have been the only beast of burden possessed by the natives, to whom it likewise gave food and sustenance; for the flesh was eaten by them, and the hair or wool was woven into cloth. We cannot be surprised that so useful an animal should have been called by the conquerors a sheep, especially when we recollect the qualities of its flesh and of its wool; and accordingly we find the Llamas described as sheep by the earlier Spanish writers. Thus, Augustin de Zarate, treasurer-general in Peru in 1544, in his account of the conquest, speaks of the Llamas, as it was observed in the mountains of Chile, as a sheep of burthen. He says that in situations where there is no snow, the natives, to supply the want of water, fill the skins of sheep with that fluid, and make other living sheep carry the skins; for he remarks that these Peruvians are large enough to serve as beasts of burden. De Zarate evidently had the eye of a zoologist, for he says that these sheep resemble the camel in shape, though they have no hump. He states that they can carry about a hundred pounds or more, that the Spaniards used to ride them, and that their rate of travelling was four or five leagues a day. His description appears to be that of an eye-witness, and bears upon it the impress of truth. When they are tired, says De Zarate, they lie down, and the load must be taken off, for neither beating nor helping will make them get up. Their weariness is manifested in a very disagreeable way when a man is on one of them; for our author says that if the beast is pressed on under such circumstances, it turns its head and discharges its saliva, which has a bad odour, into the rider's face. He speaks of them as of great utility and profit to their masters, praising their good and fine wool, particularly that of the species named *pacos*, which have very long fleeces, and shows that they keep costs little or nothing, either in money or trouble; for they are satisfied with a handful of maize, and are able to go for four or five days without water. He declares that their flesh is as well-flavoured as that of a fat Castilian sheep, and notices the public shambles for the sale of it in all parts of Peru, frequent by these ramified. But, he remarks, this was not the case on the first arrival of the Spaniards; for when an Indian killed a sheep at that time, his neighbours came for what they wanted, and then another Indian would kill a sheep in his turn.

The Llamas soon found its way to Europe; for we find, in the 'Icones Animalium' (Gesner, &c.), a figure of one with a collar round his neck, led by a man, apparently his keeper. This figure is by no means badly executed, and is given as the * Allocusmus* of Scaliger, who speaks of it as an animal 'in terra Gigantia' (Paragonia probably), with the beard, the ears, and the neck of a mule, the body of a camel, and the tail of a horse: 'Quamobrem ex Camelot et aliis compositorum Allocusmus appellatimus.' The figure, it appears, was taken from a print, with the following account:—In the year of our Lord 1551, on the 14th day of June, this wonderful animal was brought to Middleburgh (Mittelburgum Selandium), having never before been seen by the princes of Germany, nor recorded by Pliny nor other ancient writers. They said it was a Spanish Sheep from Pro (perhaps Peru), a region nearly six thousand miles distant from Antwerp. Then follows the description, from which it may be gathered that the animal was either a brown Llama or a pied one. The neck is stated to have been white, 'cygneo color candidissime,' and the body rufus, 'rustico pulchre.'

John de Lact (fol., Leyden, 1633) appears to have collected most of the Spanish authorities up to his time. He quotes Guatien as saying that the domestic animals of the Peruvians are of two kinds, the greater and the less, with the Peruvians, as a common name, call *Llama*, that is, cattle or sheep (pecudes); thus the shepherds say *Llama michac.* They call the greater cattle (*maquis peus*) *Husmae-lama*, on account of its similitude to the wild animal which is named *Huasena*, and from which it differs in colour. For the domestic Llamas (*domesticum peus*) are found of various colours, like the horse; but the wild Llama is only of one colour, like chestnut. The greater kind have a great resemblance to a camel, except that they want the hump, 'erga ut canem, sed non humpum pecus habet.'

De Lact then turns to Acosta. 'Peru,' says the latter, 'has nothing better or more useful than what our countrymen call Peruvian sheep, but which the Peruvians, in their tongue, name *Llama*; for they bring large profit, and are kept for next to nothing (villissimo alitum). These cattle furnish the natives with wool for their vestments, like ours; and for the greater part of the wool serves to make vests of burthen. There is no necessity for shearing them, guiding them by a rein, or feeding them with oats; for these animals serve their master gratuitously, being content with the wild herbs which they meet with everywhere. There are two kinds of Llamas, one which is woolly and called *Paco-lama,* and this is only fed for its flesh and its wool, which is the best and longest; it is unequal to the carrying of burdens.'

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according as the nature of the work required. But most of the Peruvian barbarians are cunning in this weaving, and have in their huts instruments adapted for the art; and from their homes they draw the necessary goods from their life. By far the greatest use of these animals however is in carrying burthens; for sometimes 300, sometimes a drove of 1000, carry various articles of merchandise, skins of wine, chocolate (cocoa), maize, Chuno, and quicksilver to the mountains in the Soconusco. All the barbarians speak of their employment in conveying silver from Potosi, &c., and observes that he has often wondered how droves of these animals, sometimes consisting of 1000, sometimes of two only, and not infrequently laden with 3000 bars or pairs (lamas) of silver, or 90,000 ducats, should make their way, accompanied by a few barbarians only, who direct them, and load and unload their burthens, and hardly attended by one or two Spaniards, passing the night in the open air and without a guard,—and that so safely that a bar is not thrown or missed, such is the art and skill of travel which the Indians of Peru. ‘The burthen of each beast,’ continues Acosta, ‘amounts to 100 and sometimes 150 lbs., which they carry three, or at the most four, leagues a day, according to the length of the journey. But their leaders know their stations, where food and water for their cattle abound; here they pitch their tents, and unload their beasts. When however they have only one day’s journey to make, the Llamas are able to bear a load of even 200 lbs., or to move forward as many as eight or ten leagues. These animals move more easily than in the Oncecamelus and therefore are propagated immensely in the mountains, whilst they fail in the plains, on account of the too great heat. The bald sheep (calvum pocus), or Guanacos, are of a fawning (vermilo) and genial aspect: often, as they walk they show, without regard to the expression of fear or pleasure, so attentively with erected neck, that it is difficult to abstain from laughter; sometimes they are so suddenly terrified, that they run off to the mountain precipices with the greatest swiftness, so that it is not easy to catch them. For this reason it is said to be impossible for the traveler to travel without the spaniel for the conductor to stop and sit down by the animal, until by his blandishments he prevails on the animal to rise spontaneously.

It appears that the Llamas are subject to the closely, called by the ‘barbarians’ carachen, which is deadly not only to the animal which has taken it, but spreads by contagion among the flock, so that almost the only remedy is immediately to bury the diseased animal. Garcilaso however says the only occurrence to make them infectious is to wash them, and keep them in a cool place. He says they have also become so enraged sometimes, or are so wearied with their burthens, that they lie down with their burthens, and cannot be made to rise either by threats or blows; whence a proverb has arisen, and stubborn or obstinate men are said to be ‘ladrillos.’ For this there is no better proverb than for the conductor to stop and sit down by the animal, until by his blandishments he prevails on the animal to rise spontaneously.

The price of a Llama varies in different provinces; but the ‘barbarian’ who possesses two or three is considered sufficiently rich. Garcilaso adds that the Llama is the most useful animal of the whole country, not milk their flocks, which give that secretion very sparingly, and only in sufficient quantity for their young; neither did they make cheeses of their milk. De Laet then proceeds to state, that besides these domesticated animals which produce such various and useful products, there are easily to be seen in other parts of the New World, except in the neighboring country of Chili. Some of these are called Guanaco or Huanacon, from a similitude to which the domestic kinds obtained the same name. The flesh of these is good, according to Garcilaso, who does not so good as that of the domestic Huanacon Llamas. The males keep a look out on the highest hills, whilst the females are feeding in the valleys; and when the former observe the approach of men from afar, they neigh almost like a horse, to warn the females. If the men come nearer, they fly, driving the females before them. The wool of these is short and rough, but it is notwithstanding used by the ‘barbarians’ for making cloth. These animals are taken in snares and nooses. Others again are called Vicuñas: these are not very unlike goats, except that they have no horns, and are large. They have not a leonine colour or more ruddy; these live in the highest mountains and groves, and love the colder regions, but especially the solitudes which the Peruvians designate by the common name of Pumas; neither are they annoyed by snow or frost, but are rather recreated thereby. They go in flocks, and run most swiftly. Such is their timidity, that at the sight of men or wild beasts they hurry instantly into inaccessible or hidden fastnesses. There were formerly in Peru four species of Vicuñas, all of which are now become much more rare on account of the promiscuous licence in hunting. Their wool is very fine, and like silk, or rather like the wool of the Beaver, and the natives deservedly estimate it highly; for besides other properties, it is the only suitable for the preparation of the large scale of the Chino-Peruvian robe. Among the Spaniards, and the Peroes and Guanacos are the smallest and lowest in estimation, whilst those from the Vicuñas are rather larger and better, and those of the Tarugas the best of all.

We now turn to Hernandez. We direct the Roman reader (1623) a figure of the ‘Polon Ichatt Oquiola,’ Ovi Peruviana,’ with a description. Both figure and description leave no doubt that the brown Llama is the animal represented. There is a very long commentary, well worth the attention of the curious reader. Of the ‘Arte de Ochao’ the Peruvian Temazicolor says: ‘The first like the animal represented; the other small and stunted (parve et pygmaeum), with short legs, but strong nile to carry domestic burthens, such as water, corn, &c. Another kind, the Peroes, are stated not to be so corpulent. In the ‘Viva’ the Hernandes the Polon Ichatt Oquiola is called Perucchati.

Marcegrave gives a figure of the long-haired and larger Llama, under the name of Oiti-camelus. In some parts it is not bad; in others, the mule and more-four-footed animal. The larger and more-prize of the Oiti-camelus is called Poco. His description is worth consulting; and he says, among other statements, that they bore the ears of these ‘sheep,’ and run ropes through them, by which their masters manage them and lead them where they please. He then gives another figure, much larger, the other, of a second species, which is nearly naked in regard to fleece, and is only covered by a light and short one (calvum pocus of De Laet); and says that partly reason and passed that it might be well called in Greek λαμαμελεία —Elaphocamelus.

We gather then from these and other early writers, that there were three kinds of these animals, Guanacos or Huanocones, Pecos, and Vicus, the term Llama being applied to the former two merely signifying cattle; or river, but these kinds are by no means the same. Until the last century, says Mr. Bennett, ‘the great majority of naturalists, including Ray, Klein, Briasson, and Linnaeus, concurred in reducing them to two species, the Llama and Vicus. The former is supposed to inhabit entirely the high mountains of Peru and the lower Paco or Vicinus, cultivated for its flesh and wool. ’ Of this opinion was Buffon when he wrote the history of the Llama and the Paco; but the observation of living specimens of the Llama and the Vicus and the communica- tion of the Abbe Beliard and others, showed the Llama afterwards to admit the latter animal as a third and distinct from the preceding. In this he was followed by Molina, who, in his ‘Natural History of Chili,’ separated the Guanaco, and added a fifth species, the Hocuen or Chilian sheep, which is not so good as the Guanaco. Shrewsbury, in his almost every subsequent compiler, have adopted these five species without exception, giving to them such synonyms as they could pick up almost indiscriminately from the writers on the natural history of America, and thus creating a mass of confusion which it would be both vain and useless to attempt to unravel.” (Gardens and Memo- ries of the Zoological Society.)

Perrault gives as species the Llama, the Vicus, the Paco, the Guanaco, and the Chilheque, but gives figures for only one of these: the Llama, the Paco, and the Vicus; M. Lessien gives the same; Dr. Fischer records the same three and a fourth. Auchenia Aracuna (Chiliheque) as doubtful. In his ad- deda e emendanda he notices L-Huanacon (Auchena
Hussaca, Hamilt. Smith; Cervocomela of Jonston) with a query if it is not a mere variety of L. Peruana. As a synonym to Lama Josco he adds Auchenia Paco (Hamilt. Smith), Camaelus Quagetti (Cuvier), and to L. Arucana Auchenia Arucana (Hamilt. Smith), less than the former, and to L. Arucana Auchenia Arucana (Hamilt. Smith).

Mr. Bennett observes that it seems to be the general opinion among the leading writers of the present day that the subdivision of the genus has been carried too far, and that there is no necessity for dividing it into two species. He thinks that M. F. Cuvier is fully justified by the imperfect accounts of Molina in rejection as species the Guanaco and the Huemul. Mr. Bennett states that he should have little hesitation in proceeding still farther, if he were strongly inclined to agree with Baron Cuvier in regarding the Paco as a mere variety of the Llama with the wool more amply developed; and in considering the Vicuña as the only animal of the group that deserves to be specifically distinguished from the latter. Skeletons of both the Llama and the Vicuña are preserved in the Museum of the College of Surgeons, London.

Geographical Distribution.—The Cordiller a of the Andes, below the line of perpetual snow. Peru (but not in Mexico) and Chili principally, though now much reduced in number in Columbia and Paraguay they are more rare. Most of the navigators to the Straits of Magellan and south-western coasts of America mention Guanacoos from early times down to the expeditions under Captain King and Captain Fitzroy inclusive, and the flesh of these animals has afforded a salutary refreshment to the crew.

Habits, Food, Reproduction, &c.—The habits of the Llamas may be in great measure gathered from the descriptions of the Spanish writers above given. In a wild state they keep together in herds, sometimes numbering two hundred, feeding on a sort of rushy grass or reed called yecho, which grows on the mountains, and, it is said, never drinking when they have sufficient green herbage. They resort to a particular spot to drop their dung, which is a good deal resembles that of a goat, sheep, or giraffe, a habit which is often fatal to them from betraying their haunts. Modern observers have noticed the careful look-out that they keep, and the rapidity with which they flee, then to turn and gaze, and again swiftly gallop off. Molina says that the Guanacos leave the mountains in spring, pass the summer, and at the beginning of winter, when they descend to the plains. Here they are hunted down, at least the young and inactive, with dogs by the Chilians. During the chase they are said frequently to turn upon their pursuers, neigh loudly, and then take another scene again. Another mode of capturing them by the Indians is for many hunters to join and drive them into a narrow pass, across which cords have been drawn about four feet from the ground, with bits of cloth or wool tied to them at small distances, somewhat in the way adopted by gardeners to keep small birds from the apples. This apparatus with its pendent trumpery frightens the animals, and they get together, when the hunters kill them with stones tied to the end of leathern thongs. If there are any Guanacos among them, they leap the cords and are followed by the Viscacha. Those that have been seen in captivity have been tolerably mild and tame, but very capricious, accepting biscuits and such delicacies from visitors, but ejecting a copious shower of saliva in their faces at the least real or fancied affront. This shower, though sufficiently unpleasant, has not, as far as our experience goes to the scolding and blistering properties ascribed to it by some authors. Genitalia masculina tenue est, et recurvum. Est autem luxuriosum valde, et turpis in exercendo veneere actu, quam ululam mundi animal. Females (or Viscachas) have their tails long hanging, its se componit, ut illus ille superveniunt quae, qui tunc temporis geminitus specie maxime vociferatur, ac nulli tunc quasi fit, quam quod unusum alterum conspexit, et non raro dimum integrum conspicit, anique sequam ipsum quaerat, alias, qui cum aliquando adhuc ab homine in caelo advertit. Accipit, a quo non amicus, a quo non amicitia, a quo non amicus a quo. At this account of the commentator on Hemandez we can bear testimony. The female, which has only two teats, is said to go six months with young.

Utility to Man.—We need not here repeat those uses to which the animals have been applied by man. Cords and nets, as well as stuffs for ponchos, &c., are fabricated from the wool, and the bones are converted into instruments for

In reference to the wool we may here state, that a herd of 66, including the Alpacas and Vicuñas, were sent from Lima, Peru, and Concepcion, Chili, to Huasco Ayra by journeys of two or three leagues. To those who may be inclined to import these animals it may be necessary to state that they were fed during the journey with potatoes, maize, and hay: as soon however as the potatoes were exhausted, constipation came on so obstinately that medical relief was required. They were shipped as a present from the French to the Emperor of Russia, and only eleven arrived at Cadiz in 1808, just as Godoy fell into disgrace. Here they died, and instead the rest were being thrown into the sea by the inforable rabble, in their detestation of the late minister and minister. The post Llamas were however saved from the tender mercies of the populace by the governor of Cadiz, and were consigned to Don Francisco de Terron of Andalucia, who had a fine menagerie at San Leode in Zaragoza. The French occupied the province, National South protected them, and M. Bury St. Vincent, who was with the army, studied their habits and executed drawings of them, which were lost at the battle of Victoria. M. Bury paid great attention to their wool, and some of them of the kind was sent to the Academy of Sciences at Paris. From the report of the French naturalist and the philosopical Spaniard, it would appear that the fleece of the Alpa-Vicuna (produced by a cross between a Vicuna and an Alpaca) has much greater length than that of any other variety and is six times heavier.

See The Monagas, vol. I., published by the Society for the Diffusion of Useful Knowledge, where much interesting information is collected.
look in vain for those progressive developments of civilization, these moments of repose, these resting-places in the life of a people. . . . Those species of ruminating animals which constitute the riches of the people of the Old World are wanting in the New. The bison and the musk ox have not yet been reduced to the domestic state; the enormous multiplication of the Llama and the Guanaco have not produced in the natives the habits of the pastoral life. These multitudes are already lessened, and the form itself will probably ere long be extinct. Civilization has brought with it the animals of the Old Continent. The horse and the mule have almost entirely superseded the Llamas as beasts of burden, and the sheep and the goat, in great measure, as contributors to the food and raiment of man.

The white Llama, according to Feuillerie, is said to have been the presiding deity of the natives of Calia, before that province was annexed to the empire of the Yncas.

ARRANGEMENT.

The similarity to the Camel appears to have struck every writer who has treated of the Llama.

Linnæus places the genus Camelus at the head of his

Pecora, and makes Glama and Pecos species of that genus. Camelus is followed by Moschus.

Pennant also arranges the Llama and Pecos, &c., under his genus Camelus, which is placed between the Musk and the Hog.

Gmelin retains the Linnean arrangement, adding three (so called) species to those recorded by Linnæus.

Cuvier places the great genus Camelus at the head of the Ruminants, and makes it consist of the Camelus properly so called and the Llamas (Auchenia). Camelus is followed by Moschus.

Mr. Gray makes his subfamily Camelina, the third of his family Bovidæ, consist of Camelus and Auchenia.

M. Lesson arranges the Llamas as the third genus of his Camelidæ, the two first being Camelus and Mesochoerus. This third and last genus is immediately succeeded by the Moschidæ.

Dr. Fischer, following Linnæus, places Camelus at the head of the Pecora; that genus is followed by Lamas; and Lama by Moschus.

Mr. Swainson (1833) makes the Soltipes, single-hoofed quadrupeds, his fifth tribe of Ungulata, consist of the genera Camelus, Auchenia, and Equus.

Mr. Ogilby (1836) gives the Camelidæ as the first family of the order Ruminantia, with the following characters:

Fam. 1. Camelidæ.

Feet subbisulcate, callos beneath, toes distinct at the tip from the sole; no spurious hoofs, no horns; incisor teeth, two above, six below.

2. Genus.

1. Camelus, whose characters are—

Toes conjoined, immovable.

Muzzle furnished with a chiloma,* the upper lip (labrum) divided.

Lachrymal Sinuses, none.

Interdigital Pits, none.

Ingual Follicles, none.

Teats, four.

2. Auchenia.

Toes disjoined, moveable.

Muzzle furnished with a chiloma, the upper lip divided.

Lachrymal Sinuses, none.

Interdigital Pits, none.

Inguinal Follicles, none.

Teats, two.

* Tumid upper lip contiguous with the nose or nostril.
differ essentially, observes the former, from other Rumina
sants in the structure both of the organs of locomotion and of
mentation, and their generic distinctions consequently
depend upon characters which have no application to the re-
maining groups of the order. On the other hand, the prin-
ciples of generic distribution which subsist among the rest
of the Rumination appears in Mr. Ogilby's opinion to furnish
negative characters only when applied to the Camelidae;
but it is also maintained that the camel must be a living,
achyrhal, inguinal, and interdigital sinuses forms, in
reality, positive and substantial characters; and as such,
should be introduced into the definition of these, as well as
of the Llamas. Hence, in this respect, the Antelopen appear
in a negative form. The Camelidae, in Mr. Ogilby's arrange-
ment, are immediately followed by the Cervidae. (Zool.
Proc. 1836.)

No fossil species of Auchenasia has yet been discovered;
and, as of that family, the most remarkable is the well
known remains of a most interesting animal nearly allied to the
Llamas, which Mr. Owen has characterized under the name of
Macrauchenia. (Macrauchenia.) The cervical verteb-
rae in this form present the same characters in the absence
of the holes for the vertebral arteries in the transverse pro-
cesses as in the Llamas and Camels. (Owen.)

Llandaff. [GLAMORGANSHIRE] Llanilo. [CAERMAERTSHIRE]
Llandovey. [Cærmarthenshire.] Llangeby. [Cardiganshire] Llangollen. [DENISBROUGH]
Llanos. [PLAINS.] Llanrenist. [DENBIGHSHIRE]

LO. ST. a town in France, capital of the department of
Maine-et-Loire, lying to the west of Paris, in a straight
line, or 171 miles by the road through Evreux, Lisieux, and
Cen. The origin of this town is disputed. It stands on the
river Vire, and is irregularly built: it has a fine 'place'
or open space. There are four parish churches, of which
that of Saint-Denis is the most ancient. If the church of Saint-
Crux is in the Norman style, of which it is considered to be
the best preserved specimen in France. The prefect's
office, lately erected, the town-hall, the courts of law, and
the prison, are the chief public buildings. The population,
in 1821, was 48,947; in 1836, it was 60,965. In the commune;
in 1836 it was 90,625 for the commune, showing an
increase in five years of 6,449, or about seven and a half
per cent. The chief manufactures are of fine woolen cloths,
ericles, dragoons, and woollen awnings; bed-sheets, calicoes,
and other kinds of cloth; leather, combed
and 

The soil in the neighbourhood. The chief trade is in the above
manufactures; iron, salt butter, cider, honey, corn, cattle, horses,
and draft. There are eight weigh-rooms in the year.

The annual reports of Agriculture and Commerce, a
high school, a public library of 5000 volumes, an hospital,
a theatre, public baths, and several government offices.
The arrondissement comprehends 435 square miles, and
in 1821, a population of 99,269; in 1836, of 102,717.
It is subdivided into nine cantons and 120 communes.

Loach. [Coen.] Loadstone. [Iron—Ores]

Loam, a soil compounded of various earths, of which
the chief are silicious sand, clay, and carbonate of lime,
or chalk. The other substances which are occasionally
found in loams, such as iron, magnesia, and various salts, are
rarely found in such proportions as materially to alter their
nature. Decayed vegetable and animal matter, in the
form of humus, also enters into the composi-
tion of this soil, and is of considerable
quantity, and the soil is fertile in proportion.

According as the loams are composed, so they vary in
quality. Those which consist of a great portion of loose
sand, with little humus, and with an impregnation of iron,
are the best, and form the subsoil of most of the
loamy soils of England; the loam subsoil of one
farm may be worth double the rent of another,
where the apparent difference in the soil is very trifling.
Those who have had long experience of the expense of
cultivation, and the advantage produces of certain
areas, can

The analysis and classification of soils is of the greatest
importance to all those who take farms; for the rent of
land is very seldom proportioned to the soil as its
true value; and young—ready-prepared food easily converted into vege-
table juices.

One farm may be worth double the rent of another,
where the apparent difference in the soil is very trifling.
stranger, coming to take a farm from a distant district is almost invariably deceived. Why should not the value of a soil be ascertained as readily as that of any article of commerce? If there were certain points of comparison, it would be so; but in this the theory of agriculture is woefully deficient. A man guesses at the qualities of land by the colour, the feeling, and other uncertain signs; it seldom or never occurs to a farmer to examine the component parts of a soil, by merely diffusing a portion in water, and testing the deposits—much less to compound artificial soils, and compare them with those found in the fields. Yet every gardener can make soils suited to different plants, and make loams of all degrees of richness or consistence. In all these it will be found that sand, clay, chalk, and decayed vegetable substances, in various proportions, are the chief ingredients. If it be found, in the loam, that it can be made to form a spongy, so-called "vegetable" loam, we cannot safely conclude that it will be equally productive, and the deficiency of any one ingredient may be supplied artificially. This would be going rationally and scientifically to work; and the result would be a more certain and satisfactory outcome for the farmer.

It might be an interesting and highly useful inquiry to ascertain the effect of the contact of various kinds of earth, moistened with water, in exciting galvanic action, which no doubt greatly influences the chemical affinities of the elements from which the plants derive their increase. It is a subject which has scarcely ever been noticed, and we would strongly recommend scientific experiments in this branch of vegetable physiology.

LOANGO, on the west coast of Africa, is the most northerly of the coast-line of the continent. It is anciently constituted the kingdom of Congo, as explained in the articles Congo, Angola, and Benguela. In the first-mentioned of these articles there is an enumeration of the chief authorities from which we derive our information respecting this fact.

Loango extends along the coast from Cape Lopez Goncalo in 4° 44' S. lat. to the river Congo or Zaire, which separates it from Congo in about 6° S. lat. To the north it is bounded by Gabon, to the south by the country called Moko, or Azoko. Pigafetta, on the information of Duarte Lopez, extends its limits into the interior about 200 miles from the coast.

According to Oiffer Dapper, Loango, or Loanga, as he writes it, to be properly constituted the country, was actually only one of the divisions of the territory properly so called, others being Mayombo, or Majumba, Kilongo, Piri, and Wansi. Other early accounts describe the principal provinces of the kingdom of Loango as being Loangiri, Loangomongo, Kilongo, and Piri. To these others add Sette, Gobbi, and other districts.

Loango, the capital town, called by the natives Banza Loangari, is in the province of the same name, which occupies the south-western angle of the country. It stands in a large plain, at the distance of three miles from the sea. It is described both by Battel and Dapper, and the latter also gives an engraved representation of it. Here, among other buildings is or was attached to the royal palace the dwelling of the king's wives, stated to be five hundred in number. The reigning king in Battel's time (1589—1607) had four hundred wives.

Another account gives the king seven thousand wives, one of whom occupies a very extraordinary position, having, it is affirmed, the right of directing the entire public conduct of the king; and of taking his life if he refuse to obey her commands. She is married to the king, she may choose any other man she pleases for her lover, and all the children she produces are still accounted of the blood royal. At the same time it is death for her gallant to be surprised in the embraces of another woman. This highly privileged lady is nominated by the king himself to the post she fills, and is known by the name of the Makonda.

The government, like that generally prevalent among the barbarous tribes of this part of Africa, is the most absolute species of despotism. Battel states that the kings of Loango are believed by their subjects to possess all the divinities that the titles by which they are known, Samba and Pango, have that signification in the language of the country. In particular, they are held to have the power of bringing down rain from the sky; and this useful present they exercise every year, on the petition of their subjects, with great ceremony. On one occasion when Battel was present, an abundant shower fell on the afternoon of the same day on which the king, seated on his throne, and surrounded by
The connexion between Abyssinia and Portugal had begun nearly a century before, when the Negus, or emperor, David, had asked the assistance of the Portuguese against the Moslems. In 1675, the Englishman Christopher de Gama, one of the sons of the discoverer Vasco de Gama, was sent from India with 400 men to Abyssinia.

Lobo sailed from Goa in 1624, and landed at Paté, on the coast of Mombasa, hoping to reach Abyssinia by land. The empire of Abyssinia then extended farther to the south than it does at present; and this route was considered by the Portuguese in India as preferable to that by the Red Sea, the coasts of which were in the hands of the Turks. The Negus of that time, Daud, was at war with the Gallas, among the Gallas, of whom he gives an account, but finding it impracticable to penetrate into Abyssinia by that way, he retraced his steps to the coast and embarked for India.

The following year (1625) he sailed again with Mendes, the newly appointed patriarch of Ethiopia, and other missionaries. This time they sailed up the Red Sea and landed at Belor, or Bela Bay, 13° 14' N. lat. on the Dacatell coast, whose sheik was tributary to Abyssinia, and thence fired a harquebus at the Negus, and demanded the submission of that kingdom. A revolt of the viceroy of Tigré, Tecla Georgis, put Lobo in great danger, for the rebels were joined by the Abyssinian priests, who hated the Catholic missionaries, and indeed represented the protection given to them by the Portuguese as a curse; and Lobo, who was still more than ever conscious of the perilous character of his mission, made a complaint against him. The viceroy however was defeated, arrested and hanged, and Lobo, having repaired to the emperor's court, was afterwards sent by his superiors to the kingdom of Damot. He bore introductions in his narrative to the account of the country, the people, and the climate. From Damot Lobo after some time returned again to Tigré, where the persecution raised by the son and successor of Seguid overtook him. All the Portuguese, to the number of 400, with the patriarh, a bishop, and eighteen Jesuits, were compelled to leave the country in 1634. They put themselves under the protection of the by a mouth, whom however they were given up to the Turks at Mauwah, who demanded a ransom. Lobo was sent to India for the purpose, and he endeavored strongly to persuade the Portuguese viceroy to send a squadron with troops to take Seguid, whom he described as a malefactor and a liar, and he also probably the means to follow his advice, and referred him to Lisbon. Lobo sailed for Europe, but, as he himself says at the end of his narrative, 'never had any man a voyage so troublesome as mine, or interrupted by such a variety of unhappy events.'

In 1640 he returned to India, and became rector and afterwards provincial of the Jesuits at Goa. In 1656 he returned to Lisbon; and in 1659 he published the narrative of his journey to Abyssinia, under the title of 'History of the Kingdom of Abyssinia,' composed by the Abbé Legrand, who added a continuation of the history of the Catholic missions in Abyssinia after Lobo's departure, and also an account of the expedition of Focett, a French surgeon, who reached that country from Mombasa. The brilliant attempt made by Du Roile, who bore a sort of diplomatic character from the French court, but was murdered on his way, at Semnar, in 1705. This is followed by several dissertations on the history, religion, government, &c., of Abyssinia. The whole was translated into English by Dr. Johnson in 1738. There had already appeared in
1675 a little work published by the Royal Society of London, said to be translated from a Portuguese MS., styled 'A Short Description of the River Nile,' which is also found in Thévet's collection, and the original of which is Lobo's. Many of the particulars coincide with those in the larger narrative. Lobo died at Lisbon in 1678. He was a man of abilities, energy, and perseverance, and altogether well qualified for the mission which he undertook.

LOBOPHYLLIA. A portion of the animals included in Lamarck's genus Caryophyllina is thus named by Blainville.

[MADREPHYLLIDAE.]

LOBSTER, a name given to the Crustacea; CRUSTACIA; HOMARUS.

LOBULFRIA, a group of recent zoophyta, separated from the Linnaean Alcyonia. [ALCYONIDAE.]

LOCARNO. [ Ticino.]

LOCHABER, a district of Scotland in the south-west of Inverness-shire, it takes its name from 'Locha-bhair,' signifying the mouth of the lakes. The north-western boundary of this district is formed by Loch Eil, Loch Lochie, and the Caledonian canal, which is terminated by the shores of Perigh and Argyyle, from which it is partly separated by Loch Leven. The north-eastern boundary is formed by the district of Badenoch, but the natural limits in this direction are not distinctly defined, and moreover, a number of different authors are not in accord. In the map of Inverness-shire published in the 'New Statistical Account of Scotland,' the north-eastern boundary is nearly a straight line joining the southern extremity of Loch Eil and the northern extremity of Loch Lochie, to which the greatest length of the district, from north-west to south-east, does not exceed 32 miles, while its greatest width, between Lochies and Lochie, is about 16 miles; and as its form, through being closely triangular, the area must be about 320 square miles. But the district is very well known and published by the Sociedad and the Diffusion of Useful Knowledge the district appears to extend as far north-east as Loch Spey, whereby its superficial extent is somewhat augmented.

LOCHES, [voue et loire.]

LOCH, Cl.

LOCK, MATTHEW, an English composer of great and deserved celebrity, was born in Exeter, and, as a chorister of the cathedral, was instructed in the elements of music by Wake the organist. He completed his studies under Rasper Gibbons, a brother of the illustrious Orlando. The continuator of Baker's Chronicle tells us that Lock was employed to write the music for the public entry of Charles II.; shortly after which he was appointed composer in ordinary to the king, and returned on the 23rd year of the period of the Restoration, the date of his birth may be fixed at 1653. His first publication was under the title of a Little Consort of Three Parts, for Viols or Violins, consisting of pavans, ayres, sarabandas, &c.; the first part being ornamented with a head and a tail, that catch can be glee, &c., by Lock, and among them that agreeable piece of vocal harmony, 'Never trouble thyself about Times or their Turnings.'

Lock was the first English composer for the stage. He set the instrumental music in the Tempest, as performed in 1673; and in the same year composed the overture, airs, &c. to Shadwell's Psyche, which he published two years after, with a preface betraying the symptoms of that irretrievable temper which subsequently displayed itself in very grave quarters. He was appointed to a quire of the chapel-royal; and next, in his opposition to a plan proposed for a great improvement in musical notation by the Rev. Thomas Salmon, A.M., of Trinity College, Oxford. This plan was in terms in which he expressed himself in a pamphlet, entitled 'Observations on a late Book called an Essay,' &c., which is an answer to Salmon's proposal, are at once distinct proofs of the Lock's uncontrolled violent disposition, and of his utter incapability of justly estimating a plan which would have procured highly beneficial to the art, or of his selfishness in opposing what may have thought likely to militate against his personal interests. [CLER.] His resistance, backed by his prejudiced brethren, was unfortunately successful, and an opportunity was lost which, had the question been settled with equal delay renders more difficult to effect, though ultimately, and at no distant period, the amendment solicited by the above-named mathematician, or a still more complete and decided one, will be forced on the professors of music.

Lock contributed much to the musical publications of his day. His sacred compositions, some of which appear in the Harmonia Sacra, and in Boyce's Collection of Church Music, are quaint, though they show that he was a master of harmony. In his Musick of Fools, he undertook to cast off the old style, and which will float his name down the stream of time: 'it is,' says his biographer, in The Harmonic, 'a lasting monument of the author's creative power, and of his judgment. If the age in which it was produced, and its infirmities of dramatic, harmony, and imitation, and the untidiness and imperfection of instruments, and the humble condition of what was then called an orchestra, be all duly considered, his work will be described, not as a "spark," as Dr. Burney calls it, but as a blaze of genius, the brightness of which will illuminate the age through ages.' This work was, however, never known or heard of in London, and which, could it have been aided by the enlarged means so plentifully afforded in after-times, would now have shone with a splendour that has rarely been equalled in any age or country.

In 1677, having a few years before become a member of the Roman Catholic church, as a consequence of his conversion, he retired from the king's service, and was appointed organist to the consort of Charles, who was of the communion adopted by the composer.

LOCKE, John, 1632-1704, an English philosopher, born at Wrington, near Bristol, on the 29th August, 1632. By the advice of Colonel Popham, under whom Locke's father had served in the parliamentary wars, Locke was placed at Westminster School, from which he was elected in 1651 to Christ Church, Oxford. During his residence at Oxford he began his studies in the study of classical literature; and by the private reading of the works of Bacon and Descartes, he sought to acquire that skill in which he did not find in the Aristotelian scholastic philosophy, as taught in the schools of Oxford and Cambridge. This may have contributed, by their precision and scientific method, to the formation of his philosophical style, yet, if we may judge from the simply controversial notices of them in the Essay concerning Human Understanding, they are by no means exercised a negative influence on the mind of Locke. While the principle of the Baconian method of observation gave to it that taste for experimental studies which forms the basis of his own system, and probably determined his choice of a profession. He adopted that of medicine, which however the weakness of his constitution prevented him from practicing.

In 1664 Locke visited Berlin as secretary to Sir W. Swan, envoy to the elector of Brandenburg; but after a few months returned to England, and, after a year, returned to Oxford, where he was introduced to Lord Ashley, afterwards earl of Shaftesbury. Locke accepted the invitation of this nobleman to reside in his house; and from this time he attached himself to his fortunes during life, and after death vindicated his memory. Locke was one of the original subscribers to the Encyclopaedia, and, in the latter part of his life, was one of the most eminent writers on the subject of politics. Locke was a favorite of Lord Ashley, Count de Shaftesbury, titre de Dupin de M. Locke, et redigées par Le Cure, Bibliothèque, t. vii., p. 146.] In the house of Shaftesbury Locke became acquainted with some of the most eminent men of the day, and was introduced to the earl of Northumberland, whom, in 1668, he accompanied on a tour into France. Upon the death of the earl, he returned to England, where he again found a home in the house of Lord Ashley, who was then chancellor of the exchequer, and Locke was employed to write a book, which went to the government of Carolina, which province had been granted by Charles II. to Lord Ashley with seven others.

In 1670 Locke commenced his investigations into the nature and extent of the human understanding, but his numerous avocations long protracted the completion of his work. In 1672, when Ashley was created earl of Shaftesbury and made lord chancellor, Locke was appointed secretary of presents. This situation he held until Shaftesbury resigned the great seal when he exchanged it for that of secretary to the Board of Trade, of which the earl still retained the post of president.

In 1673 Locke was admitted to the degree of bachelor in medicine, and in the summer of the same year was admitted to the faculty of the College of Physicians, with which he remained till 1682, when he entered into a great contract with the Society of the Middle Temple, as an attorney. He left his chambers, and, after some years, settled in the Western part of London, where he ultimately took up his residence, there he formed the acquaintance of the earl of Pembroke, to whom he afterwards dedicated his Essay concerning Human Understanding.
ing." In 1679 Locke was recalled to England by the earl of Shaftesbury, who had been restored to favour and appointed president of the council. Six months afterwards however he was again disgraced, and, after a short imprisonment in the Tower, was ultimately compelled to leave England in 1686, and disappeared from the political stage for fifteen years. 

Locke followed his patron to Holland, where, even after the death of Shaftesbury, he continued to reside; for the hostility of the court was transferred to Locke, and notwithstanding a work opposition on the part of the dean, his name was erased, by royal mandate of the 16th of November, 1664, from the number of the students of Christ Church. But the nature of the court-party extended its persecution of Locke even into Holland, and in the following year the English envoy favoured his family. The exiled Locke, with eighty-three other persons, on the charge of participating in the expedition of the duke of Monmouth. Fortunately Locke found friends to conceal him until either the court was satisfied of his innocence or the fury of persecution had subsided. He was then permitted to return to Holland, where he was again associated with Leclerc, and other learned men attached to the cause of free inquiry, both in religion and politics. Having completed his "Essay concerning Human Understanding" in 1689; and the "Essay on Toleration", which was translated into French by Leclerc, who inserted it in one of his Bibliothèques. In that of 1686 he had already published his "Adversario Methodus, or a New Method of a Common-place Book," which was originally written in French, and translated into English by a Dutchman. In 1689, the "Essay concerning Human Understanding," with a preface by Dr. Edwards, was published in London under the title of "A Vindication of the Reasonableness of Christianity," &c. In 1697 Locke was again engaged in the controversy, in consequence of the publication of a "Defence of the Second Treatise of Tillingstone," bishop of Worcester, in which the bishop had censured certain passages in the "Essay concerning Human Understanding," as tending to subvert the fundamental doctrines of Christianity. Against this charge Locke ably vindicated his position, and the controversy, after having been maintained for some time, was at length terminated by the death of Tillingstone.

Locke's health had now become so impaired, that he determined to resign his office of commissioner of trade and go to France to recover his health. He was offered him, and which his services in the public cause had amply merited. From the time of his retirement he resided always at Oates, and devoted the remainder of his life to the study of the Holy Scriptures. Among others of his posthumous works, were a "Defence of the Second Treatise," and "Paraphrases, with notes, of the Epistles of St. Paul," together with an "Essay for the Understanding of St. Paul's Epistles by consulting St. Paul himself," were published among his posthumous papers. These contained also the work, "Of Christian Liberty of the Understanding," and an "Examination of Father Malebranche's opinion of Seeing all things in God." He died on the 28th October, 1704, in the seventy-third year of his age.

The personal character of Locke was in complete harmony with the opinions which he so zealously and so ably advocated. Truly attached to the cause of liberty, he was also willing to suffer for it. Perfectly disinterested, and without any personal objects at stake in the political views with which he was connected, he was translated, and the sincerity of his own profession rendered him tolerant of what he believed to be the conscientious sentiments of others.

As a writer Locke has a happy facility in expressing his meaning with perspicuity in the simplest and most familiar language. Clearness indeed is the leading character of his composition, which is a fair specimen of the best prose of his period. His style however is rather diffuse than precise, the same thought being presented under a great variety of aspects, while his reasonings are somewhat prolix, and his elucidations of a principle occasionally unnecessarily protracted. These are faults however which, though they may materially detract from the merits of his composition as a model of critical correctness, have nevertheless greatly tendency in the "Essay concerning Human Understanding" a popular work.

A rapid analysis of this Essay is necessary to enable us to form a right estimate of the philosophical merits of Locke.

As all human knowledge ultimately reposes, both in legitimacy and extent, on the innate correctness of the cognitive faculty, which Locke designates by the term "understanding," Locke proposes to determine what objects our understanding is and is not fitted to deal with. With this view he proposes to place himself in the position of a government, permitting men's consent of men making use of their reason to unite together into a society or societies. The philosophical basis of this treatise formed a model for the "Conrat Social" of Rousseau.

The idea of London disappearing with Locke, who suffered from a constitutional complaint of asthma, he accepted the offer of apartments in the house of his friend Sir Francis Masham, at Oates in Essex, where he resided for the remainder of his life. In this retirement he wrote his third letter on Toleration, which called forth a reply from Locke's former antagonist on the subject; in answer to whom a fourth letter, in an unfinished state, was published after the death of Locke. In 1693 he first gave to the world his "Thoughts upon Education," to which likewise Rousseau is largely indebted for his "Emile." Through an indiction of the commissioners of trade and plantations in 1695, Locke still found leisure for writing. The treatise, which was published in this year, "On the Reasonableness of Christianity," was intended to facilitate the execution of a design in which William III. had adopted to the general satisfaction of all sects of professing Christians, and accordingly the object of the tract was to determine what, amid so many conflicting views of religion, were the points of belief common to all. It was published by Dr. Edwards, in his "Soci- nianism unmasked," and a second "Vindication of the Reasonableness of Christianity," &c. In 1697 Locke was again engaged in the controversy, in consequence of the publication of a "Defence of the Second Treatise of Tillingstone," bishop of Worcester, in which the bishop had censured certain passages in the "Essay concerning Human Understanding," as tending to subvert the fundamental doctrines of Christianity. Against this charge Locke ably vindicated his position, and the controversy, after having been maintained for some time, was at length terminated by the death of Tillingstone.

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common assent of men to certain fundamental principles may be explained otherwise than by the supposition of the joint interest, and common interest is the root of the conclusion unnecessary. But, in particular, he denies that there are any such universal and primary principles as are admitted by all men, and known as soon as developed, for to these two, if we add all the rest, we shall usually advance in support of this hypothesis. Thence, of speculative principles, he takes the principles of contradiction and identity, and shows, by an inductive appeal to savages, infants, and idiots, that they are not universally acknowledged; and as to the principles of identity, he appeals to observation of the infant mind, as proving that they are far from being the first ideas of which the human mind is conscious. The principles of morals are next submitted to a similar examination; and lastly, he shows that no ideas are innate; for the purpose of selecting the ideas of God and substance, which, by a like appeal to savage nations and children, he proves to be neither universal nor primary, and arrives at the conclusion that neither particular ideas nor general principles of knowledge or morals are antecedent to experience.

The only source of human knowledge is experience, which is two-fold, either internal or external, according as it is employed about sensible objects or the operations of our minds. Hence there are two kinds of ideas, ideas of sensation and ideas of reflection. The latter are called internal; the former are called external.

The whole nature of man's knowledge is, to be made up of ideas which are innate. The human mind, Locke maintains, is at birth a tabula rasa, blank and empty. There are no innate ideas. All ideas are acquired through experience. The mind is passive and receives ideas from the senses. The senses are the windows to the world and the means by which we gain knowledge.

The mind, Locke argues, is like a blank slate that is inscribed by experience. The ideas come from the senses, not from within the mind. The mind is a tabula rasa, a blank slate, and all knowledge is derived from experience. This is the fundamental idea of Locke's empiricism. The mind is not pre-programmed with any innate ideas, but it is shaped by experience. Locke's theory of the mind is a rejection of the Platonic and Aristotelian views of the mind, which held that the mind contains innate ideas or forms.

The ideas that are derived from experience are the basis of all knowledge. They are the raw materials of the mind, and from these materials the mind constructs its understanding of the world. This understanding is not innate, but it is gained through experience.

The mind is not a passive receiver of ideas, but an active constructor of knowledge. The mind is not a tabula rasa, but a mind that is actively engaged in the construction of knowledge. The mind is not a blank slate, but a mind that is actively engaged in the construction of knowledge.
this 'property in ideas, that one suggests another, and this
is the so-called association of ideas. There are associations of
ideas which are natural and necessary, as well as arbitri-
ary, false, and unnatural combinations. The danger of
this last act at rest if true and of not having seen objects connected together by chance.

Hence the association, which was originally purely accidental, is in-
vitably connected in the imagination, which consequently bas-
des the judgment. Hence to a number of errors, not
true and clear, but only by error and chance, are
sympathies and antipathies which not unfrequently closely
verse upon madness. This gives occasion to a variety of
judicious observations on the right conduct of education,
both in the social and in the liberal, on the nature of
natural combinations of ideas, and the method of correcting
them when once formed, and of restoring the regular and
due associations which have their ground in the very nature of
the human mind and its ideas. What however are the
laws of association Locke has not attempted to de-
termine.

Before passing from this deduction of ideas to the exami-
nation of the nature and extent of the knowledge which is
acquired by means of them, Locke devotes the third book of
his thoughts to two collections, or aggregates of signs,
which is not important for our purpose to state.

Locke then proceeds to determine the nature, validity,
and limits of the human understanding. All knowledge,
strictly defined, is the perception of the agreement or dis-
agreement of ideas; in the one, that of ideas, in the other,
that of the objects of ideas. It extends therefore only so far as we are able to per-
cieve the validity of the combinations and relations of our
ideas, that is, so far as we are enabled to discover them by
motion, demonstration, and sensation. Intuition, which is
enough to show that it must be admitted that there
no other way to apply to all ideas; must be proved by means of some
intermediate ideas. This is the province of demonstration,
the step by which of which is an act of intuition. De-
motion again does not apply to the proof of all ideas,
but in the case of many, to the demonstration and limits of
ideas by intuition, and we cannot have an idea without perceiving
at the same time that it is different from all others. With
regard to co-existence our knowledge is unlimited; for our
knowledge of substances are mere collections, or aggregates of ideas, which is not important for our purpose to state.

Locke next passes to an examination of propositions,
axioms, and definitions. The utility of axioms is denied
on the ground that they are not the only self-evident pro-
positions, and because equal if not greater certainty
is obtained in all particular and general propositions and limited
ones. Moreover they do not serve to facilitate knowl-
dge, for all particular propositions will find a more ready
acceptance; as, for instance, the proposition, twice two are four,
will be more easily admitted than that the whole is equal to the
part. Setting out from the sensory things, we have no intuitive knowledge thereof, except in the
case of our existence; that of God is demonstrative,
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which we conceive of objects are furnished to the mind from the same source.

The works of Locke have been collected and frequently published in 3 vols. fol., and a Life of him was written in 1772; but the most complete and best edition is in 10 vols. N.Y., London, 1801 and 1812. A Life of Locke was published in 1829, by the late Lord King, a linear descendant of his sister.

LOCKED JAW. [Tetanus.]

LOCKEREN, a town of East Flanders, in 51° 8' N. lat. and 3° 58' E. long., distant 6 miles north-west from Delemere, 1 mile from Ghent, and 25 miles by a high road from that city to Antwerp. On the 1st of January, 1831, the population of the town amounted to 16,606 souls, and the number of houses to 2378. Several of the streets are regular and well built; the market-place is large, and surmounted by a church; there are also a large hospital, built in 1529, with funds chiefly contributed by three private citizens, one of whom gave the ground upon which it stands. Besides the parish church there are three chapels, a handsome town-hall, an orphan house, a prison, and seven communal and nine private schools.

Lockeren is a place of considerable trade, and contains many and various manufactories. Among the fabrics which are produced are cotton, linen, and woollen cloths, cotton goods, silk, and woolen worsteds; besides there are also many breweries, dye-houses, tanneries, and salt-refineries. A market is held every Wednesday, at which considerable quantities of farming produce are sold.

LOCRI was employed to designate the country of three distinct Grecian tribes, the Locri Epicenomues, the Locri Opuntii, and the Locri Oziolii.

The Locri Epicenomues and Locri Opuntii, who appear to have been more aiant than the Locri Ozolii, since the latter are not mentioned by Homer, inhabited the eastern coast of Phocis, and were separated from the borders of Boiotia by a mountain range which stretches from Mount G tín to the borders of Boiotia. The northern part of this range, which is much higher than the southern, was called Cynus, which belonged to Epicenomus, who gave his name to that tribe.

The Opuntii, who also derived their name from Opus, their chief town, on the borders of Boiotia.

The Locri Ozolii were bounded on the west by Boiotia, on the north by Doris, on the east by Phocis, and on the south by the Corinthian Gulf. According to Strabo (ib. p. 427) they were a colony from the Eastern Locri. The origin of their name is uncertain; none of the etymologies given by Pausanias (x. 38) and Strabo (ib. 427) appear to be satisfactory. The inhabitants of the Western Locri are said by Ambrose (ib. 38) to have been a wild and barbarous people even in the time of the Peloponnesian war; and in their manners and customs they appear to have resembled their neighbours the Boiotians.

The principal towns of western Locri were Amphissa and Naupactus. Amphissa (Salonica) was the chief town of the Cretans Gulf, and was destroyed by order of the Amphictyons, B.C. 338, for cultivating the sacred ground of Crissa. It was afterwards rebuilt, and in the war with the Romans, B.C. 190, it is mentioned by Livy (xxvi. 5) as a place of considerable importance. Amphissa is said to have been 300 stadia from Delphi, and by Pausanias (ib. 38, sect. 29) to have been 60 stadia from Delphi, and by Pausanias (ib. 38, sect. 29) to have been 120 stadia. The real distance, according to Sir W. Gell, is seven miles. Naupactus (Nepato, or Leptano), on the sea-coast on the borders of Boiotia, was for a long time the most ancient of the Hellenic nation; probably by Boiotia. The Locri Opuntii pretended that they were the most ancient of the Hellenic people in Greece; and that Cybus, their port, had been inhabited by Deucalion, when he first descended from Parnassus (Strabo, ib. 425).

The Locri Epicenomues, or Western Locri, who inhabited the western extremity of Italy, were a colony according to Ephorus, of the Locri Opuntii, but according to Strabo of the Locri Ozolii. It would appear from a statement in Pausanias (iii. 3, sec. 1) that the Spartans took a part in the foundation of this colony. An account of the political constitution of the Locri Epicenomues is given in Miller's Dorians (ii. p. 243, English transl). The time of the foundation of this colony is uncertain; according to some accounts it was founded B.C. 710, and according to others B.C. 683. The Locri Epicenomues are said to have been the first Greek people who had a written code of laws (Strabo, iv. 397), which was drawn up by Zaleucus about B.C. 664.

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been compared to a piece of taf. In other species the sound is produced by the friction of the thighs against the elytra.

The section Salatoria contains three families, to which the names Achelidae, Gryllidae, and Locustidae are applied by Dr. Leach. The family Achelidae is thus defined:—

Elvra horizontal; wings longitudinally folded, often produced beyond the elytra; tarsus three-jointed. This family contains the genera Gryllotalpa of Ray, Leach, and others, of which the mole-cricket (G. vulgaris) of this country affords an example, and Acheta of Fabricius, which is the Gryllus larre mentioned by the ancient authors. In cricket we hear "Acheta domestica" belongs to this genus. The genera Tridactylus and Myrmecophila are also included in the present family. In the family Gryllidae the wings are disposed in an oblique manner when folded, the tarsi are four-jointed, the antennae are long and slender, and the ovipositor is exerted in the female, of a long and compressed form, and recurved.

The insects of this family form the genus Locusta of the Régne Animal. The Acrida viridissima is the largest species in the genus, and which in some parts of Europe sometimes attains to 14,817 cwt. of weight. This species is not uncommon in some parts of England, and is about two inches in length and of a bright green colour.

The family Locustidae is distinguished by the following characters—Wings when folded meeting at an angle; tarsi three-jointed; the striae are restricted to smaller sections, and as entomologists differ in opinion as to which particular division shall retain the original name, the same names are used to designate different groups; hence references made to Leach's "Régne Animal." The principal genera contained in the family Locustidae are:

Locusta (Leach), in which the hind legs are about equal to the whole body, and the tarsis in form or length of a club. Upwards of twenty species of this genus are enumerated by Mr. Stephens in his 'Catalogue of British Insects,' and it is to this group that the Gryllus migratorius of Linnaeus belongs, a large species, which has given rise to the great family of the Grasshoppers. In Europe some species are now so rare as to be a cause of great regret. The works of the most recent travellers confirm them. Mr. Barrow, in his 'Travels,' states, that in the southern parts of Africa it is the most numerous species of locust in that country. It is found in all parts of Africa they are cooked and eaten by the natives. The natives of Senegal are said to dry them, and having reduced them to powder, use them as a native. Genus Camisopodes (Leach). Hinder legs exceeding the body in length of the habitants; 2, being a spoon-shaped club in both sexes; anterior tibios simple. This genus contains several species, six or seven of which are common in England. They are usually of small size, and, together with the smaller species of the preceding genus, are commonly called grasshoppers.

Genus Acridum (Leach). The species of this genus may be distinguished by the large size of the scutellum, which is produced posteriorly and covers the wings. They are commonly called grasshoppers.

The genus Prosoparia (Thunb.) has been established for the reception of certain African Locustidae, which have a membranous investment between the terminal hooks of the tarsi, the antennal filiform, the posterior legs shorter than the forelegs, and the abdomen vesicular—i.e., at least in one of the species.

The genus Prosoparia of Klug contains numerous apterus species peculiar to South America, in which the body is long and cylindrical, the head destitute of ocelli and prolonged anteriorly, the antennae short and filiform, the posterior legs long, united at the base, and the intermediate pair, which are remote from the anterior pair.

LOCUST TREE is the Robinia pseudocacia of botanists, a North American forest-tree. [Röhn.] The same name has also been given to the Coraona-Silica, or Carob or Algarno tree, which inhabits the Levant, and bears large pods, filled with nutritious pulp.

LOCUSTA (Crustaceology). [Palinurus].

LODDON. [Berkshire.]

LODEY, a town, county, capital of an arrondissement, in the department of Hérault, on the road from Paris to Narbonne, Perpignan, and Barcelona. This town is noticed by Pliny, who calls the townsman Lutevani. In the later Roman documents the name appears to have been corrupted to Labeta, where the name Lodeve was included in the Roman province of Narbonensis Prima. In the middle ages it was the seat of a vice-county; but in the crusade against the Albigenses the bishops of Lodève became lords of the town, and remained so till the French revolution. In the first half of the 13th century the bishop was a suffragan of the archbishop of Narbonne. The town stands in a pleasant valley amid the lower slopes of the Cévennes, on the left bank of the Lergue, a small feeder of the Hérault. It is surrounded by antient ramparts, and the streets and houses are of the same period. The population in 1831 was 9834 for the town, and 9919 for the whole commune; in 1836 it increased to 11,208 for the commune. The chief manufactures are of coarse woolen cloths; hats, leather, earthenware, and soap are made; olive and cork are cultivated. Of the small towns and villages near Lodeve, the most important are Le Salza, Cazouls, and Lezignan, where the inhabitants are employed in making white yamp is worked in the neighbourhood. There is considerable judicial or fiscal government offices, an Agricultural Society, and a high school. Cardinal Fleury was born here.

The arrondissement of Lodève has an area of 474 square miles, and is subdivided into 72 communes; the population was 55,911 in 1861; in 1836 it was 57,730.

LODI, PROVINCIA DI LODI E CREMA, one of the provinces of Lombardy, is bounded on the north by the provinces of Milan and Bergamo, on the west by that of Pavia, on the south by the Po, which divides it from the duky of Parma and Piemonte, and on the east by Cremona and Brescia. The province is part of the great plain called the Po basin, and is watered by the Adda, Serio, Lambro, and other affluents of that river. This province was divided into two small ones until the end of the last century, which were separated by the Adda, namely, Crema to the east of that river, which belonged to Mantua; and Lodi to the west of the Adda, which was part of the duchy of Milan.

The actual province of Lodi and Crema is thirty miles in length from east to west, from the river Oglio near Orzinov to the river Lambro near Melegnano; and above twenty counties which hollowed out by the Lambro divides the province of Bergamo to the bank of the Po opposite Piemonte. It is divided into eight districts, namely, Lodi, with 22 communes, 1895 houses, and 28,670 inhabitants; 2, Telono; 26, communes, 1230 houses, and 12,926 inhabitants; 3, Sant'Angelo, 172 communes, 1589 houses, and 15,037 inhabitants; 4, Borgotaro, 19 communes, 1842 houses, and 15,425 inhabitants; 5, Casal Pusterlengo, 21 communes, 2533 houses, and 25,298 inhabitants; 6, Cologno, 24 communes, 4534 houses, and 36,929 inhabitants; 7, Canosa, 12 communes, 1570 houses, and 15,474 inhabitants; 8, Crema, 50 communes, 5498 houses, and 45,888 inhabitants. The soil is partly sown with corn and pasture, and partly planted with the vine and mulberry-trees; but not of best quality. There are many canals, which feed numerous cows, from the milk of which the rich cheese is made, known in Lombardy by the name of Lodigiano, but which, by an old mannamer, is called in Southern Italy and the rest of Europe by the name of Parmesan. The annual produce is of flax, 1,029,997 cwt. of hay, 6492 cwt. of cheese, 2187 cwt. of butter, 4384 cwt. of silk cocoons, besides corn and wine. The number of cattle is stated at 36,846 heads of large cattle, 10,070 horses, 1133 asses and mules, 1938 sheep, and 243 pigs. (Cronaca Historica e Crema, published by G.B. Oriscoli of Lodi, with Statistical Tables, 1833.)

LODI, the capital of the province, situated on the high
road from Milan to Southern Italy, is a well-built town on the
right bank of the Adda, in a rich country: its a bishop's
see, and a place of considerable trade, and has 15,896 in-
habitants, manufactures of pottery and delft-ware, and
silk. Crema, on the right bank of the river Serio, is
smaller than Lodi, has 8670 inhabitants, manufactures of
linen, and a fine stud for the improvement of the breed of
horses in Lombardy. Lodi has a royal lyceum and a gymnasium,
between which and the river Serio is a large female
school, founded by Mrs. Cowsey, the widow of the English
artist of that name. There is also a house of industry for
paupers, an orphan asylum, two hospitals, and a Monte di
Pietà. The sums spent annually upon these establishments
for the poor in Lodi amount to 259,000 Italian livres, or
about 16,400£ sterling. The savings' bank of Lodi,
which was opened in 1823, had, at the close of 1837, a
deposit of 300,000 Italian livres, about 12,000£ sterling.
In every community (as in the school of elementary instruction,
as in the rest of Lombardy.

LOFODEN ISLANDS. [TRONDHEIM.] LOG and LOGLINE. This is the apparatus by which the
velocity of a ship's motion through the water is mea-
sured. At any moment on board, the velocity of a
lawn's light substance, be thrown out of a ship while sailing, as soon as
it touches the water it ceases to partake of the ship's
motion; the ship goes on, and leaves it behind. If then
after a certain interval, say of half a minute, the distance of the
light substance measured by the boat, and the rate of the ship's motion through the water will be as-
certain; we do not say the actual rate of the ship's going, but only that of its motion through the water, because in
many cases currents exist, and the wood itself is carried along by them. The true rate of motion is ascertained, the
rate of motion is ascertained, the
odds, the tenths, are written on the board, each in its proper ruled column; also the course of the vessel, the direction
of the wind, and any remarks made at the moment. The
observer at the log's end thus sees that the vessel's position
after twenty-four hours is known at the end of these twenty-four hours the whole is copied into a blank book
called the log-book, which is ruled for the purpose in the
same way as the log-board, and in which also all the trans-
actions relative to navigation are inserted, such as bearings
of stars, observations of the sun and moon, reckoning of
time, the velocity of currents, and the state of the weather. It is
also usual to set down every day the whole course and
distance run, calculated from the results of all the several
trials made by the log, with the distance and bearing of
some part to which the ship is approaching. The result
thus obtained is technically termed dead reckoning, and is
never quite correct, being subject to all the errors caused
by changing the direction and velocity in the intervals of
time. The term dead reckoning, however, is by no means
used to denote the method of obtaining the course and length of a vessel, but merely to denote the result of the
process of calculation. The course and length of a vessel
are usually determined by the use of a log, and the result
thus obtained is termed dead reckoning.

LOGARITHMS. This word is κόγγας, the number of the ratios; and the reason for
the appellation will appear in the course of this article. We
assume that the reader has the common knowledge of
logarithms, of the method of using them.

We have abandoned the intention of giving a view of the rise
and progress of logarithms, for the following reasons:
The subject is now one of such wide extent, when its theory
and practice are both included, that it would be like
writing a treatise on Euclid; and we are not aware that all
the subject would be needed in an article professing to
show the present state of logarithmic algebra, as well as of logarithmic
computation. If we were to confine ourselves to the latter
only, the view of the subject would be too confined. And
since our object is to make the subject as clear as possible
in the most modern algebraical form, it would take consider-
able space to explain at length the processes of the early writers
in terms intelligible to those who are not conversant with
their writings. We shall therefore devote the first part of
this article to such explanations as will make the student
fresh from modern books of algebra, to read the various his-
tories which exist with facility; and we shall then point out
how to deduce the principal formulæ connected with the

Tracts; in Delambre's 'Histoire de l' Astronomie Moderne,' vol. 1, pp. 491-585. See also NAPIER, BRIGGS, GUNTHER, KEPPEL, MERCATOR, &c.

The idea of logarithms originally arose (in the mind of Napier) from the desire to make addition and subtraction supply the place of multiplication and division. A table, in which are registered 1, a, a², a³, &c., supplies this desideratum to a certain extent; for since a² multiplied by a gives a³, we find the product of the two by adding their exponents, and looking in the table for the (x+y)th power. Thus for the set 1, 2, 4, 8, 16, &c., a table of logarithms is easily constructed, a specimen of which is as follows—

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>32</td>
<td>5</td>
<td>1024</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>64</td>
<td>6</td>
<td>2048</td>
<td>11</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>256</td>
<td>8</td>
<td>4096</td>
<td>12</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>128</td>
<td>9</td>
<td>256</td>
<td>13</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>32</td>
<td>10</td>
<td>16</td>
<td>14</td>
</tr>
</tbody>
</table>

Thus, to multiply 64 and 128, that is, to find the product of the sixth and seventh powers of 2, we must take the (6+7)th or 13th power, which, from the table, is 8192.

Such a table would be useless for general purposes, since the numbers would be too large; but if a rule could be given which would enable one to take a very little greater than unity, the powers will increase but slowly, and every whole number within given limits may be made either a power of a, or nearly to a power of a. It is the wish for a table of logarithms which shall contain, among its data, the logarithm of every whole number under a million or a fraction within h of every number under a million. Extract the square root of one million, the square root of that square root, and so on, until, say, the 15th root of one million has been extracted, and let this 15th root be 1+ε. It is obvious that this extraction may be carried on until ε is small as we please. Consequently (1+ε) is a million, and every lower power of 1+ε is less than a million, so that (m standing for a million) no two consecutive powers differ by so much as the difference of m and m (1+ε), or by so much as mε. If we proceed with the extraction until mε is less than ε, we shall have of the degree of smallness required: that is, since every whole number less than m lies between two powers of 1+ε, having exponents less than ε, ad fortiori every such whole number must be within ε of some power of 1+ε.

This is in fact the first view which was taken of the method of constructing tables of logarithms; and it must be remembered that Napier was not in possession of the modern way of expressing the powers of quantities. On the meaning of facilitating such enormous computations, and on the details for the first time given after they had applied all the analysis which they had, we have not here to speak: but we shall now show how the table may be formed by mere labour, and how the word logarithm arises.

Let us suppose that our system is to be such that 0 being the logarithm of 1, a hundred thousand shall be the logarithm of 10. If the hundred-thousandth root of 10 be extracted and called 1+ε, it would be found that 2 is very nearly the 30103rd power of 1+ε, that 3 is very nearly the 47127th power of 1+ε, and so on. If, then, beginning with 1, we increase it in the ratio of 1 to 1+ε, giving 1+ε; if we increase this in the ratio of 1 to 1+ε, giving (1+ε)², and so on, it appears that we shall reach 2 (or very near to it) at the 30103 such increases taken; or if we pass from 1 to 10 by 100,000 steps, increasing each time in the same ratio, we shall come nearest to 2 in 30103 steps, which is therefore the number of times the increase is made in a certain ratio, or the number of the ratio of the logarithm of 2 to the series of natural numbers.

In such a table it must of course follow that the logarithm of a product is exactly or very nearly the sum of the logarithms of the factors, since for instance 2 being (1+ε)²⁰¹⁰⁸ and 3 being (1+ε)⁷⁷⁷⁸ very nearly, 6 must be very nearly (1+ε)²⁷⁸⁴. Nor is this property altered, if we divide or multiply all the logarithms by the same number. If we then divide every logarithm by 100000, the logarithm of 10 becomes 1, that of 2 becomes -30103, and that of 3 becomes -47127, as in the common tables.

The first step of importance which was made in the logarithmic analysis was the following. If ε be very small, the lower powers of 1+ε, the square, cube, &c., are 1+2ε, 1+3ε, &c., very nearly; or if m and n be not so great but that mε and nε are still small, the mth and nth powers of 1+ε are 1+mε and 1+nε very nearly. But the logarithms of these powers are m and n: that is, if k and l be small, the logarithms of 1+k and 1+l are very nearly in the proportion of k to l. If then we take two numbers, a and b, and extract a very high root (say the nth) of both, so that the results are very near to unity, say 1+k and 1+l, we have (nearly)

\[ \log a^n : \log b^n :: k : l. \]

But the two first terms are in the same ratio as \log a : \log b, since the multiplication of the former terms by r gives the latter. Consequently, when the logarithm of one number is known, that of any other can be found to any degree of accuracy. We may see this in a clearer form; it is sufficient here to show how the theorem was first obtained. If to the preceding methods we add that of INTERPOLATION, which Briggs used with success, we have before us the bases of the original computations of logarithms.

It was evident from the first that the connection between a logarithm and its number must be of the following kind: when the logarithm increases in arithmetical progression, the number must increase in geometrical progression; so that if a and b are the numbers corresponding to AB, then a+2ε, a+2b, &c., must be the logarithms of AB, AB², &c. Several mathematicians had formed this conception; but the preliminary difficulty which stopped their progress was the being unable to represent the series of numbers (or fractions of a high degree of nearness to them), in the shape of terms of a geometrical progression. The great merit of Napier is threefold: first, he distinctly saw that all numbers, within any given limit, may be either terms, or as near as we please to terms, of a geometrical progression; secondly, he had the courage to undertake the enormous labour which was requisite for the purpose; thirdly, he made an anticipation of the differential calculus in developing the primary consequences of the definition.

The predecessors of Napier probably did not understand the notion of a quantity varying in geometrical ratio, while another varied simultaneously, but in an arithmetical ratio. The difficulty is that which a beginner finds in seizing the notion of compound interest carried to its extreme limit, so that every fraction of interest, however small, begins to make interest from the moment it begins. We have preferred to omit this consideration in the article INTEREST, where it would have been of no practical use, and to introduce it here, where it may aid in the explanation of the first principle.

Let £1 become £(1+ε) in a year, and consequently, at the same rate of interest, it becomes £(1+ε)² in n years. Suppose however that interest, instead of being payable yearly, is paid ε times in a year, and that interest makes interest from the moment it is paid. Consequently, at the beginning of the first, second, &c. fractions of a year, the pound first put out becomes

\[ 1 + \frac{\varepsilon}{2}, \left(1 + \frac{\varepsilon}{2}\right)^2, \left(1 + \frac{\varepsilon}{2}\right)^3 \ldots \]

or \( \left(1 + \frac{\varepsilon}{2}\right)^n \) at the end of one year, and \( \left(1 + \frac{\varepsilon}{2}\right)^{\frac{n}{\varepsilon}} \) at the end of n years.

If we may make ε as great as we please, that is, if we may make payments of interest follow one another as quickly as we please, we may make the increase of the pound approach as nearly as we please to a gradual increase, of which it must be the characteristic that in successive equal times the amounts are in geometrical progression. Let A B become A C in a time represented by ε. Divide A into any number of equal parts, and in the successive equal times b, c, q, &c., let a point move through A P, P Q, Q R, &c., in a manner in which a succession of impulses, sufficiently small in amount, and often repeated, may be made to give, as nearly as we please,
the results of a perfectly gradual motion. At B let a velocity
carry sufficient to carry the point to P in the time
bc; at P let an impulse be given which would cause PQ
be described in the time pq, and so on. And let A, B,
A', B', &c. be a continued set of proportionals, namely,
and thus it happens in continuing proportion. To show
this, suppose we compare the motion from B to C with any
other part of the motion described in some subsequent time
bc (equal to bc), and which carries the moving point from B' to
C'. Divide the time bc into as many equal parts, b', c', &c.
as before, and let the parts be Ps, Ps', &c. Let the lengths described
in the second set of subdivisions. Then by the law of the
motion A'B : A'B : A'B, whence B' and B"P are
in the ratio of A'B to A'B; and similarly P'Q and P'Q' are
in the ratio of A'B' to A'B, and so on. Consequently, the sum of B', P', Q', &c., or BC'
is the sum of B'P, P'Q, &c., or BC, in the same ratio
of A'B to A'B; whence also AC is to A'C as A'B to A'B,
or A'B : A'C : A'.B'.
That is, in any one time
the distance between any two equal times from X to Y, and in any
other equal time from X' to Y', then X : Y' : X' : Y'
From which it readily follows that the distances attained at
the ends of successive equal times are in continued propor-
tion.

More than this, the velocities of the moving point at B
and B' are as B' to B' (these being spaces described in
equal times): and the ratio of these, however many may be
the number of subdivisions, is always that of A to AB.
Hence a gradual motion of the character described is one in
which the velocity of the moving point increases in the
same proportion as the distance from A.

In the preceding diagram, the time elapsed from B to C
is the logarithm of AC, that of A B being t. An infinite
number of systems may be constructed, depending on the
different velocities which may be given to the points which
are supposed to start from B. In Napier's system, at least
in that system stripped of certain peculiarities not worth
noting at present [NAPIER; BRIGGS], A B being a unit,
the point starts from B at the rate of a unit of space (A B) in
a unit of time; obviously the most simple supposition which
can be made, and which has procured for this system
the distinctive title of natural logarithms. In Briggs's system
the point starts from B with such a velocity that (A B being 1)
it shall have attained 10 times A B in one unit of time.
This is required of the initial velocity of 2 30 253 85... times A B in one unit of time.

In addition to the principles here laid down, a known
property of the hyperbola very early showed that logarithms
would become applicable to geometry: and thus it happened that
the first decided algebraic step in the construction of
logarithms was announced in Mercator's Logarithmotechnica," as the
quadrature of the hyperbola. Let A and G be the
asymptotes of a hyperbola, and let A, B, C, D, A', &c., be,
in continued geometrical progression. Draw B K, C L, D M, &c., parallel to the other asymptote A G, then the
hyperbolic trapezia B K L C, C L M D, D M N E, &c., are,
equal, or B K L C, B K M D, B K N E, &c., are, in
arithmetical progression. So that any trapezium B K M D
is a logarithm to its terminal A D. This property
was the discovery of Gregory St. Vincent, who published it in
his 'Opto Geometricum,' Antwerp, 1647. It was therefore
unknown both to Napier and Briggs.

We shall now take the question of logarithms, availing
ourselves of the power of modern algebra.

Definition. By the logarithm of a number let any such
function of that number be understood as has the following
property: When x is to y as x' is to y', the logarithm
of x exceeds or falls short of the logarithm of y by as much
as the logarithm of x' exceeds or falls short of that of y'.
Let x be the function which a number is of its logarithm:
so that x = φ (log x).
If θ and a + b be logarithms
of x and y, and if e be the logarithm of x', then as x : y : x' : y', e + b must be the logarithm of y'. And x, y, x', y',
e and θ are severally φ a, φ (a + b), φ a and φ (a + b). But
x' = xy, or

\[ \phi x \times \phi (a + b) = \phi \times \phi (a + b) \]

Let φ a or x be the number which has 0 for its logarithm;
then a = 0; and calling N the number in question, we have

\[ N \times \phi (a + b) = \phi x \times \phi (a + b) \]

or

\[ N = \phi a \times \phi (a + b) \]

But by the theorem proved in the article Binomial Theo-
rem (p. 419), this can only be true on the supposition that
φ c + N is such a function of C as C, where C is inde-
dependent of c. Consequently, the number whose logarithm
is c must be N/C. This evidently satisfies the conditions,
and the theorem quoted shows it to be the only function
which satisfies the conditions.

It is most convenient to assume 1 as the number N,
which has 0 for its logarithm. We have then the following
equation, connecting a number with its logarithm,

\[ \log x = a \]

so that every number has a logarithm for any value of C
we may take, only it must be remembered that the same value
of C must always be used. The logarithms of all numbers
for a given value of C form a system: and C is called the
base of that system.

Given a system of logarithms, we now inquire how to
find the logarithms in any other system. Let A and B
be the bases of the systems, and a and b the logarithms of
any number x in the two bases. Then we have

\[ A^a = x, \quad B^b = x, \quad \text{or} \quad A^a = B^b \]

whence

\[ B = A^b \]

or

\[ \log x (base B) = \log x (base A) \]

that is, to turn one system of logarithms into another with
any new base, divide every logarithm in the system by
the logarithm which the base belongs to the new base.

We now proceed to the method of determining logarithms.
In the article Limit it is shown, by means of the binominal
theorem, that of the two series

\[ 1 + a + \frac{a^2}{2} + \frac{a^3}{3} + \frac{a^4}{4} + \ldots \]

\[ 1 + a + \frac{a^2}{2} + \frac{a^2}{3} + \frac{a^3}{4} \ldots \]

the second is the tenth power of the first. A remarkably
simple case presents itself, which, in fact, leads to Napier's
system of logarithms: it is when a = 1. In this case
the first series becomes

\[ 1 + 1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \ldots \]

which is very convergent, and is 2.71828189 extremely
nearly. This remarkable series is generally denoted by e
(sometimes by e, Napier always uses e for it), and we have

\[ e^x = 1 + x + \frac{x^2}{2} + \frac{x^3}{3} + \frac{x^4}{4} + \ldots \]

In Napier's system, then (we shall presently show that
this is Napier's system), x is the logarithm of 1 + x
\[ \frac{x^2}{2} + \ldots \quad \text{or, the logarithm being given, the number can be}
\]

\[ \text{immediately found.} \]

Since the last equation is universally true, for \( x \) write
\[ \log a \times x, \] where \( a \) means \( \log a \) (base \( s \)). The first side
then becomes

\[ \log a \times x, \text{ or } \left( \log a \right) x, \text{ or } a x \]

\[ a x = \log a + a x \]
which they cost their inventor. This having been done for all whole numbers within the given limits, the logarithm of any fraction is readily found by subtracting the logarithm of the denominator from that of the numerator.

It must be admitted that Briggs, by his construction of the decimal system, divides with Napier the merit of inventing logarithms, considered as an instrument of calculation. In the Napier system the table must either be carried to an enormous length, or whole numbers only must have logarithms, and every logarithm of a fraction will require two entries of the table and a subtraction. But in Briggs's system the logarithm of every decimal fraction can be found by one entry of the table, and one inspection of the fraction.

The peculiarity of this system (the base of which is 10) is as follows:—Every number or fraction is either a power of ten, positive or negative, or lies between two powers of ten. The powers of ten are ranged in the following table:—

\[
\begin{array}{cccc}
10^{-4} & = & 0.0001 \\
10^{-3} & = & 0.001 \\
10^{-2} & = & 0.01 \\
10^{-1} & = & 0.1 \\
10^{0} & = & 1 \\
10^{1} & = & 10 \\
10^{2} & = & 100 \\
10^{3} & = & 1000 \\
10^{4} & = & 10000 \\
\end{array}
\]

From which the following rules may easily be obtained: a number which has \( m \) figures before the decimal point lies between \( 10^{m-1} \) and \( 10^{m} \), and its logarithm therefore lies between \( m - 1 \) and \( m \), or it is \( m - 1 + \delta \) a fraction less than unity. Also, if \( \delta \) be less than unity, and if its first significant figure lies in the \( n \)th decimal place, this fraction lies between \( 10^{-n} \) and \( 10^{-n} - \delta \), so that its logarithm is \( n + \delta \) a fraction less than unity. Now the convenience of Briggs's system lies in this, that the fraction less than unity, which is a part of every logarithm, does not depend on the position of the decimal point, but entirely upon the significant figures: the reason being, that an alteration of the position of the decimal point being a multiplication or division by some whole power of 10, alters the logarithm by the addition or subtraction of a whole number. This question is discussed in every treatise on the mode of using logarithms.

Let \( a \) be the base of a system of logarithms, and let \( \log x \) signify simply the Napierian or natural logarithm of \( x \); then by the theorem already proved

\[
\log (a + b) = \log a + \frac{b}{a} - \frac{b^2}{2a^2} - \frac{b^3}{3a^3} + \ldots 
\]

which however is only convergent when \( b \) is not greater than unity. Since this last is universally true, we find, by substituting \( -b \) for \( b \),

\[\log (1 - b) = -b - \frac{b^2}{2} - \frac{b^3}{3} - \frac{b^4}{4} - \ldots;\]

and subtracting the first from the second, remembering that

\[\log (1 + b) - \log (1 - b) = \log \frac{1 + b}{1 - b};\]

we find that

\[\log \frac{1 + b}{1 - b} = 2 \left( \frac{b}{2} + \frac{b^2}{5} + \frac{b^3}{9} + \ldots \right).
\]

Let \( 1 - b = x \), or \( b = x + 1 \); then,

\[\log x = 2 \left( \frac{x + 1}{x + 2} + \frac{1}{3(x + 2)} + \frac{1}{5(x + 4)} + \ldots \right),\]

which is always convergent, but converges very slowly when \( x \) is considerable. If however we make

\[\log x = \frac{x + 1}{x}, \text{ or } x = 1 + \frac{1}{x + 1} + \ldots\]

then, remembering that \( \log \frac{x + 1}{x} = \log (x + 1) - \log x \), we have

\[\log (x + a) = x + a - \frac{a^2}{2x} + \frac{a^3}{3x^2} - \frac{a^4}{4x^3} + \ldots\]

\[\log (x + a) = x + a - \frac{a^2}{2x^2} + \frac{a^3}{3x^3} + \frac{a^4}{4x^4} - \ldots\]

This latter, together with the rules above, shows that if \( b \) be the number of seconds elapsed from the beginning of a motion, and if \( a^2 \) be the length described in that time, then the time is the logarithm of the length described. The velocity at the end of \( \frac{1}{2} \) second is the differential coefficient of \( a^2 \), or \( a \); \( \log a \), where the logarithm used is that of the preceding algebraical system: this velocity is therefore \( \log a \) at starting, or when \( t = 0 \). Now, in Napier's system this velocity is unity, or \( a = 0 \); that is, the base of Napier's logarithms is the series called \( e \). But in the system where the base is 10, \( \log a \) is 2:3025851, which is the velocity at starting assumed by Briggs.

By the foregoing series a system of Napierian logarithms may be calculated with a very small fraction of the labour.
LOGOS 88 LOI

original. There are however passages in which this phrase appears to denote a distinct personal existence; and many eminent critics, among whom are Bertholdt and Wegscheider, are decidedly of opinion that the Targumists intended it to apply to the Messiah; 'plainly showing it to have been thus understood that She-meshiah, or as some of them indeed expressly say, would employ the future Messiah, when he should be born, as the instrument of his gracious designs, and would be joined to him in a personal union.' (Bertholdt, Christol. Jud.)

Philo often speaks of the Logos, but his views on the subject are involved in much obscurity. He seems however to have had the idea of a two-fold Logos; the one denoting a conception in the divine mind according to which the world was created; the other a personal existence, the Son of God, the beginning of the divine nature, though inferior to the supreme God, the Creator of the world (σεβασμον), presiding over the universe, the instructor and guide of man, the High Priest and Mediator between God and man. These two ideas of the Logos are often combined together. The passages from Philo are collected in Dr. J. P. Smith's Scripture Testimony to the Messiah, book ii., cap. vii., sect. 4.

See also the descriptions of Wisdom and the Word of God (Pro. viii.; Wisdom of Solomon, x. 15-19; xi. 4-6; xiii. 12, comp. 1 Cor. x. 4, 9, where the same actions are attributed to Christ); and in other parts of the Wisdom of Solomon and Ecclesiasticus.

These opinions are thought by some to represent the ancient Jewish idea of this divine person or word of God, corrupted by a mixture of heathen philosophy; and by others to have been wholly borrowed either from the Platonic philosophy or from the Magian doctrine of divine emanations and Azons.

The Christian doctrine of the Logos.
The only examples of the theological use of this word in the New Testament are found in the writings of John (Gospel, c. i.; 1st Epistle, i. 1; Rev., xix. 13). These passages are generally allowed to refer to Christ; but the sense in which the Logos is to be taken, and the nature of the connection between this Logos and the person of Christ, are subjects of much dispute.

The Trinitarian expositors assert that these passages can mean nothing else than that the Logos is the distinct person of Christ; while substances, which have existed from all eternity in a union of nature and of essence with God, which created the universe, and which was joined with a human nature to form the person of Christ.

The Arian doctrine represents the Logos as an emanation from the Deity, superior to all other created beings, and which supplied the place of a human soul in the person of Christ.

Most Unitarian divines consider it to be used either for God himself, or as an abstract term for the wisdom and intelligence of God which was fully imparted to Christ to fit him for his mission.

Those who attribute to the Logos a personal existence give different reasons for the origin of the name. Some explain it to mean the speaker or teacher, by metonymy, as Christ is called by John the Light, the Way, the Truth, the Life; others interpret it the promised one; and others consider that as speech (λογος) is a medium of rational communication, so the name Logos is given to the Mediator between God and man, one who speaks to man in the name of God.

(The Lexicons of Schleusner, Wahl, and Bretschneider, in loco; Kuinoel, Comment. in Lib. Hist. N. T.; Prolegomena to the New Testament, by John, in the Biblical Cabinet, 1802; Dr. J. P. Smith's Scripture Testimony to the Messiah; Lardner's Letter on the Logos, Works, vol. x.)

LOGWOOD, a kind of timber imported from the West Indies and adjoining continent, especially Honduras, on which account it has been called Campeachy-wood. It belongs to the natural order Leguminosae, and to the section Cassiea. The branches are usually crooked, spiny, and deformed; the leaves are small and pinnate; the flowers grow in long racemes, are yellow, sweet-scented, and have ten separate stamens, half of which are shorter than the others. The fruit is a thin flat two seeded legume, not opening at the sutures, but bursting longitudinally by a division passing down through both valves.

The wood is hard enough to take a fine polish, and might be used by cabinet-makers; it is not however imported for that purpose. In Jamaica the tree is used for fences, in the same price as the cheap English oak, and it seems to be admirably adapted for the purpose. Logwood is so heavy as to sink in water, and scarcely susceptible of undergoing decay.

Its colouring matter is dissolved both by water and alcohol; and it is usually derived from the presence of a peculiar body, to which Chevreul, who discovered it, gave the name of hematin or hematoxylon: this is sometimes so abundant as to exist in the wood in crystals of distinct form, of a fine red colour, and considerable size. Besides this it is found in the wood and solidified with equal parts of salts of potash, and lime combined with a vegetable acid, a little sulphate of lime, alumina, peroxide of iron, and manganese. [HEMATIN; HEMATOXYLON]

Logwood is employed by the colour printers to give a black or brown colour, the cloth being always first impregnated with alum mordant, and thus black is obtained. Iron mordant and logwood also yield a black, but it is not so good as with the alum mordant. Cloth with the alum mordant and logwood, and madder, has a fine brown colour fixed upon it. Logwood is also employed in the preparation of some lakes.

Trade.—(Bois de Campêche, French; Campeachez, German; Campachueho, Dutch; Palo de Campeachy, Spanish.)

The imports of logwood have been increased during each of the last ten years, and the quantities re-exported and taken for use, have been as follows:

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>1828</td>
<td>14,495</td>
<td>3,925</td>
<td>10,570</td>
</tr>
<tr>
<td>1829</td>
<td>13,503</td>
<td>6,226</td>
<td>7,277</td>
</tr>
<tr>
<td>1830</td>
<td>16,781</td>
<td>5,327</td>
<td>11,454</td>
</tr>
<tr>
<td>1831</td>
<td>14,852</td>
<td>6,011</td>
<td>8,841</td>
</tr>
<tr>
<td>1832</td>
<td>15,773</td>
<td>4,427</td>
<td>11,346</td>
</tr>
<tr>
<td>1833</td>
<td>13,564</td>
<td>4,548</td>
<td>9,016</td>
</tr>
<tr>
<td>1834</td>
<td>16,744</td>
<td>3,697</td>
<td>13,047</td>
</tr>
<tr>
<td>1835</td>
<td>7,840</td>
<td>3,925</td>
<td>3,915</td>
</tr>
<tr>
<td>1836</td>
<td>12,890</td>
<td>4,385</td>
<td>8,505</td>
</tr>
<tr>
<td>1837</td>
<td>14,699</td>
<td>3,316</td>
<td>11,383</td>
</tr>
</tbody>
</table>

The imports of logwood are brought into Europe from the West Indies and Mexico. The British possessions of Jamaica and Honduras have upon the average furnished about one half of the above imports into this kingdom. The principal part of the exports from England are made to Russia, Prussia, and the Netherlands. Logwood is an article of commerce the price of which fluctuates violently. Under ordinary circumstances of demand and supply the price of logwood has been from 25. 10. 0 to 35. 8. 6 per ton. At this time (January, 1839) a temporary short supply has raised the price to about 42. 17. 0 per ton. The duty when imported from a British possession is 3s. per ton, and when from a foreign country 4s. 6d. per ton.

LOIRE. [Varia.]

LOIR, a river in France belonging to the system of the Loire.

LOIR ET CHER, a department in France bounded on the north by that of Eure et Loir; on the north-east by that of Loiret; on the south-east by that of Cher; on the south by that of Indre; on the south-west by that of Indre et Loire; and on the north-west by that of Sarthe. Its form approximates to that of a parallelogram, having its longer side facing north-east. The chief town is Châteauroux (Sarthe), 45 miles. The area of the department is estimated at 2424 square miles; with a population in 1831 of 234,750; in 1836 of 243,043; showing an increase in five years of 8293, or about 3.4 per cent; and giving a little more than 100 inhabitants to a square mile. In extent the department is almost equal to the English county of Devon, but it has not half the population of that county. Blos, the capital, is 56 miles south-west of Paris in a direct line, or 103 miles by the road through Orléans. It is in 47° 35' N. lat., and 1° 20' E. long. from Greenwich.
The department is almost entirely a flat, having in the south-east part a considerable number of étangs, or pools, and marshes. The supracretaceous strata which occupy the chalk-basin of Paris extend into the department from the north-east, and occupy the basin of the Loing as far as the junction of the Beuvron; and in all other parts the department is occupied by the chalk itself. The general inclination of the surface is toward the west and south-west.

The principal river is the Loire, which has a tolerably direct course from west to east. It enters the department, which it divides into two nearly equal portions; it is navigable throughout. The Cher, one of the principal tributaries of the Loire, enters this department on the south-east, near Mennetou, and flows westward, in one part of the department it is a border of the Loire, past the towns of Mennetou, Selles, St. Aignan, and Montrichard, into the department of Indre et Loir. The Cher is navigable for about 15 miles before leaving this department.

The Grande (or Great) Sauldore enters the department on the east side, and after being joined by the Petite (Lesser) Sauldore and the Rere, both of which also rise out of the department, and by the Croisne, joins the Cher just below Selles. The Feuzez, another feeder of the Cher, has a small space of navigable water in the north of the department near the town of Sauldore; and the Cosson enter the department from the east, and, after receiving, each of them, a few small streams, fall into the Loire on the south-east near, one another, a few miles below Blois. The Cisse Lendrez, a small stream, falls into the Loire near Blois. A short distance below, and not far from Blois, on the north side of the Loire, is the town of Chenonceau, which is a small place, with a population, in 1818, of about 1200

St. Aignan (pop. 2238 town, 2772 whole commune) are some manufactures of woollen cloth. There are flint quarries near it. Chambord has a castle built by Francois I. from the designs of the architect Primaticcio: 1560; it was occupied by the army of the Duke of Anjou, during the wars of 1660, 1665. It has been used as a residence by several members of the French nobility. The castle was purchased by the French government in 1797 and is now owned and maintained by the French state. The castle is located on the Loire River, near the town of Blois.

The three arrondissements contain 24 cantons, or districts, under a justice of the peace.

The three arrondissements of Blois, Vendôme, and Romorantin, are the largest in area. Blois, central, has a population of 971, 1186, and 138, respectively. Vendôme, north-west, has a population of 650, 110, respectively. Romorantin, south-east has a population of 803, 47, 722, respectively.

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ament castle; its towers, manufacture some serges and other cotton manufactures, and glass. Montereau, otherwise called Quevene (pop. 2433 town, 3072 whole commune), has a good square formed by a former duke of Tal- lard; the inhabitants manufacture serges and other woollens. In the arrondissement of Venise many as many as seven hundred foundries are brought up at the charge of the char- tetable institutions of Paris.

In the arrondissement of Romorantin are Romorantin, St. Genoux, La Ferre-Imbault, and Salbris on the Sauldrie; Menneut and Selles on the Cher; and La Ferre-d'Algues on the Loir. Romorantin, a brook which flows into the Sauldrie at this spot. It was formerly the capital of the baron district of Sologne; and was the place from which the chancellor L'Hôpital issued an edict (carré de la Roche), which prohibited the establishment of the Inquisition in France.

The population was, in 1831, 6537 for the town, or 6985 for the whole commune; in 1936 it was 7181 for the commune. The principal manufacture is that of woolen cloth. There are several cotton mills. La Ferre-Imbault has a chateau or castle, which was in the time of Louis XII, the residence of the Marchal de L'Oiselay.

The population of the above places, when not otherwise mentioned, is that of the whole commune, and from the census of 1831.

The department of Loir et Cher constitutes the diocese of Blois, the bishop of which is a suffragan of the archbishop of Paris: it is included in the circuit of the Académie Universitaires, and in the Cour Royale of Orleans. It is in the fourth military division, the head-quarters of which are at Tours. It sends, as a member of the Chamber of Deputies, to the National Assembly, and the national assembly, and the national institute. It is divided into two parts, the first of which is sold as compared with the rest of France: of the young men enrolled in the military census of 1822-23, only 27 in every 100 could read and write; the average of France being nearly 40 in every 100.

This department was in the days of Caesar occupied by the Carnutes and the Turones. The greater part of it afterwards constituted the Bassign, or Bessais [Blesais], but the department also includes part of the former districts of Bourbon, Auvergne, and Dunois. It contains a great many chateaux.

LOIRE, a river in France, the basin of which is bounded on the east by the Cévennes, and the mountains which form their prolongation northward; by the mountains of Massif of Beauce, on the west; by the Loire on the north; and on the south and south-west by the mountains of La Margeride, the volcanic group of Auvergne, and the heights of Gâtines, which extend from the Auvergne group to the Atlantic.

The basins described include a large portion of the centre and western parts of France, constituting nearly a fourth part of the whole country. The greatest length of the basin is from north-west to south-east, from the source of the Vienne, a feeder of the Mayenne, to Mount Lozère, 335 miles; its greatest breadth is from the sources of the Bouleuvre, which flows by the Coinne to the Vienne, to the source of the Arroux, 224 miles. Its area is estimated at 30,737 square miles, or about that of England.

The Loire rises in Mount Gerbier de Jonc, one of the Cévennes in the neighbourhood of Mount Méixen, several miles north-east of Mount Lézère, in the department of Ardèche. Its source is nearly 4600 feet above the level of the sea. The general direction of its course is at first north and north-west, to Orleans, where it turns westward, and flows into the Atlantic. Its first great tributary, the Allier, unites with it on the left bank, just below Nevers, at an elevation of 550 feet above the level of the sea, and at a distance of about 200 miles from its source. In the upper part of its course, at the junction of the Allier, the valley of the Loire is narrow, being bounded on the east by the prolongation of the Cévennes, which form the eastern limit of its basin, and on the west by a branch from the Cévennes, which divides the valley of the Loire from that of the Allier. The tributaries of the Loire, until the junction of the Allier, are all small; the Arroux alone, which joins it on the right bank, is navigable.

From the junction of the Allier to Orleans is a distance of nearly 100 miles, following the general course of the stream. The height of the bed of the Loire at Orleans is about 294 feet above the level of the sea. The Cher and Indre, two of its most important tributaries, join it on the left bank, 90 miles below Orleans, and not far below Tours, at an elevation of about 160 feet.

From the junction of the Cher and Indre, the Loire has a general western course of 133 miles, till it reaches the ocean. It receives, on its left bank, about 12 miles below the junction of the Cher, the Vienne, another of its great tributaries; and 36 miles lower down it receives the Maine, and 36 miles further on it falls into the right bank throughout its whole course. At the junction of the Mayenne the height of the bed of the river is about 110 feet; and at Nantes, 48 miles lower down, and only 36 miles from the mouth of the river, 36 feet above Orleans, which is the head of navigation on the Loire.

The whole course of the Loire is about 530 miles. The navigation upwards and downwards commences at Roanne, 116 miles from its source, where it is joined by the Trambouze. It has, in the part above Roanne, a total fall of 980 feet, or 167 feet in each, mile. The chief fall is in the part nearest its source. For two-thirds of the distance above Roanne it is used for floating timber, particularly of deals for boat-building; and boats can descend the stream from St. Rambert, above Roanne, to Beaugency, about 100 miles.

This river, with its larger affluents, constitutes the great outlet for the produce of central and western France, and might be rendered much more available. The banks are celebrated for their beauty, particularly in the neighbourhood of Orleans and Blois. From the mouth of the Loire to the middle of the Cévennes, in which it has its sources, the Loire is subject to great inundations, to prevent which it has been embanked in the level tracts below Orleans. The sand and soil which it washers bring down from islands or shoals banks and obstructs the course, which materially impede the navigation, especially above Orleans: to avoid this inconvenience, a canal has been formed along the left bank of the river, from the Canal du Centre, at the junction of the Arroux and the Cévennes, at the mouth of the river, 900 tons are built at Nantes, but they cannot receive their cargoes above Paimboeuf. The tide flows about forty miles up the river, to a short distance above Nantes.

Two of the five great affluents of the Loire have been described elsewhere. [Allier. Cher.] The Allier rises in Mount Lozère, a few miles from the source of the Loire, and has a course of about 200 miles, nearly parallel to that of the Loire. It is navigable, during part of the year, for about 72 miles. The Cher rises near the Puy de Dôme, and has a course of nearly 200 miles, for about 50 miles of which it is navigable. It passes Montlucquin, St. Amand, and Bourges.

The Indre rises in the remote ramifications of the central group of the mountains of Auvergne, and has a course of about 150 miles, only 50 of which are navigable. It descends from the junction of the Allier to the junction of the Loire, at Nevers, being 104 miles long, and receives several considerable affluents.

The Vienne rises in the Auvergne mountains, west of the Puy de Dôme, and flows, first west past Limoges, and then north, past Chinon. Its whole course is about 150 miles, only 50 miles of which are navigable. It descends from the junction of the Clain to the junction of the Loire, at Nevers, being 104 miles long, and receives several considerable affluents.

The Mayenne rises in the southern slope of the Armo- nac mountains, west of the Cévennes, near the town of past Mayenne, Laval, and Angers, just below which it joins the Loire: its whole course is about 97 miles, half of which, viz. from Laval, it is navigable. Though not so long as the Allier, the Cher, the Vienne, or even the Garonne, it is the chief of all the rivers below the Vienne. Its principal feeder is the Sarthe, a stream about miles longer than the Mayenne, which flows by Alençon and Le Mans, and is navigable from below Le Mans 60 miles. The Sarthe receives the Loire distinguished from the junction of the Mayenne, west of Angers, and forms a river of almost equal length with itself, which is navigable from Château du Loir, 33 miles.

The Loire was known to the Romans by the name Liger (Aisio, Strabo) or Ligeris; the Allier by those of Eirac and Eireus. We are not aware that the name of any of the other tributaries has been recorded.

We subjoin the following summary of the navigation of this vast river-system from the official statements of the French government—
The department belongs almost entirely to the basin of the Loire, which river enters it on the south, just below Auxerre (Haute Loire), and flows northward, past St. Rambert (where the downward navigation commences), Feurs, and Roanne (where it becomes navigable, both upward and downstream), into Bourges, which is on the left bank. The narrowness of the valley through which it flows, its tributaries are all small; the Furand, the Coize, the Loise, the Trambouze, and the Sornin join it successively on the right bank; and the Bouzon, the Maire, the Lignon, the Sere and the Repioust, and the Tessou, are on the left. The portion of the south-eastern extremity of the department belongs to the basin of the Rhône, and is skirted by that river, which divides it from the department of Ise: the Gier and the Duang, which belong to the system of the Loire, water the right margin of it. The navigation of the Loire in this department amounts to 83 miles, which extends it far above Roanne or St. Rambert, and shows either that the upper part has been made navigable of late years, or that the part used only for floating timber is included in the return. About five miles of the navigation of the Rhône belong to this department.

There are two canals: that from Roanne to Digoin, lateral to the Loire, 11 or 12 miles of which is in this department; and that from Rive de Gier to Givors (Rhône) on the banks of the Rhône, of which four or five miles are in this department.

There are six government roads, having an aggregate length of 193 miles, of which nearly three-fourths are in repair or repair unfinished. There are seven departmental roads, having an aggregate length of 231 miles, about two-thirds of which are in good repair.

There are four thousand four hundred and twenty-four byre-roads and paths, with an aggregate length of nearly 5000 miles. The principal road is that from Paris by Moulins to Lyon: it passes through Roanne. The road from Lyon to Nimes crosses the south-eastern corner of the department, that from Lyon to Clermont passes through Feurs and Boën; and that from Lyon to Le Puy passes through St. Etienne. There is a railroad from 15400 ha. to Vienne.

The climate of the department is temperate, and the soil, though not distinguished by fertility, tolerably productive. About half the soil is arable, but the quantity of grain is not sufficient for the dense population. There is a considerable proportion of meadow land, on which a great number of cattle are bred. The cheeses of La Roche and Barracon, villages in the department, are much esteemed. The vineyards are tolerably extensive, and some of the wine is in good repute. A small quantity of cider is made. The quantity of poultry raised is considerable, and there are many keys, which are fattened on chestnuts. The woods occupy rather more than an eighth of the department: they consist chiefly of pines and other resinous trees, from which excellent turpentine is obtained. The deals are sent down the Loire for boat-building.

The department is divided into three arrondissements, as follows:

<table>
<thead>
<tr>
<th>Arrondissement</th>
<th>Population in 1831</th>
<th>Area in Squ. Miles</th>
<th>Communes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roanne</td>
<td>665</td>
<td>121,817</td>
<td>124,871</td>
</tr>
<tr>
<td>Montbrison, Central</td>
<td>749</td>
<td>120,210</td>
<td>124,050</td>
</tr>
<tr>
<td>St. Etienne, S.E.</td>
<td>398</td>
<td>149,189</td>
<td>163,576</td>
</tr>
<tr>
<td>N° 2</td>
<td>1835</td>
<td>391,216</td>
<td>412,497</td>
</tr>
</tbody>
</table>

There are 28 cantons or districts, each under a justice of the peace.

In the arrondissement of Roanne are Roanne, on the Loire (population in 1831, 8900 town, 2960 whole commune; in 1836, 9110 commune) [Roanne]: Villeroi, near Roanne, on the same river; Perouges, also near Roanne, on the Loire; St. Etienne, about 12 miles from Roanne, and 12 miles; and about 12 miles from the Somon; Nézonde, on a small stream running to the Loire; St. German La Val, about 12 miles from St. Etienne; St. Just on the Bourget and the Somon, and Ciéno; Auvergne, Changy, Crozet, and La Paccalidrie, on or near the Tessone. These are almost all small places. Perreux is famous for its wines. St. Symphorien de Laay (now part of the Orleans) is the most important town. There are iron and lead mines in the mountains, and quarries of granite, porphyry, and marble. Whetstones and tansy are also procured.
a hill: it has about 1000 inhabitants, who make hats and trade in the wool grown in the neighbourhood.

In the arrondissement of Montrouge, is Montbrison, capital of the department, on the Vizery, a small feeder of the Loiron; Mouton and Chaudrue, both near Montrouge; L'Hôpital and Boën, on the Loiron; St. Marcelin and Sury-le-Comtal, on or near the Maure; St. Bonnet-le-Châtel, near the Bouzon; St. Rambert and Feurs, on near the Loire; Panissière, near the Loire; and Chazelle and Galnier, or St. Galnier, near the Coize or Croize.

Montbrison, built in the twelfth century, was the capital of the district of Forez. The town is commanded by a very prominent tower, from which, in the religious wars of the sixteenth century, the Baron des Adrets, a Huguenot leader, is said to have precipitated his Catholic prisoners. The town is laid out ill and ill built; but great improvement has been made in it since the present civil war by filling up the ditches which previously surrounded the town, and forming a handsome boulevard on the site of them, and by laying out and building new streets. The college, or high school, formerly an Ursuline nun's house, has been converted as to become a handsome structure. There is a theatre and a fine range of barracks for cavalry. The courts of law, the church of St. Marie, and the corn-market are handsome buildings. The population in 1831 was 5046 for the town, or 2555 for the commune.

The townsman manufactures some linens of different fineness. There is a small public library, an agricultural society, a botanic garden, and the different public offices necessary in a departmental capital. There are public baths and a market, and the church has a large porch, and four of the towers with their battlements, which were known to the Romans. Some Roman antiquities have been discovered near the town, and among them is the ruins of an amphitheatre.

Feurs was the Forum Segusium of the Romans, the ancient capital of this part of Gaule: it gave name to the district of Forez. Many of the houses have cellars evidently of Roman construction. There are numerous vestiges of Roman monuments. Remains of aqueducts extend for more than a mile from the town. There is a small wall, with the extent and importance of the place. There is an ancient cromlech near the town. St. Galnier (pop. 1800 town, 2555 whole commune) has some manufactures of wax tapers for use in churches; the town is some little distance from a town, where there is a paper-mill, and some trade is carried on in the corn, wine, and wood of the surrounding country. L'Hôpital has about 1000 inhabitants.

In the arrondissement of St. Etienne are St. Etienne, on the river, 2335 inhabit.

Bourg Argental, on the Durance; St. Sauveur and St. Julien, in the neighbourhood of Bourg Argental; Le Champon and Firminy, on a small feeder of the Loire; St. Genest, on another small feeder of the same river; Chava- nay, on the Bourbion, or near the Rhône; St. Chamond and Rive de Gier, on the Gier; Chagnon, Romain, and La Pouilleuse.

At Bourg Argental (pop. 1734 town, 2502 whole commune) makes and some other silk fabrics are made from the silk produced of this town. Pussin near the Rhône, where the mulberry-tree is cultivated on a large scale. At Le Champon (pop. 1600) coal-mines are worked, rubbings, woolen, and flax, flax and ivory, are manufactured. Firminy (pop. 1750 town, 2699 whole commune) is a coal-mining town, and has the same manufactures as Le Champon.

St. Chamond (pop. 3475) is situated in a hollow, the sides of which are adorned by orchards, woods, and vineyards. Several of the houses are handsome, and have pleasant gardens. There is a church, and there are public baths and a pleasant public walk. Some vestiges of Roman antiquities have been found near the town. The inhabitants are engaged in throwing silk and weaving ribbons, in working coal-mines, and in the manufacture of nails, in the exportation of coal; and has the same manufactures as Le Champon.

Champond (pop. 1715) is a small village, which is situated in a hollow, the sides of which are adorned by orchards, woods, and vineyards. Several of the houses are handsome, and have pleasant gardens. There is a church, and there are public baths and a pleasant public walk. Some vestiges of Roman antiquities have been found near the town. The inhabitants are engaged in throwing silk and weaving ribbons, in working coal-mines, and in the manufacture of nails, in the exportation of coal; and has the same manufactures as Le Champon.

Near Rive de Gier (pop. 9175 town, 9706 whole commune) are extensive coal-works: the pits are above 950 feet in depth, and one pit is said to be nearly 1100 feet deep. There are iron-works in the town. There are several houses on the banks of the river, and there are public baths and a pleasant public walk. Some vestiges of Roman antiquities have been found near the town. The inhabitants are engaged in throwing silk and weaving ribbons, in working coal-mines, and in the manufacture of nails, in the exportation of coal; and has the same manufactures as Le Champon.

The town of Givors on the Rhône. Lyon is supplied with coal from this neighbourhood. Some of the coal in this arrondissement have been in a state of combustion for centuries. Muriate of ammonia is procured where this combustion is going on.

The population of the above towns, not otherwise distinguished, is that of the commune, and is from the census of 1831.

The chief branches of industry in the department have been noticed above. They depend almost entirely on the abundant supply of fuel furnished by the coal-mines of the department. In addition to those already mentioned, the manufacture of coal, of coal-mine, of coal-twine, of coal-cloth, of coal-cloth, of coal-cloth, and of coal-cloth, may be noticed.

The department of Loire, on the east of that of the department of Rhône, and on the former district, the province of Lugdunensis Prima. Some Roman towns were included within it, as Forum Segusium, Perris, Rodunnum, Ronna, Aqui Segesta, Belgica, a village on the bank of the Loire; and Carduelis, a town of the same name; and all the preceding are boroughs of Forez and portions of Le Beaulieu and Le Lyonnais proper, all subdivisions of the province of Lyonnaise. At the commencement of the Revolution the departments of Rhône and Loire constituted but one, under the title of Rhône et Loire, and they were subsequently divided.

LOIRE, HAUTE, a department in the interior of France, bounded on the north by the departments of Pur de Dôme and Loire; on the south and east by that of Ardechois; on the west and south by that of Cantal. Its form is irregular. Its greatest length is from east to west, from near Bresle to between Montfaucon and Bourg Argental (Loire), 66 miles; its greatest breadth from north to south is from near Craponne to the neighbourhood of Breteuil. Its area is estimated at 1931 square miles, which is considerably below the average extent of the French departments, but exceeds by 60 square miles that of the English county of Northumberland. The population in 1831 was 392,078, or 74 persons to the square mile, of which 33,066, or 17 per cent, are town population; 153,059, or 8 per cent, are city population; and 11,492, or 6 per cent, are village population.

The department is almost entirely mountainous, at least hilly. The chain of the Cévennes passes just along the eastern boundary; the mountains of Margeride, which unite the Cévennes to the central group of Auvergne, form the south-western boundary; and a branch of the Cévennes, with separate units, extends south of the Loire, passes northward through the middle of the department, from Pradelles to La Canized. Nearly the whole of the department is occupied by these mountains of the Cévennes, and the mountainous character is on the north side of the department, where the valleys of the Loire and the Allier extend to some breadth. The mountains consist for the most part of granite and the other primitive rocks, mingled with basalt and andesite, and the soils are thin, stony, and unsuited to agriculture. The climate is healthy, and the mountains are above the level of sea. This mountain, which extends to the principal range of the Cévennes, presents many magnificent ranges of basaltic columns. In the same area

...
Mont Tarasque, Les Infernals, Mont Caou, or Mont Chaud, and others; all mountains of similar volcanic origin and aspect. The rivers are the chief means of communication, the watercourses of the valleys and the rivers of the mountains. The rivers of the south are all derived from the mountains, and the streams that run into the sea are all formed in the mountains. The mountains are all covered with forest, and the valleys are all covered with forest. The rivers are all navigable for small boats, and the mountains are all covered with forest. The mountains are all covered with forest, and the valleys are all covered with forest. The rivers are all navigable for small boats, and the mountains are all covered with forest. The mountains are all covered with forest, and the valleys are all covered with forest. The rivers are all navigable for small boats, and the mountains are all covered with forest.

The population of the department is given as 1,200,000. The department is divided into three arrondissements, as follows:

- Le Puy, Central and S. (1,200,000)
- Yssengueux or Issengueux, N. E.
- Brioude, N. W.

It is subdivided into twenty-eight cantons, or districts under a justice of the peace.

In the arrondissement of Le Puy, the geological character of the department is remarkable. The volcanic rocks are of the form of an immense cube, the rock of Polignac (mentioned above) is an oblong square, three sides of which are precipitous, crowned with the ruins of an ancient castle; that of St. Michel is a lofty cone, above 300 feet high, having a church with a spire on its summit, so that it is seen at a distance of several miles. The town of Le Puy is described elsewhere. [Puy, Le.] The immediate neighbourhood of the city is remarkable for the picturesque forms of its volcanic rocks. That of Cornellé, which immediately commands the town, is of the form of an immense cube, the rock of Polignac (mentioned above) is an oblong square, three sides of which are precipitous, crowned with the ruins of an ancient castle; that of St. Michel is a lofty cone, above 300 feet high, having a church with a spire on its summit, so that it is seen at a distance of several miles. The town of Le Puy is described elsewhere. [Puy, Le.]

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stones, and whinstones are quarried in the neighbourhood of Langscle. Lempde is in a fertile district; it has a population of about 1,000: there is a bridge over the Alagnon. Excellent coal is dug in the neighbourhood. At the village of Vezzoulx, on the Allier, many boats are built for the navigation of the river.

The manufactures of the department consist chiefly of straw, flax, paper, and woollen stuffs; skins for holding wine or other liquors; bells for horses and mules, glass, and leather. The trade consists in the sale of the foregoing articles, which are exported, mule pelts, and deals. Three thousand individuals leave the department yearly to obtain employment in other departments as sawyers, embankers, chimney-sweeps, porters, &c.

This department constitutes the diocese of Le Puy, the bishopric of Le Puy, and the archbishopric of Bourges. It is in the jurisdiction of the Cour Royale of Riom, and in the circuit of the Académie Universitaire of Clermont Ferrand. It is in the nineteenth military division, the head-quarters of which are at Lyon. It returns three members to the Chamber of Deputies. There is a Protestant consistorial church.

In respect of education, it is one of the most backward of the French departments. Of the young men enrolled in the Conscription of 1829-30, not one out of every ten could read and write; being very little more than half the average number in France taken as a whole.

This department was the country of the Vellavi, a Celtic tribe whose chief town was Reverçio, now St. Paulien near Le Puy. The tombs of its inhablants are included in the town of Le Puy. It afterwards came into the hands of the Visigoths, then of the Franks, and in the middle ages formed part of the extensive dominions of the Counts of Toulouse, to whom it is probable that the bishops of Le Puy, who held the county, were subject. From the Counts of Toulouse the district came to the crown of France, under which it constituted part of Languedoc. The department comprises besides Le Velay, the districts of Vivarais and Le Gévaudan (two other subdivisions of Languedoc), the duchy of Auvergne, in the province of Auvergne, and of the district of Forez in Le Lyonnais.

LOIRE INFÉRIÈRE, a maritime department of France, bounded on the north-west by the department of Morbihan; on the north by that of Ille et Vilaine; on the north-east, for a little space, by that of Mayenne; on the east by that of Maine et Loire; on the south by that of Vendée; and on the west by the Atlantic ocean. Its surface is 5,235 square miles, extending from east to west. The department is bounded by the Seine from north to south, by the Loire from north to south, and by the Loing, a small stream that flows into the lake of Grand Lieu, 65 miles. The area of the department is estimated at 26,922 square miles, being rather greater than that of the English county of Somerset; the population is 607,600, and in 1836 it was 470,768, showing an increase in five years of only 675, or about one-seventh per cent, and giving 178 inhabitants to a square mile. In area, population, and in density of population it is considerably above the average of France; but in the last two particulars it is inferior to the English county with which we have compared it. Nantes, the chief town, is on the north bank of the Loire, at the junction of the Loire and the Erdre; in 47° 13' N. lat. and 1° 33' W. long.; 208 miles west-south-west of Paris in a direct line. The road from the city is by way of the road through Versailles, Chartres, Le Mans, and Angers.

The coast of this department presents a broken and irregular outline. It commences at the bottom of the little bay of Pornic, and extends to the estuary of the Vilaine, where the boundary between the departments of Loire Inferieure and Maine-et-Loire meets the ocean. This coast-line then forms the headland of Pointe du Pizac and Pointe du Croisic, with the intervening bay or roadstead of Pembrun, and Paimboeuf. Under the last two particulars it is inferior to the English county with which we have compared it. Nantes, the chief town, is on the north bank of the Loire, at the junction of the Loire and the Erdre; in 47° 13' N. lat. and 1° 33' W. long.; 208 miles west-south-west of Paris in a direct line. The road from the city is by way of the road through Versailles, Chartres, Le Mans, and Angers.

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The lake of Grand Lieu, which is the largest inland lake in France, is nearly six hundred smaller lakes or ponds whose aggregate area is about equal to that of Grand Lieu.

The only canal is that from Nantes to Brest, of which about 60 miles are in this department. The navigation of the Erdre is incorporated in this canal, and is included in the length above. From the Erdre the canal follows the valley of the Isre, on the right bank of that river, to the Vilaine.

There are six Routes Royales, or government roads, having an aggregate length of 259 miles, of which 208 were under the ministry of finance; the remainder was purchased.

The principal road is that from Paris to Nantes and Paimboeuf. It enters the department immediately after leaving Ingrande (Maine et Loire) on the north bank of the Loire, and proceeds along or near that bank by the bridge at Saint-Sulpice-de-Montauban; from the Erdre the canal follows the valley of the Isre, on the right bank of that river, to the Vilaine.

The air of the department is mild, but humid: the predominant winds are the south-west and north-east. The thermometer does not commonly exceed 95° (Fahrenheit) in the hottest part of the summer, or fall below 45° or 50° in the winter.

The department is considered healthy on the whole, though some diseases are promoted by the moisture of the climate.

The vineyards occupy nearly 8,000 acres; the yield is from 15,000 and 20,000 quintals (2000 to 3000 yards) per annum. There is an important manufacture of wooden shoes, serges, tiles, and bricks; iron is procured in the neighbourhood. This place is noted for conserves of angelica and other confectionery. Several government and commercial rapeseed mills are in operation.

The population of the department is divided into five arrondissements, as follows:

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<thead>
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<th>Arrondissement</th>
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<td>Savenny</td>
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</tr>
</tbody>
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It is subdivided into 45 cantons, or districts under a justice of the peace.

In the arrondissement of Nantes are—Nantes, at the junction of the Erdre and the Loire; Paimboeuf, a suburb of Nantes, on the south bank of the Loire; Châteaubriant, on the Sèvre Nantaise; Vallet (population 9,897) and Lorgues (population 3,418), between the Erdre and the Loire; Vieillevigne (population 3,418), on the Loire; Loges (population 3,418) on the Logne, St. Philibert (population 3,200), on the Boulogne, and Mâcheou (population 3,653) on the Falleron. Nantes had, in 1831, a population of 77,992 for the town, or 87,191 for the whole commune, or 82,192 for the commune of Nantes. Châteaubriant has a population of 3,418.

The town is at the junction of the Erdre and the Loire; the townsmen (pop. 1828 town, 24,898 whole commune) have a castle and manufacture some linens. Near St. Philibert, on an island in the lake of Grand Lieu, is a Druidical monument; and not far from the adjacent shore of the lake another. The inhabitants of the neighbourhood have a tradition that the lake was formed by a terrible convulsion, in which a town called Herbadilla was swallowed up.

In the arrondissement of Ancenis are Ancenis, Oudon, and Varades (population 3,200), on the Loire. Ancenis had, in 1831, a population of 2,053 for the town, or 3,249 for the whole commune, or 2,459 for the commune of Ancenis. Oudon has a large and picturesque octagonal tower, and the remains of a castle, said to have been built in the ninth century. The population of the commune is 2,336. There is no castle above one-third in the town itself; Varades is a very small village, new overgrown with trees; a town was once in the line of the ramparts. The townsmen manufacture 'sabots,' or wooden shoes, serges, tiles, and bricks; iron is procured in the neighbourhood. This place is noted for conserves of angelica and other confectionery. Several government and commercial rapeseed mills are in operation.

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There were many years since 300 men. In the arrondissement of Châteaubriant are Châteaubriant, on the Cher; St. Julien de Verneval, on the Loire; and Buais, on the Erdre; Châteaubriant had, in 1831, a population of 3,200 for the town, or 3,709 for the whole commune; in 1836 it had decreased to 3,534 for the commune. The town is of antiquated appearance, and is commanded by the ruins of an old castle, the principal from which some of the line of the ramparts. The townsmen manufacture 'sabots,' or wooden shoes, serges, tiles, and bricks; iron is procured in the neighbourhood. This place is noted for conserves of angelica and other confectionery. Several government and commercial rapeseed mills are in operation. The townsmen trade with Nantes, in coal from the neighbouring mines, wood for building and for fuel, and iron. At the village of Melleraye, between Châteaubriant and Nort, is a convent, now belonging to the monks of La Trappes; it was formerly a monastery of Benedictine nuns. The population of the commune consisted in 1819 of more than a hundred individuals, partly French and partly English. The English members had joined the community in their own country, where it had been settled for some time. At Dervall in this arrondissement there are some Druidical stones. There was formerly a strong castle at this village.

In the arrondissement of Paimboeuf are Paimboeuf and La Felleron, on the south bank of the Loire; Port St. Pierre, on the Erdre; and the port at Rennes, on the Erdre, Châteaubriant and Nort, on the Erdre; Châteaubriant had, in 1831, a population of 3,200 for the town, or 3,709 for the whole commune; in 1836 it had decreased to 3,534 for the commune. The town is of antiquated appearance, and is commanded by the ruins of an old castle, the principal from which some of the line of the ramparts. The townsmen manufacture 'sabots,' or wooden shoes, serges, tiles, and bricks; iron is procured in the neighbourhood. This place is noted for conserves of angelica and other confectionery. Several government and commercial rapeseed mills are in operation. The townsmen trade with Nantes, in coal from the neighbouring mines, wood for building and for fuel, and iron. At the village of Melleraye, between Châteaubriant and Nort, is a convent, now belonging to the monks of La Trappes; it was formerly a monastery of Benedictine nuns. The population of the commune consisted in 1819 of more than a hundred individuals, partly French and partly English. The English members had joined the community in their own country, where it had been settled for some time. At Dervall in this arrondissement there are some Druidical stones. There was formerly a strong castle at this village.

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forwarded to Nantes in small craft. Bourgueuf (pop. estimated at about 2000), gives name to the bay at the bottom of which it is situated, and in which the sand and mud are gradually accumulating, forming part of Bourgneuf em-

inence, except at high-water. A great deal of salt is made along the shore of the bay. Machecoul (pop. 3665) was formerly capital of the duchy of Retz, comprehending all (or nearly all) that part of the department which is south of the Loire.

In the arrondissement of Savennay are Savennay, on a little brook running into the Loire; Coueron (pop. 4053), Donges, and St. Nazaire, on the north bank of the Loire; Guérande and Le Croisic (pop. 2200 town, 2900 whole commu-

nity) on the south bank of the Loire; Pornichet, the Elorn, the Mean or Brévi; Blain (pop. 4699), on the Issac; and Herbignac. Savennay had, in 1836, a population of 2079 for the commune. There are salt-works here.

As Pontchâteau (pop. 3590) a large quantity of wash-leather is manufactured. Blain is described elsewhere. [BLAINE]

The population, when not otherwise distinguished, is that of the whole commune, and is from the census of 1831.

The manufacturing and commercial activity of this dep-

artment is considerable. Salt-works are numerous; and there are iron-works. Porcelain, glass, earthenware, pottery, and tiles; bed-ticking and serge in considerable quantity; cotton goods, leather, hats, rope, paper, cords, brushes, brandy, and wine are manufactured. Goods for export are made at Nantes, and the merchant service and for the navy, except ships of the line, is carried on; and the cod, herring, and coast fisheries employ many hands. Trade is carried on from the ports of Nantes and Saint-Nazaire with all parts of the world; and the imports and exports, and its tributaries afford consider-

able facilities for inland trade.

This department forms the diocese of Nantes, the bishop of which is a suffragan of the archbishop of Tours. It is in the jurisdiction of the Cour Royale, and the circuit of the Aunis; and, in consequence, the department is included in the twelfth military division, the head-quarters of which are at Nantes. It returns seven members to the chamber of deputies.

In respect of education this department partakes of the beneficence which characterises the whole of Bretagne. Of the young men enrolled in the military census of 1828-

29, only twenty-four in every hundred could read and write; the average of France was above thirty-nine in every hundred. This proportion was, in the first instance, the work of the Nantes or Nantais (Naydor, Strabo; Nayad, Ptolemy), one of the Celtic nations conquered by Caesar. They formed part of the Armorican confederacy broken and sub-

dued by that conqueror in the third year of his command. The department of the Loire, and the part of the south of which is included in the territory of the Pictons or Pictavi, an-

other Celtic people. In the Roman division of Gaul the territory of the Nantines was included in Lugudunum

Tartiss; that of the Pictones in Aquitania Secunda. Con-

diviciunum, or Condevuncum, the capital of the Nantines, sock in the later period the name Nantines, or Nantones, whence its modern name Nantes. Corbilo, another town of the same people, mentioned by Strabo, was on the south bank of the Loire, perhaps on the site of the present Le Pouliguen. The town of the Pictavi, is fixed by D'Avilly in St. Pierre, or St. Père en Retz. The district of Retz takes its name from Ratitum. The department constituted in the middle ages a portion of Lower Bretagne, and partook of the fate of the province. [BEAUNO-]

The district of the Pictavi, was constituted the duchy of Coslun; the western part south of the Loire constituted the duchy of Retz.

LOIRET, a department in the central part of France. It is bounded on the north by the department of Seine et Oise; on the north-east by that of Seine et Marne; on the east by that of Yonne; on the south-east, for a short space, by that of Nièvre; on the south by that of Cher; on the south-west by that of Loir et Cher; and on the north-west by that of Eure et Loir.

It is an irregular oval; its greatest length is from west-north-west to east-south-east, from between Orléans and Châteaudun (Eure et Loir), to the neighbour-

hood of Bonny on the Loire, 73 miles; its greatest breadth, at right angles to the length, is from the neighbourhood of Maleherbes to that of La Ferté-Senonnette, 31 miles. It is estimated that the area of the Loire is 1922 inhabitants, the department is below the average of France both in amount and density of population, and very far below the English county with which we have compared it. Orléans, the capital, is in 47° 34' N. lat. and 1° 54' E. long., 47 miles by land from Paris, in a direct line, or 71 miles by the road through Stamps.

The hills that branch off from the prolongation of the Cévennes in the neighbourhood of Autun, and extend north-westward, separating the basin of the Loire from that of the Seine, enter this department, and extend for some distance along the northern bank of the Loire, subsiding near the source of the Verm Via, a feeder of the Seine, which rises within three or four miles of the banks of the Loire. The hills of the forest of Odon, part of the south-west, and passing through a high land branching from the Armorician mountains, enter this de-

partment on the north-west side, and advance to meet the range of hills just described. They are separated only by a belt of low ground, which represent the two as forming one continuous range. With the exception of these low hills the surface is tolerably level.

The greater part of the department is occupied by the

slopes of the hills described below, which form the north-bank of Paris. These occupy the valley of the Loire for a short distance on each side of the river; and extend over all the country northward of the Loire and westward of the Loing. The districts east of the Loing and south of the Loire are occu-

pied by the marsh land which surround the chalk which support the banks of the Loire on each side of the river where the chalk is covered by superstruc-

tures rocks. The only minerals are building-stone and potters' clay.

The principal river is the Loire, which is navigable throughout. It enters the department at Bonny, and flows north-west by Briare, Gien, and Jargeau to Orléans, gradually bending to the west, so that at Orléans it courses nearly from east to west. From that city it passes through it gains to the south-west, and passing through Beau-

geney, enters the department of Loir et Cher. Its length in this department is estimated at about 80 miles. Several small streams join the Loire on each side. The

Loing, the longest of which is the Cher, is more than 70 miles long. Its springs however supply such an abundance of water as to render it naviga-

ble for two miles and a half. It is never entirely fre-

es;

over.

Other rivers belong to the system of the Seine, in the basin of which the northern part of the department is included. The Loing, a tributary of the Seine, rises in the department of Yonne, enters this department on the east side, and flows northward by Montargis into the department of Seine et Marne; of its whole course, which is estimated at more than 70 miles, nearly 30 miles are in this department. The Aveyron and the Quanne, tributaries of the Loing, have their source in the department of Yonne, but join the Loing in this department, to which about 15 miles of the course of the Quanne belong.

The canal of Orléans begins in the Loire, a little above that city, and runs north-east to the valley of the Moir-

ne, forming part of the western periphery of the Loing, along which it proceeds until it joins the east side of the Loing. The length of this canal may be estimated at 45 miles. The canal of Briare commences in the Loire at Briare, and runs northward, but by a circuitous course along the val-

ue of the Loing, first on the right, then on the left, and so of the river, to Montargis; its length may be esti-

mated at nearly 35 miles. It crosses a projecting portion of the department of Yonne; otherwise it belongs entirely to the of Loire. The canal of the Loing commences at Montargis, and communicates with the Sologne canals, and follows the valley of the Loing, first on the left, then along the bed, then along the right, as the book, 45 miles
again along the bed of the river till its junction with the Seine at Moret. Of its whole length, which may be estimated at about 33 miles, about 12 miles belong to this department. Of the lateral canal of the Loing, from Divonne to Briare, to avoid the natural difficulties of the navigation of the river, about 11 miles is in this department.

There are in the department nine Routes Royales, or government roads, including the turnpike roads of 209 miles, viz. 128 in repair, 63 out of repair, and 46 under repair (1 Jan. 1837). A road runs from Paris to Orléans, it enters the department at Arpajon, and direct to Orléans. From Orléans two roads run, one along the north bank of the Loire, by Bourges and Beaugency, and Le Loir et Cher, and Tours (Indre et Loire); the other, crossing the Loire by the bridge at Orléans, runs south to Châtellerault and Limoges. Another road from Orléans follows the north bank of the Loire to Gien and Briare, where it ends in the road through forests from Paris to Nevers (Nièvre) and Moulins (Allier). Other roads run from Orléans by Montargis, to Courtenay in the north-east part of the department, and to Châteldon in the department of Eure. A turn road from Paris to Nevers and Moulins, and from the latter to Germont on the other, enters the department on the north side, near Ferrières, and runs south by Montargis to Briare, where it unites with the road from Orléans to Nevers. The main departmental road from Orléans to Nevers, and one of the main roads (or roads), fourteen in number, have an aggregate length of more than 25 miles, and of which about two-thirds are in repair, the rest out of repair or unfinished. The by-roads and paths exceed 12,000 in number, and have an aggregate length of above 100 miles.

About one-sixth of the soil consists of rich loam, and as much of gravelly or stony land, or of uncultivated heath or other waste; the remaining two-thirds consist almost entirely of a light sandy soil. The produce in grain, is considerable, probably, and far exceeds, the consumption of the department. Almost two-thirds of the land are arable. A considerable quantity of pulse, fruit, sugar, flax, hemp, and colza, are raised. The banks of the Loire, between Briare and Orléans, constitute one of the great vineyards of France, the vineyards of Beauce, which rise to the northward of this baronet tract, are covered with vineyards: the red wines which they produce are of excellent quality; the white wines are very superior.

The quantity of meadow land is about 60,000 acres; the extent of the commons and other open pastures is about 140,000 acres. A great quantity of poultry, dairy cattle, sheep, and other flocks, is raised; the surplus is considerable: there is a great variety of fish in the lakes of Beauce, and the honey is of excellent quality. The rivers, with the numerous sluices or pools, supply the neighbouring departments with fresh-water fish. The quantity of woodland is considerable, and nearly one-eighth of the whole is covered with forests. The principal forests are those of Orléans in the central part, and of Montargis in the eastern part of the department.

The department is divided into four arrondissements, as follows:—

<table>
<thead>
<tr>
<th>Arrondissement</th>
<th>area (sq. miles)</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orléans</td>
<td>32,280</td>
<td>190,104</td>
</tr>
<tr>
<td>Pithiviers</td>
<td>23,620</td>
<td>160,329</td>
</tr>
<tr>
<td>Gien</td>
<td>28,560</td>
<td>184,250</td>
</tr>
<tr>
<td>Montargis</td>
<td>30,900</td>
<td>190,210</td>
</tr>
</tbody>
</table>

The number of cantons, or districts under a justice of the peace in the department of Orléans is Orléans (pop. in 1831, 40,161; in 1836, 40,272) [Orléans]; Châteauneuf (pop. 26,564 town, 3160 whole commune); Meung (pop. 25,109 town, 4630 whole commune); and Beaugency (pop. 4856), all on the Loing near the Loire; Jargeau, Meunin, and Notre Dame de Cleré, near the south bank; Orléans on the Loire; Pacy near the Conne, a feeder of the Loir; Neuvillette near the source of the Oust and Escou, a feeder of the Seine; and Montargis, a town noted for its manufactures of coarse woollens and linens. Meun, or Meung, has an ancient palace, formerly belonging to the bishops of Orléans. The inhabitants of P.C. No. 106.

The town are engaged in tanning and paper-making, in the cultivation of the vine, and in fishing. There are many corn-mills. It was the native place of Jean de Meun, a poet of the middle ages, of some repute at the court of Philippe le Bel. The town was several times taken in the wars with the English, and in the civil dissensions of the sixteenth century. Beaugency has a bridge of thirty-nine arches over the Loire. The townsman manufacture serges, woolens, and linens, and have several distilleries. The wines of the neighbourhood, as well as of the Loire, are celebrated, and furnish a considerable article of trade. Jargeau was taken by the English in the war under Henry V. and VI, and retaken in the year 1429. Notre Dame de Cleré has a church, formerly a priory, which at a distance forms a striking object. Louis XI. rebuilt this church, which had been destroyed by the English, and directed that his body should be buried there instead of at St. Denis. His request was complied with; and his tomb, which had been removed during the Revolution to Paris, was replaced in its former situation after the restoration of the Bourbons. It was at one time much resorted to, from the fame of the miracles which the Virgin was supposed to work there. At Olivet the great Duke of Guise was assassinated by Filot, as he was preparing to form the siege of Orléans. Patau was the scene of the first pitched battle won by the French over the English, after the appearance of Jeanne d'Arc had turned the tide of success.

In the arrondissement of Pithiviers are Pithiviers (pop. in 1831, 3885 town, 3595 whole commune; in 1836, 3233 commune) and Malahéres, on the Oise; Orson; Puiseaux (pop. 1876 town, 1706 whole commune), between the Eure and the Seine, a feeder of the Loing; Beauce and Bois-rond, on the Seine; Montargis, on the Loire, between Ache and the Arthaud; and Asnières à Marché. Pithiviers is well known for its breads and cakes and its lark-pies, of which a considerable number are sent to Paris. Considerable trade is also carried on in cattle, wine, vinegar, honey, and saffron. The town has three yearly fairs. The saffron and breads of Pithiviers is considered the best in Europe. Building-stone, which takes a polish almost equal to marble, is quarried in the neighbourhood. Maleheeres was the lordship of one of the ministers and the defender of Louis XVI. on his trial before the Convention. Puiseaux was nearly a village before the Revolution. 1536 houses were overthrown. A considerable number of cattle were raised.

In the arrondissement of Gien is Gien (pop. in 1831, 4631 town, 3177 whole commune; in 1836, 3530 commune), a military town, and a barrier placed in the road from Paris to Orléans. It is served by the railway from Orleans to Moret. The population of the commune at the commencement of the present century was 2500.

In the arrondissement of Montargis are Montargis (pop. in 1831, 6781; in 1836, 7757), Châtillon sur Loing (pop. 1721 town, 2126 whole commune), and Bonny, all on the north bank of the Loing, and near the Loire; St. Gondon, and Sully, on the south bank. Gien has a handsome bridge over the Loire. The chief, not the only manufacture, appears to be that of superior earthenware. Montargis consists of one main street, straight and tolerably well built; and is chiefly inhabited by the boatmen who work on the Loire, or on the Canal de Briare, which here opens into that river. A considerable trade, especially in wine, is carried on, which is promoted by the situation of the town at the junction of the Canal de Briare with the Loire. Bonny, or Boni, is a tolerably good looking town, about the same size as Sully. Sully has a handsome château and a church formerly collegiate. It gave the title of duke to Maximilian de Bethune, minister of Francis I. The population of the commune at the beginning of the present century was 2500.
pointed out the grave and overname in a legal combat the
asassin of Aubry de Mondylier, his master. The incident
was dramatized and performed with considerable success
by the London scene-painters, under the title of 'The Dog of
Montargis,' or the Forest of Bondy. The castle
was pulled down about A.D. 1810. The streets of
Montargis are broad and straight, but the houses are ill
built. The only part of the old town is the market
place, which is much admired for its architecture. There
are two large paper-mills forming one establishment about
a mile from the town; in the same establishment woollen
rugs are reduced to the state of wool for the purpose of be
ing woven. The town of Montargis is
promoted by the canals of the Loing, of Orlans, and of Briare,
which unite near the town; the chief articles of trade are
rags, corn, wine, wood, and wool. The exhalations
from these canals have caused a deterioration in the air of
the place, once so famous for its purity and healthful
Montargis has a handsome theatre, one or two subordinate
courts of justice, and an agricultural society. This
town was besieged by the English, A.D. 1427, but the siege
was raised, and the besieging force entirely defeated by Dunois,
bastard of Orleans. It was never taken by Edward III
in A.D. 1431, and retained by them till A.D. 1438. Mont-
argis was the birth-place of the quietist Madame La Motte
Guyon, whose poems were translated by Cowper, and of
Manuel, procuror or attorney of the commune of Paris in the
days of the Revocation of the Edict of Nantes. The Château
de Chantilly was the residence of Admiral Coligny. Château Renard was one of the
strongholds of the huguenots in the religious wars of the
sixteenth century: its fortifications were on that account
destroyed by Louis XIII. Louis XIV. was afterwards
enriched by a custom by which all questions of
spatiate debts, in the absence of documentary evidence,
by single judge between the debtor and creditor; if gente-
lemen, with swords; if of inferior rank, with fata.
By the Law of Nogent the name of
remain is some remains of a Roman town or post, the name of which is unk-
nown. The principal relic is a theatre, in the enclosure of a
château, called Chenevier. The benches or seats are
formed of small cubical stones, similar to those employed
in the Egyptian pyramids. Some of the seats of mar-
ble, and other antiquities have been discovered; and
in the neighbourhood of the theatre, in a thicket, are some
remains supposed to be those of baths. These antiquities
have been but little noticed by the French antiquaries.

The wool of Beauce and Sologne is made up into various fab-
rics: parchment and hosiery are manufactured; and sugar
reifying, vinegar-making, &c. The distillation of brandy are
conducted on a considerable scale. Trade is carried on in the
agricultural produce of the district, in brandy, earthenware, and moulds for the sugar-refiners.

The department constitutes the diocese of Orléans, the
bishop of which is a suffragan of the archbishop of Paris.
It is one of the eight departments of the Central
province of the Académie Universitaire of Orlean; and in
the first military division, the head-quarters of which are at Paris.
It returns five members to the Chamber of Deputies.

In respect of education this department is rather above
the average of France; the number of young men in the
military census of 1829-29 who could read and write
was forty-two in every hundred; the average of France
being rather more than thirty-nine.

This department formerly constituted the part of the territory of the Gallician nations of Celtic stock.
In the Roman division of Gaul it was comprehended in
Lugdunensis Quarita. Genabum, or Cenabum, the modern
Orleans, was one of the chief trading stations of the Car-
nutes. This town took a subsequent period the name of
Aurelianum, probably from the name of Aurelian, who is
mentioned in the Itinerary of Antoninus by the name of
Belca, which is probably the present village of Bouzi, on the
left of the road from Orleans to Gien. A part of the terri-
tory of the Sempes, another Celtic nation, is included in the
department: Brivodorum, the modern Briare, was one of
their towns. In the decline of the Roman Empire, this
department was ravaged by the Huns; and afterwards di-
vided between the Franks and the Visigoths, whose terri-
tories frequently met and were afterwards
altogether into the hands of the Franks, and in the division
of their territories among the sons of Clovis, formed part of the
kingdom of Orleans. It was included in the great
Duchy of France united to the crown by Hugues Capet.

[LOR] It comprehends Orléansis proper, with part of
Castinos and Dunus, subdivisions of the province of Or-
leansis; also a part of the former province of Berri.

LOKMAN is represented in the Koran and by later
Arabian tradition as a celebrated philosopher, contemporary
with Dhu'l-Qarnayn and Sufyan. He is the mid-3rd
century contended. He was, we are told, an Arabian of
the antient tribe of Ad, or, according to another account,
the king or chief of that tribe, and when his tribe perished
by the Seil-ul-Arîm [ARABIA, vol. ii., p. 215] he was
preserved by a miracle. Other statements, drawn mostly from Persian authorities, state that Lokman was
an Abyssinian slave, and as noted for his personal deformity
and ugliness, as for his wit and a peculiar talent for com-
posing moral fictions and short apologies. He was con-
sidered to be the author of the Arabian Nights, and
of certain fables in Arabic, which still exist under his name.
There is some reason to suppose that Lokman and Asoop were
the same individual. This supposition is founded on the close
connexion of the traditional accounts of the person,
character, and life of Lokman, with those of Asoop.

[AESOP, vol. i., p. 155.] Even the name of Lokman may, by a slight transposition, be derived
from the Greek Alkmaon. If Lokman is not altogether
a fictitious person, his history seems to have been
engraved by the ancients upon the person of Coman,
probably one of the numerous incidents of his life on the few circum-
stances recorded by the classic writers respecting that of
the Greek fabulist. He may have been induced to do it by the
appearance of the eldest and most ancient form of the
name (from lloa and boq, which to a Greek would seem to
force derivation), and this assumed Asiatic origin might
afterwards give rise to his dull buffooneries, his bodily defec-
tions, and Aethiopic extraction.

The figures of the son have by no means the character of
antient and original Greek compositions. Many of them
are strongly marked with an Oriental character. They
bear a very striking resemblance to the Indian fables in the
'Panchatantra;' they allude to Asiatic manners and cus-
moms; and display a brave and healthy energy, which are
found in Upper Asia, as monkeys, peacocks, &c. In the fables of Lokman
the same peculiar features frequently occur. Hence we may safely infer that both collections
were originally derived from one common source, the Indo-
Persian entertainment of Lokman, with that from they cer-
cainly came the fabulous work attributed to Snydias
(who was no other than the Sindbad of the 'Arabic Nights'),
and other works of that kind, which during the middle ages so powerfully attracted attention of Europe.

In the later sans fables have been often reprinted for the use of those
who are beginning to study the language, after the first
edition with a Latin interpretation, by Erpenius, Lord
Vevey, and others; and in several instances, Paris, 1818;
Freitag, Bonn, 1823; and Rodiger, Hain, 1825.

LOLICO. [SEPIAEDE; TRUTTIDÈRE.

LOLICOPSIS. [SEPIAEDE; TRUTTIDÈRE.

LOLUM is a genus of Grasses, containing a few species
found in various parts of the earth, and in the
boreal and temperate zones, in the northern hemisphere, in de-
dined as follows:—Spikelets many-flowered, dichotous, cory-
ncary to the rachis, sessile. Flowers not bearded at the
base. Glumes 2, nearly equal, one of them often short
er. Paleae 2, 1st one smaller, 2nd lanceolate, awned. Flowers
2, herbageous; the lower coman, awned, the upper short under the apex; the upper with two keels. Stamens 3
Ovary smooth. Styles 2, very short. Sizman going
in Hypogynous scales 2, fleshy, entire or two-lipped.

Racemes 2, 1st one smaller, 2nd lanceolate, awned.

LOLLO-M. [SPOLENIUM, the common Ray-grass, or Rye-grass of the
former, with lanceolate awned spikelets which are larger
than the glumes, a naked stem, and a perennial root.
L O M

which, is one of the most valuable of our pasture grasses, an account is given elsewhere. [RYE-GRASS.] 2. L. lemmulorum, or darnel, with elliptical avened spikelets, straight awns longer than the paleae, glumes the length of the spikelet, and an annual root. Of this species mention is made not only in all parts of Europe, but in Japan, New Holland, China, and Monte Video; it is remarkable as being one of the first of the Appian grasses to be brought over to America, being brought in a bottle by Captain Cook, who was the first to bring it over to the New World. It is the same one that is brought over to the New World, and is the same one that was brought over by Captain Cook, who was the first to bring it over to the New World.

LOLLARDS, a religious sect which arose in Germany at the beginning of the fourteenth century, and differed in many points of doctrine from the church of Rome, more especially regarding the ascetical and contemplative state for men. It took its name, according to some writers, from Walter Lollard or Lollard, who was burnt alive for these doctrines at Cologne in 1322; but it would seem that Walter rather received his name from the sect, than the sect from the story being told of him. He appears to be the German *lullen, tollen, or tolten,* to sing, with the well-known termination of hard which is subjoined to so many German words; and it implied a person who was continuously praising God in sacred songs. Lollard subsequently became a by-word, i.e., it did not convey good, but to conceal erroneous doctrines under the appearance of piety; and, in England, at the close of the fourteenth century, it was given to the followers of Wicliffe. Knighton, noticing the success of that reformer's doctrines (Thyseh Shape, 1), in philosophical movement, the only way to rule the people of England in a few years became Lollards.

MOSEHEIM, in his *Eclesiastical History* (b. ii., part ii., ch. 2), observes, 'Charles, duke of Burgundy, obtained a decree from Sixtus IV., in the year 1472, by which the Celiotes or Lollardist sects, who were to be noted for the number of the people in England in a few years became Lollards.'

LOMATERCES. M. Bronn has given this name to a generic grouping embracing certain of the Linnaean Grapholith [Grapholithus] instead of Pridion, which had been assigned to them by Nilson, but previously employed by Curver for a genus of flax. Grapholithus scalaris and G. sagittarius, Linn., belong to this group, which as far as yet known is confined to the *transition strata,* in which it occurs in Norway, Bohemia, France, North Germany, Shropshire, &c., generally accompanying the lithcey. (Brbron, *Liz.,* p. 280.)

LOMBARD, an ancient name in England for a banker.

It is derived from the Langobardi, or Lombards, a company of Italian merchants, the great money-changers and assessors of the thirteenth century, who appear to have settled in England before the year 1274, and took up their first residence in a street of the city, still called, from them, Lombard Street.

Stowe, in his *Survey of London,* 4to. 1663, p. 269, says, "There was a shop of the Lombards and other merchants, strangers of diverse nations, assembling there twice every day. The meeting of which merchants and others there continued until the 22nd of December in the year 1568, on which day the said meeting began to change the city of London from the old place then new built for that purpose in the warden of Cornhill, and was since by her majesty Queen Elizabeth named the Royal Exchange."

The extortions of the Lombard merchants in King Edward III.'s time became so great that he is stated to have seized upon their estates. They continued however to follow their trade; and when Henry VI. borrowed money of them, they had the customs mortgaged to them for security.

(Du Cange, *Glos. v. *Langobardi; *Pennant's Hist. of Lond.,* ed. 1797, p. 407; *Nares's Glossary.*)

Lombard. A Gothic architectural style, which has already been touched upon in the article Gothic Architecture (vol. xi., p. 320), may claim to be considered the generic one which prevailed after the extinction of the Roman until the appearance of the Pointed or Gothic. It is said that the Lombards, who were descendants of the people of Lombardy, were greatly diminished in size, that is, although they retained the same proportions as before, they were upon a comparatively diminutive scale in proportion to the edifice itself, and consequently did not make the same impression in height on the eye. Consequently, though nominally no change had been made, in reality a great revolution in art had been effected.

Notwithstanding therefore that we are accustomed to regard the Lombardic historically as altogether another style, it is not without a character from that which it supplanted than the latter does from the earlier Greco-Roman. In fact it was only a further development of the system introduced during the decline of Roman architecture, and so much more consistent and homogeneous that it is not difficult to reconcile discordant features and conflicting principles, namely, small orders applied merely as decoration, and tiers of arches whose piers form the solid parts and supports of the structure. Whether it was the result of chance, caprice, or necessity, or all three, the Lombardic style reconciled these two contradictory modes by combining together the arch and the column, and rendering the latter the essential support of the former. It is true, arches resting upon inauspicious little columns of square blocks, yet bound together, for instance, in what are now the churches of St. Costanza and Santo Stefano Rotondo, at Rome; but in such cases, instead of springing immediately from the capitals of the columns, the arches rest upon a piece of entablature forming a square block of stone, itself resting on small columns, and showing a less close resemblance to those of the Corinthian order in contour and proportion. The capital itself however was larger in proportion to the rest of the column, thereby affording a greater surface or impetus for the arches to rest upon; and also promising the application of the entablature to that point with general lightness of appearance. The shaft was mostly plain, yet frequently highly ornamental, striated or carved in different ways, and sometimes twisted, either singly or with two stems twining spirally around each other. Columns furnished in examples of all these styles, and frequently occur in the cloisters of San Paolo and San Giovanni laterano at Rome, and the capitals present quite as much variety, it seeming to have been the aim on such occasions to introduce as much diversity as possible in the conception of the same kind placed together; a practice probably originating in making use of columns and fragments taken from other buildings; and afterwards retained as conducing to variety and richness.

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Although the arches were, as frequently as not, quite plain, and without archivolt mouldings of any kind, the use of archivolt was by no means uncommon; sometimes consisting of merely a single moulding enclosing a plain border around the arch, at others divided into fasciae, and more or less enriched, all so in the front of the cathedral of Pisa, in which building the arches describe more than a semicircle above the capitals of the columns, being prolonged downwards by a deep abacus, consisting in some places of two, in others of a single plain block resting immediately on the capital; a mode certainly preferable to that of placing a mere lump of entablature upon the column, and not ungraceful in itself, because it gives greater height and importance to the arches, which, being narrow, would else appear stumpy, depressed, and overloaded by the ornament around them. Similar blocks or abaci occur in the remains of Frederick Barbarossa's palace at Golshausen, where small heads or masks are introduced immediately above such abaci, so as to fill up the space there between the arches, and continue in some degree the vertical lines produced by the columns. Among the other more prominent characteristics of this style, which are all that we can here touch upon, it should be noticed, that whether forming actual porticos and galleries, or closed up and applied merely as decoration, these arcades were generally small in proportion to the building itself, and instead of occupying the entire width of the front, or other elevation, were mostly inserted into distinct compartments of it, slightly recessed within the general face of the building, and divided the different stories or stages of the edifice. Such buttress-like surfaces—for buttresses they cannot properly be termed—were occasionally more or less enriched; sometimes so much so, as to produce vertical lines of ornament continued the entire height of the building in the front of San Michele at Pavia—which city may be considered as the cradle of Lombardic architecture. When, as was frequently done, these surfaces were made wider at the angles of the front than elsewhere, they gave an expression of repose and of great solidity to it, serving as it were a frame to the architectural decoration. Among the other peculiarities of this style, that arising from small open galleries immediately beneath the cornice or roof is too remarkable to be overlooked, especially in the façade of the arches of such galleries for the slope of the roof itself, the columns being successively elevated one above another on steps (so that the base of those supporting the centre arch are above the lower arches), as at San Michele, just mentioned; or else by placing the columns on the same horizontal line, and gradually increasing their height, as in the front of Pisa cathedral. To this may be added the very prevalent custom of making an upper cornice or border of very small interlacing arches, or rather of mouldings producing that appearance. Pinnacles are of rare occurrence, and when introduced have the look of being set on the part they rise above, being separated from it by horizontal mouldings; besides which they are generally low, and somewhat resemble pedestals. Pinnacles of this description may be found surmounting pilaster-breaks, and cutting through either an horizontal cornice or the sloping ones of a gable, as in the front of the cathedral at Monza.

To render the above sketch account of this medieval Italian style more intelligible, some of its elements and leading forms are here indicated in a sketch exhibiting two different compositions of a façade; the half front marked A showing the columns of the arcade in the gable all of the same height, but placed at different levels, while that marked B places them standing on the same horizontal line, and consequently unequal in height. The side B also shows a variation in regard to the form of the gable, which, instead of extending the whole width of the front, takes a horizontal direction over the arch at the angle. An ornamental pilaster face is also introduced in this division of the cut, and, although rather peculiarly applied, is warranted by the authority of San Michele at Pavia. A very imperfect idea however is thus conveyed of the variety of features, combinations, and proportions which the style itself admits.

The other cut gives an example of an arcade on a larger scale, with columns variously ornamented, and having their capitals surmounted by blocks, which give greater elevation to the arches themselves. This however is only one particular mode; besides which both the columns and arches here shown are uniform in their proportions, and consequently must not be considered as attempting to afford a definite standard of a style which permits such very great latitude in regard to features of that sort.

LOMBARDO VENETIAN KINGDOM, REGNO LOMBARDO VENETO, is a state of North Italy, comprised of the former duchies of Milan and Mantua, and of the territory of the late republic of Venice. The duchy of Milan came into the possession of Charles V. in 1535, after the death of the last duke Sforza, who left no issue. [Lombard.] Charles V. left it to his son Philip II. of Spain; and it remained under the Spanish branch of the house of Austria for a century and a half, until the extinction of that branch, when by the result of the war of the Spanish succession it passed under the dominion of the German branch of the house of Austria. The duchy of Mantua was governed for a long time by the Gonzaga as a fief of the empire, but the last duke, Ferdinand, having sided with the French during the war of the Spanish succession, the emperor Joseph I. put him under the ban of the empire, and the Austrian troops having taken Mantua, the emperor annexed it to the duchy of Milan. Austria continued to govern these united states till Bonaparte's invasion of 1796. By the peace of Campoformio of the following year Austria gave up Milan and Mantua, and received as a compensation for them and Belgium, which was also taken from her by the French, the territory of the republic of Venice, which
Bonaparte had overthrown. Milan and Mantua, or Lombardy Proper, were constituted first as a republic dependent on France, and afterwards into a kingdom, of which Napoleon made himself king in 1805. At the close of that year, in consequence of the campaign of Austerlitz, Napoleon retook from Austria the Venetian territories, which he annexed to Lombardy, styling the whole by the name of the kingdom of Italy, though this new kingdom did not comprise above one-third of Italy. He added to it the state of Modena, the Legations, and lastly in 1809 the Papal Marches. The whole population of this kingdom was about six millions. In 1814, the kingdom was detached from Austria, and the public works of the first connection with the Tyrol, far from the north-west, but is bounded by the main chain of the Rhätisa Alps, from the Ortler Spitz to Monte Jorio, which divide it from the Grisons. From Monte Jorio, a regular boundary line, not very defined, was marked out, chiefly determined by the limits of the state of the Canton Ticino, which forms part of Switzerland. This boundary line between the two states terminates on the eastern coast of the Lago Maggiore, a few miles north of the town of the river Tresa. From thence southwards on the right the Po is the boundary, which issues from it, mark the western boundary of the Lombard-Venetian kingdom, and divide it from the Sar- dinian territories. The course of the Po marks its southern boundary, and separates it from Parma, Reggio, and the Papal Marches; in one part the Po is the boundary, where a slip of ground along the southern bank of the Po, which belonged to the old duchy of Mantua, continues to form part of the present Austrian Lombardy. In the delta, formed by the Po, the branch of that river called Po d'Arnao, the mouth of which is named Porto di Goro, marks the limits between the Austrian and Papal territories. [FERRARA, LA CAJONNE, Di.] The eastern boundary of the kingdom is formed by the Adriatic. Its limits on the north-east are due to the mouth of the river Ausa, west of the Isonzo. [FaUcI.] The Lombard-Venetian kingdom is governed by a Vicerey, who is generally an arch-duke of the Imperial Austrian family, and resides at Milan: it consists of two great administrative departments: 1st, the Department of Milan; and 2nd, the Province Venetia, or government of Venice. These divisions acknowledge for their respective political heads the governors of Milan and Venice. Each division is subdivided into provinces called Delegazioni, and each province is divided into districts, and at the head of each district is a commissary. The districts are subdivided into communes, and each commune has a podesta for its local magistrate. The provinces are described under the following headings: Bergamo; Brescia; Como; Cremona; Lodi; Crema; Mantova; Milano; Pavia; Sondrio, or Valtellina. The Venetian provinces are likewise described under Belluno; Padova; Rovigo; Treviso; Verona; Venice, consisting also, by sub-division, of the provinces of Venice (Boletino di Notizie Statale), published by Lampato, Milano, Maggio, 1839. We have not seen any corresponding statement concerning the Venetian provinces later than 1832. The population of the kingdom consisted in 1832 of 4,279,000 persons, namely, 2,379,000 in the Lombard provinces, and 1,900,000 in the Venetian. (Serristori, Saggio Statistico dell Italia, Vienna, 1833.) In 1837 the population of the Lombard provinces had increased to 4,660,079. (Boletino di Notizie Statale, published by Lampato, Milano, Maggio, 1839.) We have not seen any corresponding statement concerning the Venetian provinces later than 1832.

The governor of each of the two great divisions of Milan and Venice is advised and assisted by a central congregation or provincial assembly, consisting of landholders and deputies from the royal towns, of which there are several in each province. Every province returns two landholders, one noble and the other not noble, as deputies, and every province returns one representative. The respective communal or municipal councils select three personages out of which the king, as a king of Lombardy, chooses one as a deputy. The deputies are elected for six years. These congregations are not legislative assemblies, but boards of Administration; they settle the propriety of taxes, both general and local; they inspect the accounts of the city of Milan, bridges, &c., and have also the superintendence of the charitable establishments of the country and their revenues. They can petition the sovereign concerning the wants of their districts, and the wishes of these petitions are by a majority of votes. In every head town of a province there is a provincial congregation consisting of eight, six, or four landowners, one-half nobles, and the other half not nobles, who concern themselves especially with the administration of the municipal and charitable finances of their respective districts. The communes have their own counsellors, and a complete system of communal administration has been established. (Collection de Constitutions, Chartes, et Lois fondateurs des Peuples de l'Europe et de l'Amérique, Par Dufay, Duverger et Gaudet, vol. iv.)

The administration of the Lombard-Venetian kingdom since the Restoration has paid peculiar attention to the material improvements of roads, bridges, canals, dykes, and fortifications. Thus, in the course of fifteen years, from 1820 to 1834, the treasury has expended two millions of livres for the Lombard provinces alone. This amount is independent of the sums expended by the communes for the communal or cross roads, which from 1814 to 1834 amounted to a sum of forty-four thousand miles, or a length of 3994 miles of road. Thirty-five years since there are no fewer than 3000 miles of provincial roads in Lombardy, desiring the name. Of the forty-two millions disbursed by the government treasury, five millions have been employed in constructing roads and bridges, and in the present year, 1839, four millions in completing the great canal called Naviglio; a million and a half in making roads in the mountainous districts of Bergamo; about as much again for the great commercial road of the Splügen; two millions and a half for the road over the Alps; and still more for continuing it along the eastern bank of the lake of Como down to Lecco; 2,333,000 livres for completing the cathedral of Milan; another million for other improvements at Milan; 600,000 livres for the splendid bridge at Buffalora on the Ticino; 200,000 livres for a new aqueduct for the dead and dumb; 270,000 livres for buildings necessary to the university of Pavia; 103,000 for a new college at Sondrio in the Valtellina; half a million for roads in the province of Vercelli, and so forth. The state of Lombardy is that 'nowhere perhaps on the Continent is the administration of the roads and bridges more actively and usefully employed than in Lombardy. The whole of this part of Italy exhibits a solid material prosperity; it presents the fine side of the country, with roads and bridges in its own right, well paved, and they are kept in repair with the greatest care. This government, economical and parsimonious in other respects, is great and magnificent in this. The excellent state of repair of the high roads of the Lombard-Venetian kingdom is maintained at the annual expense of about 1,305,000 francs for 1518 Italian miles (60 to 1 of lat) of length of road. (Valqy, Voyages en Italie, b. 2, ch. xiv.)

The towns of Lombardy, Brescia, Bergamo, Como, and Milan above all, are being embellished, and are increasing in population. Venice is the only exception to this generally prosperous condition: but Venice had been wholly decaying for a century before its fall; and Bona- parte re-established it, by sub-division, into three districts, and they are kept in repair with the greatest care. The subsequent stagnation of maritime trade, during the long war that followed, aggravated her distress. When Venice came into possession of Austria in 1814, there were no less than 44,000 individuals, nearly one-half of the population, who received no relief from charity. The hospices and other houses for the old, the infirm, &c., were in a state of decay, and from 1814 to 1821 nearly four millions and a half of livres were spent in maintaining and supporting these institutions, which were more in the following ten years. By these means, about 6000 helpless individuals were relieved. The house of industry for the able-bodied poor had been neglected by the French administration, and the communes or municipality of
Venice was too poor to bear the extraordinary charges required in order to put that institution in a fit state to fulfil its object. The government took it in their own hands for some years, and spent 719,000 livres upon it, till the year 1821, when it was bought, by the inhabitants of Venice, in a precarious condition, being able to supply its expenditure by its own means and the produce of the labour of its inmates. Besides the classes thus relieved, there were still numerous families, many of whom had seen better days, but who had for some years past required the charity of the government. For these a Commission of public beneficence was established, consisting of the principal citizens, with the podestà and the patriarch at their head: the government began by contributing to its funds at the rate of 100,000 livres a year; in 1839 the appropriation done in the previous year had increased so that now it has an income of about half a million of livres. It distributes relief, especially during winter and in seasons of dearth, to nearly 40,000 individuals annually. The payment of pensions to former public servants, and to several of the old patrician families (who lost their incomes by the fall of the republic), which had been interrupted under the French administration, was resumed by the Austrian government. Independent of these direct helps, the government undertook the repair of a great number of public buildings which were threatened with ruin, as well as of the canals and bridges, and especially of the great marble dyke called the Murazzi, upon which Venice depends for its safety from the waves of the Adriatic. The whole, as we have seen, has since been spent by the treasury for all these objects in the last twenty years. By making Venice the head town of one-half of the kingdom, and the seat of a government, and of numerous offices and boards of administration, considerable advantage has accrued to the Venetian republic, and a considerable amount of the two millions of livres annually are expended in it. The archives of the Venetian republic, the richest collection perhaps of state documents existing, have been placed and arranged in the closet of the Doge, and kept as a public deposit, and the Ducal palace, St. Mark, with its splendid marble staircases and apartments adorned with paintings by Titian, Paul Veronese, Tintoretto, and other great masters, had been turned under the French administration into public offices and courts, to the great injury of its ornaments, paintings and sculptures. The Austrian administration has cleared and restored that monument of ancient Venetian greatness, and leaving it unencumbered for the admiration of the public, has purchased the palace Corner and other buildings at the cost of nearly half a million of livres, for the accommodation of the offices and officers of the administration. Another half million has been devoted to the establishment of the Patriarchal Seminary, and an equal sum for the Academy of the Fine Arts. The whole has been spent with great propriety, by means of which regulation articles of foreign importation are consumed within the town without paying duty. All these cares and benefits have considerably alleviated the general state of the republic, and have been observable in the streets within a few years after the peace: travellers who did not search into the remote causes of it, attributed all to the fault of the Austrian government. The accounts of those tourists who visited Italy in the first years after the peace, when everything was still unhinged in consequence of the great political change, are now quite out of date. The commerce of Venice has revived; the arrivals in the port of Venice, which were 1295 in 1832, amounted in 1837 to above 3000 vessels, of the aggregate burthen of 211,000 tons. Venice ranks now sixth in commerce among Italy, next to Genoa. The maritime commerce of Austria has increased wonderfully since the peace. Twenty years ago it had not above 300 merchant vessels; it has now above 3000, about one half of which belong to Venice. (Bollettino Statistico di Milano for the year 1833, 532-55; in Accade delle Scienze, Istoria naturale degli altri Stati d'Italia, Milano, 1834.)

In the department of popular education the Austrian government has extended to the Lombardo-Venetian kingdom the central and uniform system which had already established in its German States, and which is one of the most complete in all Europe. The elementary schools were first opened in Lombardy in 1822, and ten years after there was hardly a commune without its school, which could continue more extended and populous commune had two. The number of communes in the Lombard provinces is 2234, and the elementary schools for boys are 2348, and those for girls 1281. Of the aggregate number of the schools there are 71 upper schools consisting of four classes; the rest consist of two or three classes. The course of instruction is:—First class, spelling, spelling-book, writing; second class, reading, writing, the catechism, the four rules of arithmetic, and fractions. The course in the first and second classes lasts three years. Third class, calligraphy, Italian grammar, specimens of epistolary and religious instruction, the first steps in the study of the gospels for Sundays and other holy days; the catechism, the four rules of arithmetic, and fractions and rule of three. Fourth class, geometry, the principles of architecture, mechanics, geography, drawing, natural history. A fifth class is established in the chief towns, but not in all, in which are taught the principles of commerce, book-keeping, mathematics, chemistry, the history of the arts, and the German, French, and English languages. The course in the upper schools lasts from three to four years.

The female elementary schools are divided into three classes:—First class, spelling and writing, mental arithmetic, needlework, written arithmetic, and religious instruction, consisting of the little catechism. Second class, religious instruction, the elements of grammar, the fourth rule of arithmetic, writing and parsing, marking and embelishments. Third class, sacred history, explanation of the gospels, calligraphy, Italian grammar, epistolary composition, the knowledge of weights and measures, and of currency.

In the School of Venice, which has an ordinary teacher for every 40 pupils. Corporal punishment is strictly forbidden. The tuition is gratuitous, the schools being supported from the communal fund. The schoolmasters have from 250 to 400 livres of fixed annual salary. A register is kept in each school, and the amount of the salaries is paid to all the children from 6 to 12 years of age, who are all expected to attend their regular course at the schools, unless they have a dispensation from the visiting inspector, as otherwise there are sufficient places in the schools.

In 1833 there were in the commune of Bergamo 906 boys out of every 1000 of the prescribed age who attended the elementary schools. In the province of Como there were 778 out of every 1000; in that of Brescia 747; in that of Padua 765; in that of Venice 733; in that of Pavia 647; in Lodi 646; in that of Cremona 632; in that of Mantua 513. The proportion of girls was as follows:—Bergamo 309 out of every 1000; Brescia 619; Sondrio 427; Pavia 493; Lodi 463; Mantua 330; Milan 550. In the seven communes, Co, Como, and 29 female schools frequented by 2319 girls. There were 405 commune schools still deficient in schools. The system however was extending, and has been increased since. (Quadri, Prospetto Statistico di Veneto.)

The text-books used in these schools are: spelling-book for the lowest class, spelling-book and reading-book, little catechism; an historical compendium of the Old Testament; historical compendium of the New Testament; the duties of subjects; elements of physics, elements of geometry; introduction to geography, in two parts; introduction to Italian grammar; guide to composition; religious instruction for the two elementary classes, reading and writing, the catechism, the four rules of arithmetic in four parts, for each of the three classes. These books are sold at a few centimes each, and about 129,000 copies of them are distributed annually to the pupils. (Sacchi, Memoria Statistica sull' attuale Stato delle Scuole Elementari, e delle Scuole Normali, dell' istruzione e delle ispezioni degli altri Stati d'Italia, Milano, 1834; Bollettino Statistico di Milano, anno 1833, primo semestre, pp. 81 and 82.)

In the upper elementary schools of the chief towns of the province are four courses of methodical teaching for those who are intended for schoolmasters. About 500 pupils follow these courses annually.

There are also in the towns and villages of Lombardy, school festivals, or Sunday and holiday schools, above 200 of which are opened every year for the children of those below that age, who cannot be accounted for. The inhabitants attend the daily elementary schools. In some of
these lessons are given in drawing applied to the arts. In Milan the Academy of the Fine Arts gives evening courses during the winter for those operatives who wish to learn ornamental architectural, and plan drawing, mechanical drawing, engineering, &c. There are also for the wealthier classes about 50 collegio convitti, or public boarding-schools, and 89 private ones, besides 600 private daily-schools. Infant- nates, Thirteen, schools, and kindergartens, are found in the towns of Lombardy. (On the Institution of Infant Schools and Holiday Schools in Lombardy, ‘in No. xix. of the Quarterly Journal of Education, July, 1833.)

From the upper elementary schools boys who intend to pursue a scientific or literary life, as well as those who wish to enter a trade or commerce, are sent to one in almost every town, and about 66 in the whole kingdom, with about 300 professors, and attended by between 7000 and 8000 students. The gymnastic course lasts six years, four of which are employed in the study of Latin and Greek grammar and prose, the geography, history of the Austrian empire, and Roman antiquities. The other two years are engrossed by rhetoric and poetry, study of the classics, algebra, general geography, and history, ancient and modern, and religious instruction. (Sacchi, Quadro Storico della formazione scolastica, 3 March, 1835; and also an article on ‘Italian Education,’ in No. vi. of the Quarterly Journal of Education, April, 1832.) Besides the gymnastic course there is one which will not supersede, but which is a complement of it, namely, ‘l’educazione maschile,’ approved of by the government, which exercises an inspection over them. There are two general direzioni, or boards, at Milan and Venice, for the superintendence of all the establishments for secondary or grammar school education. Of the 129 secondary establishments of young ladies there are 34 collegio femminili, mostly under the direction of the nuns of Santa Teresa, of Sales, of Santa Chiara, and other orders, which devote themselves to the education of youth, and which are the only convents for girls in the whole kingdom. All other monastic institutions were suppressed long since under the French, and their property was sold.

The Lombardo-Venetian kingdom is not only better supplied with elementary instruction than any other Italian kingdom, but secondary and popular education has been established. With regard to ‘secondary’ or gymnasia education this kingdom is also better provided than any other Italian state, the continental dominions of the king of Sardinia alone excepted. The system of the university of Padua is the best in Italy, and the police of Padua, and one in each of the following towns: Bergamo, Brescia, Mantua, Cremona, Como, Lodi, Venice, Verona, Vicenza, and Padua, is devoted to philosophic studies, and the course lasts two years.

Lastly, the two universities of the kingdom, Padua and Pavia, supply instruction in all professional branches of learning. A detailed account of these universities is given in an article on the ‘Statistics of Education in Italy’ in Nos. v. and xvi. of the Quarterly Journal of Education, Oct. 1834.

The object of the Austrian government in this extensive system of education is clear and definite; it proposes to form a population of docile but not ignorant or indolent subjects, and to create in general a public spirit for their respective stations in life, without precluding any one from using his honest exertions to make the best of that station; and also, if talents and opportunities should favour him, to rise to a higher one, without injury to others. The object of the exclusive caste in Lombardy; all are equal before the law, and any one may attain the highest offices of the state. ‘The Austrian government,’ says an intelligent French traveller, already quoted, ‘merits the respect of the Austrians, and the successful schoolmasters are its functionaries. The effects of this general education are already quite perceivable in Lombardy, and we may expect soon to see the fulfillment of a very fine sentiment of the emperor Francis. Being urged by the other at Venice, and in the whole kingdom by the Austrian criminal statute for this kingdom, as the Austrian statute was considered too mild for the temper of the Italians, he refused, saying that the spread of education and civilization would render his code as fit for Lombardy as it was for the hereditary states. ‘When all the people shall be able to read,’ said he, ‘they will stab no longer.’ (Valéry, Voyages Historiques des Italiens entre les, ii, p. 123.)

The Austrian civil and criminal codes are in force in the Lombardo-Venetian kingdom. Of the merits of the Austrian civil code much has been written, and several modern jurists, Thibaut, Delatouche, and others, have compared it in various respects superior to the French or Napoleon code. The penal code is generally milder than the French; but the trial, or débats, as the French call them, are not public: the depositions of the witnesses are taken in writing, and the communications, when accused, with the accused, confronted with the witnesses against him. A legal proof is required, besides the full moral conviction of the judge, in order to condemn a culprit. This legal proof is made out not solely, as it has been mistated, from the confession of the accused, but even from the depositions of the witnesses, and from circumstantial evidence. Two assessors attend the judge throughout the whole proceedings, and affirm upon oath their legality and impartiality. Every species of torture has been abolished since the reign of Joseph II.

The Austrian penal code has also abolished the penalty of confiscation, which the code Napoleon retained in certain cases—among others, against emigrants. By the Austrian law, the property of a state prisoner or political emigrant becomes a part of the state itself, and is placed in the hands of trustees, who administer it for the benefit of his family, creditors, and heirs; and it is restored to him on his return, or to his next of kin after his death, if he dies an emigrant. For other particulars we refer readers to the numerous communications, which have gone about the world, in books of travels or political pamphlets, few of the authors of which have taken the trouble of ascertaining the truth. There is however one work, with a half-official character, which has undertaken to narrate the outrages committed by the Austrian administration in Lombardy, by appealing to texts, dates, and notorious facts. (Semplici Verità in risposta alle Accuse di Enrico Miesky, Paris, 1834.)

Religious toleration is guaranteed by the Austrian laws. The Protestants, under the protection of Mr. Froelich, have a church at Venice, and another at Bergamo. The Greek or Eastern communion has a church at Venice; and the Jews have synagogues at Venice, Mantua, Padua, and other towns.

The Italian regiments are—a regiment of infantry, of three battalions each; one battalion of chasseurs, or light infantry; and one regiment of cavalry. These are numbered among the other regiments of the Austrian army, and, like them, are called to do duty in any part of the monarchy. There are besides two garrisons battalions at Mantua and Cremona. There is also a corps of gendarmerie for the police service. There is a military college and a school of artillery at Milan. The navy consists of eighty-four vessels of war, including three ships of the line, and its principal station is at Venice, where there are also naval schools for marines, and a battalion of naval artillery. In all, the number of the military furnished by the kingdom in time of peace amounts to about 30,000 men, being one man to 142 inhabitants. [Austria, Empire of.] There are eight fortresses in the kingdom, namely, Mariga, which is the strongest of all, Peschiera, Legnago, Ospio, Pizzighetone, Rocca d'Anfo, Palmanova, and Venice. The Austrian troops garrison also, conformably to treaties, three frontier places belonging to the neighboring states, namely, to the Duchy of Parma and Ferrara and Comacchio in the Papal State. In most head towns of provinces there is a commandant. The ‘comando generale militare,’ or military head-quarters, is stationed at Verona. One of the archbishops, of Milan and Venice, is ordered to the people of every town in the kingdom, and to the clergy of each of the smaller towns, or, in the case of prelates, or inferior judge, corresponding to the judgedes de paix in France. There are 133 Pretori in the whole kingdom. The Lombardo-Venetian kingdom is generally one of the
most fertile countries of Europe; and the industry of the inhabitants and the extensive system of irrigation increase the natural fertility of the soil.

The numerous rivers which come from the Alps are perennial, and the fields of Lombardy never appear in that parched condition which those of southern Italy, and of many parts of Spain and Portugal, exhibit in summer; and the richest parts of the kingdom are those of Lombardy proper, and those of Padua, Treviso, Vicenza, Verona, and Friuli, in the Venetian territory. The poorest provinces are Valtellina and Belluno.

Lombardy provides an inexhaustible abundance of everything that is necessary for the sustenance of its population; corn, wine, rice, fruits, cheese, and excellent meat. The two principal articles of exportation are:—1, silk, which is exported annually to the amount of eighty millions of Italic lire, or 3,200,000 francs; 2, rice, of which the average annual produce is valued at about thirty millions of lire, one half of which is exported. The districts in which the rice is cultivated are the low lands of Crema, Cremona, and part of that of Milan, as well as the provinces of Padua and Rovigo. The cultivation of rice, which requires the fields to be laid permanently under water for a certain period, has been considered by the provincial authorities among the most profitable pursuits of the soil; and yet other authorities, persons who are natives of the districts, and medical men also, among others Frank and Adolf, contend that this is an error, and that the inhabitants of the rice districts do not derive any enjoyment from the cult and as great longevity as those of the hilly countries of Bergamo and Brescia. (Analisi delle Risie, Crema, 1833; and also an article, "Le Risie del territorio Cremonese giustificate," in the Bolletino Statistico di Milano, June, 1838.) The other articles of exportation are cheese, especially from Lake Iseo, which is erroneously called Parmigiano, and hemp, which is cultivated in the provinces of Padua, Venice, and Rovigo. Salt is imported from Istria, Parma, and Sicily.

The principal manufactures, besides those of silk already mentioned, are woolen goods and woollen cloths, especially in the towns of Brescia, and brass hats, especially at Bassano, which are equal to those of Tuscany: there are also establishments for spinning cotton, and other minor works. Lombardy is essentially an agricultural country, and receives most of its manufactured goods which it uses from the other parts of the Austrian monarchy. The book-selling and publishing trade, although subject to the censorship, is more flourishing at Milan than in all the rest of Italy put together. Many new works of every description are published annually throughout the kingdom. Expensive engravings, as well as lithographic prints, form a considerable branch of industry. The journals published in the Lombardo-Venetian kingdom amount to nearly forty; there are also many gazettes and provincial and weekly papers, which are published in most of the chief towns of provinces, and the rest are scientific and literary journals, either monthly or quarterly. Milan and Venice have each an academy of the fine arts, and Milan has also a "conservatorio," or college for musical pupils. The public charitable establishments, hospitals, orphan and foundling houses, houses of industry, Monti di Pietà, &c., in the whole kingdom are to the number of eighty-eight.

The taxes paid by the kingdom amount to about eighty-three millions of lire, of which nearly three millions and a half sterling, and the sources of taxation are very numerous, and for the most part the same as under the French administration, but the respective burthens of some of the taxes, such as the land-tax, the tax derived from the monopoly of salt and tobacco, the postages, &c., have been somewhat alleviated since the Austrian restoration. The latter has abolished the tax which the French government had put on those who exercised the liberal professions, such as artists, literary men, physicians, &c.

The expences of the public officers, especially of the public officers, and especially of the judges and judges, are better paid now than they were under Napoleon’s government. In the Lombard provinces alone, the stipends of the judges and prelates amount to 2,060,070 lire or francs annually, and for the judges under Napoleon they amounted to 1,640,269 lire only. The professors of the universities of Pavia and Padua have also had their salaries increased. We have already seen that the government treasury assists the communities in supporting and extending the system of popular education. The large sums spent annually by the treasury on public works, roads, canals, dykes, bridges, and charitable institutions have also been mentioned above. The conservat-, or school of music, at Milan, under the French was supported by the tax laid on the licensed gambling-rooms annexed to the theatres. The Austrian government imposed the tax and paid out of its treasury 36,000 francs for the conservatorio, and 240,000 as an encouragement to the theatres.

Making every allowance for the political aspirations and disappointed national feelings of many Italian subjects, it may be affirmed with safety that the Lombardo-Venetian kingdom is in a thriving and progressive condition, and that it is the best administered country in Italy, excepting perhaps Tuscany.
of Lombardy and other parts of Italy, and the magistrates of
some towns, were summoned to pay their homages and 'to
listen to the sovereign's decisions and 'placita.' But with
the emperor's return to Germany the great vassals retired
to their castles, and the magistrates and bishops returned
to their cities. Each town and district was in a manner inde-
pendent, and the nobles, each one, acknowledging allegiance to a
distant sovereign.

The political system of most towns of North Italy in the
ten and eleventh centuries consisted of the nobles, feu-
tatories, and subfeudatories, at the head of whom were the
restive viscounts, or bishops, and of the principal town,
who constituted their council, and were consulted by
them. The citizens elected their magistrates, called scabini,
subject to the approval of the bishop. The emperors ap-
pointed to the sees, the old mode of election by the clergy
and people was replaced by a nomination. This was done by the
bishops having become feudatories of the empire. The
emperor also appointed from time to time their missi, or
commissioners, who were often Italian nobles or prelates,
and were the representatives of the imperial authority. As
forals were obliged to lose their offices. In the year 1088
there is no evidence of them. A veil covers the first
period of the history of the municipal emancipation of
the towns of Lombardy, for no historian of the tenth or
eleventh century has traced its progress; it grew silently under
the pressure of the power, and slowly and quietly appropriating to themselves the
premises of the sovereign, and not wishing to attract atten-
tion to their encroachments.

Towards the middle of the eleventh century we find dis-
certed efforts made in the city of Milan and other cities between
the various classes of the population. The barons, or
inferior nobles, of whom there were several gradations, owing
to the extensive system of subfeudation, or sub-
tenure, rose in arms against the great nobles, at the head
of whom was the archbishop Heribert. The archbishop de-
feated them and drove them out of Milan, but being joined by
the malecontents from the neighbouring towns, they ap-
ppealed to the emperor Conrad, who came to Italy in 1056,
and was received through the city. Verri, at the head of
a raised platform, gave their directions during the battle.
By degrees every city adopted the carosello, which became
a kind of ballad, and the emblem of popular in-
dependence. Thus it was that the episcopal government
of Milan was overthrown, and the city obtained its citi-

cipal liberty. In 1041 the plebeians or burghers rose against
the whole class of nobles, owing to some insult offered by
one of them to a common citizen. Lanzo, himself a noble,
ke1 the people; a battle was fought in the streets, and the
nobles, being joined by other nobles, blocked Milan, and reduced the citizens to
famine, when after three years Lanzo managed to bring about a truce, and the
people were allowed to leave the city. But the
the citizens could not well do without them, for they formed the
only cavalry; and their acquaintance with the world and
their connexions with other states made them useful in the
struggle.

In 1058 he began the long struggle at Milan and in the rest
of Lombardy on account of the married clergy. The church
of Milan had its peculiar liturgy and system of discipline,
called Ambrosian from its great bishop St. Ambrose, and
was almost wholly independent of Rome in the religious
and ordination powers in the Eastern church, and could continue to live with their
wives, though an unmarried priest could not marry after his or-
dination. If a priest became a widower and married again,
he divorced his wife. The church of Milan, already powerful in the
passages in the works of St. Ambrose seemed to countenance
the system, which existed for ages in other parts of the
Western church, notwithstanding several councils had at-
tempted to enforce celibacy among the clergy. At last the
death of Papal A.D. 1021, in which pope Benedict VIII,
was presided, attended by the archbishop Heribert, decreed that
married priests should separate from their wives and observe
in future perpetual celibacy. But the church did not
strictly enforce this decree in his diocese, and things con-
tinued as before. But after his death (Giuliani, Storia di
Milano, vol. iii.), when several fanatics, among whom was a
deacon, excited the people against the married clergy, and against the archbishop Guido, who favoured them; and
great disorders followed. Hildebrand, afterwards Gregory
in 1059, added insult to the decree of celibacy, and he sent for the
purpose Erlembaldo as his legate to Milan, giving him a
pretexted station, and at the same time forbidding any one to bear the mass of a married priest.
This was in the year 1063, and it revived the tumults in
Milan. Erlembaldo, supported by a troop of factious per-
sons, insulted the clergy and even drove them from the altar.

In the year 1072 conditions were made for the reunion of
the city of Milan, because its clergy and people would not
submit to the papal orders. The archbishop however stood
fast on the rights of his see, and the people, taking his part,
drove away the zealots and the agents of Rome. Weary of
so great a struggle, they submitted to the pope. Erlembald,
udas, a Milanese cardinal, was elected in his stead and con-
secrated by the suffragans. Pope Alexander excommuni-
cated him, and appointed a certain Attus in his place. Civil
war now raged at Milan for several years, until Erlembaldo,
the great leader of the people, was defeated and killed in
the year 1076, to the great joy of the citizens. Gregory VII,
for he had now become pope, seeing that force could not
subdue Milan, began to weaken its metropolitan by detach-
ing the suffragans from his jurisdiction, annexing Como to the
patriciate of Aquileia, Aosta, and finally to the see of
Tarantasia, and Coira to that of Mainz. Genoa and
Bobbio were detached from the jurisdiction of Milan at
a later period. The great influence which Gregory ac-
cquired through the capture of Milan, as he had through
the triumph over the emperor Henry IV., facilitated the sub-
mission of the see of Milan, whose archbishops became
gradually dependent on Rome, received the pallium from the
pope, and swore obedience to him. As a consequence
of this the clergy became subjected to the Roman juris-
diction, and the regulation was enforced of not admitting
any persons to orders except married men. Nothing is
said by the historians about those who were already married,
but it appears that they were allowed to live and die in
the jurisdiction of the see of Milan. Pope Alexander
investigated this curious and obscure period of ecclesiastical
history, which saw the extinction of the independence of
the Milanese or Ambrosian church.

In the great contest of the investitures, Milan, Lodi, Cre-
nobles, and other places were at last by awed by the
nobility, who were mostly favourable to the emperor, but at last
in the decline of the imperial authority they joined the Coun-
tess Matilda and her second husband Guisephe, with whom
they formed an alliance. It was during this long struggle that
the cities really established their independence, and only
longer the imperial missi, or vicars. The citizens
then began to elect a certain number of magistrates, whom
they styled consuls, who administered justice and com-
manded the militia; they were chosen from three orders,
the clergy, capitani, and the free men. The first two were
made up of the burghers. How the consuls were elected, how many there
were, and how long they remained in office, is not ac-
serted; for the chroniclers of those times do not enter into
particulars of the matter, and as many consuls were elected at the
same time mentioned. The rural nobles inscribed themselves among the citizens, and came to reside, at least
for part of the year, in the city, in order that they might
participate in the political rights. A council of cunes, 
true consulati, was instituted. The council first ruled
in the city of Milan, formed a town-council, which deliberated in secret.

On important occasions the parliament, or general comitias
of the people, was convened by the sound of the great bell,
to give their opinion by acclamation on some matter which could attract the council's attention. The decisions
were promulgated in the name of the 'popolo,' or 'com-

cune,' which meant the whole community. There was no
distinction between the judicial and executive powers, nor
any real legislature; and for this reason, that the right of making laws was considered as a prerogative of the king or emperor, assisted by the magistrates, or great feudalists, and by the judges, at the great diets convened for the purpose in the plain of Roncaglia. Laws and written constitutions were few in those times, and the consuls enforced the laws and executed the sentences. The investitures of feudal tenures, of sending royal and imperial judges distinct from the magistrates of the people, of demanding the 'fodereum,' or tribute for the maintenance of the emperor and his suite whenever he came to Italy, and lastly of sending from time to time, 'fodereum,' or vicars, who represented the person of the sovereign.

The Lombard cities, having now secured their municipal liberties, began to fight among themselves. Milan and Pavia were rivals of old, and Cremona, which was the third great city of Lombardy, was also jealous of Milan. But before they turned their arms against one another, they began by attacking their weaker neighbours. Cremona attacked Crema, Pavia attacked Tortona, and Milan attacked Lodi and Novara. At last Lombardy became divided into two systems: that of Milan formed Brescia, Crema, and Tortona; and the other consisted of Pavia and Cremona, Lodi and Como. It was not ambition alone that led them to fight; it was an exuberation of animal courage, the pride of physical strength, which, when undisciplined and unchallenged, is prone to find a certain day and place, to decide which of the two people was the most valiant. 'We cannot,' says Mr. Hallam, in his 'Epochs of the Middle Ages,' 'extend our sympathy for the free institutions of the Italian cities to the national and human. Their liberty was secured by a lawless spirit, from which a democracy is seldom exempt, of tyrannizing over weaker neighbours. They played over again the tragedy of ancient Greece, with all its circumstances of inveterate hatred, unjustifiable suspicions, and consummated enmities, though with less consummate actors upon the scene.'

The people of Milan had been engaged in frequent disputes with those of Lodi, as early as the time of the archbishop Hirtbert, who had forced on Lodi by his arms a bishop of his own choice. From this time a mutual rancour continued to exist between the two cities, which lasted for nearly a century. In 1167 the Milanese made war upon the people of Lodi; destroyed their harvests for four consecutive years, and at last, in June, 1111, took the town, killed many of the inhabitants, carried off the survivors, and drove them to the neighbouring villages. The spot is still known by the name of Lodi-Vecchio. The people of Pavia on their side took Tortona and burnt it. In 1118 the Milanese began a furious war against Como, which lasted ten years, and was concluded by a peace, of which the most remarkable part was a kind of dictator; he was supreme judge, assisted however by lawyers or assessors, and had the right of inflicting capital punishment. He was always chosen from the territory of another town, and from among the nobility, and was independent. In 1176, Lodi, having chosen a stranger, impartiality might be better secured. Milan chose, in 1186, for its consuls, Uberto Visconti and Pietro Visconti, who, in the last of them, was their highest judge, assisted by lay attorneys, and had the right of inflicting capital punishment. He was always chosen from the territory of another town, and from among the nobility, and was independent. In 1176, Lodi, having chosen a stranger, impartiality might be better secured.

Frederic spoke to the Milanese the language of reason and justice; he ordered them to let their neighbours of Lodi live in peace, and allow them to build their town. The Milanese with scorn refused to obey, and the war began between the emperor, joined by the militia of Pavia and Cremona on one side, and the Milanese and their allies on the other. The war lasted several years, and horrid cruelties were committed. The Milanese, being driven to surrender, in March, 1162; the inhabitants were ordered to leave the town with all they could carry, after which Milan was sentenced to be treated as it had treated Lodi—to be razed to the ground; and the people of Cremona, Pavia, Lodi, and Como readily executed the sentence. The Milanese were scattered in the villages around. Thus far the treatment of Milan was only a stern retribution; but a change took place in the character of the respective parties, the conquerors abused their triumph, and the former oppressors became the oppressed without having given any fresh provocation. Frederic having returned to Germany, his officers and podestas treated the Milanese and other Lombards as a sort of conquered nations, and levied in every way. Even the towns of the Imperial party, such as Cremona, were not treated much better; they were allowed to retain their consuls, but were oppressed with taxes. The emperor was applied for redress, but in vain. At last a general spirit pervaded the cities of Lombardy, and extended to those of the Marches of Verona and Treviso beyond the Adige. In April, 1167, a secret conference was held by deputies of the various cities, in the convent of Pontida, in the territory of Bergamo; and it was resolved to form a league, for the common defence of the Milanese in rebuilding their city. Pope Alexander III. declared himself protector of the Lombard league, which consisted of fifteen cities: Cremona, Bergamo, Brescia, Ferrara, Bologna, Modena, Milan, Pavia, Piacenza, Verona, Vicenza, Padua, Venice, Treviso, and Lodi, which was obliged to follow the rest. The league was afterwards joined by Ravenna, Rimini, Reggio, Bobbio, Tortona, Vercelli, Mantua, and Novara. Pavia only remained attached to the emperor's party, and as the marquis of Modena died in 1167, his possessions fell to the pope. In 1170, Lodi and Bergamo founded a new town on the borders of Montferret, which they called Alessandria, from the name of their protector. The towns re-established their consular governments, and a kind of federal diet was assembled at Modena, composed of representatives of cities and towns, and these constituted a league. But this appearance of a federal union lasted only as long as the contest with Frederic, after which it dissolved itself. The league however carried its purpose bravely for the time. After several campaigns, the Lombard mercenaries were overthrown, and in 1170, Frederic took Lodigian, and in 1176, took the emperor's camp, and Frederic was obliged to escape alone to Pavia. This led to a truce, and afterwards to the peace of Constance, in 1183. By this celebrated treaty, which served for ages after as an authority for regulating the relations which arose between the Emperor and the North Italian states, the cities were confirmed in their independent administration; they had the right of declaring war, of coming, in short all the attributes of sovereignty, under an acknowledgment however of the emperor as king of Italy. In 1185, who appointed an imperial vicar to represent him in Lombardy, as well as judges of appeal in civil matters; and they were bound to furnish him with foderum on his passage, as well as with a military contingent against other states who were not members of the league. The glorious struggle of the Lombards for their independence being terminated, they soon fell again to quarrelling among themselves. Several of the towns, in order to check their internal factions, adopted the institution of the podesta, or chief magistrate of the city, who was chosen by the commune. The podesta was a sort of dictator; he was supreme judge, assisted however by lawyers or assessors, and had the right of inflicting capital punishment. He was always chosen from the territory of another town, and from among the nobility, and was independent. In 1176, Lodi, having chosen a stranger, impartiality might be better secured. Milan chose, in 1186, for its podesta, Uberto Visconti, and Pietro Visconti, who, in the last of them, was their highest judge, assisted by lay attorneys, and had the right of inflicting capital punishment. He was always chosen from the territory of another town, and from among the nobility, and was independent. In 1176, Lodi, having chosen a stranger, impartiality might be better secured.
higher nobles or capitani, who, with the archbishop at their head, formed in their own council, called Credenze del Gigliarddi. Each of these councils had its consuls, who made edicts for those under their respective jurisdictions. In matters concerning the whole state, deputies from each class assembled in a general council, the numbers of which appeared subject to the local population. We find that in 1296, when electing these deputies, their condition and qualifications, and the duration of their office, were not ascertained. The podestà summoned the general council upon important occasions. The four credenze generally resolved themselves into two parties, the nobles and the popolani (or plebeians). The nobles of that epoch were strong by their connexions, their subfprendities and dependants, forming altogether a numerous and compact body, the most warlike part of the population. They bore the brunt of the wars against Federico Barbarossa. Their superior address, their acquaintance with foreign courts and councils, gave them great advantage; the archbishop and his dependants were on their side; and so in most cases was the podestà, as he also was usually supported by their friends from Cremona and other places. Reggio, Bologna, and other cities were likewise distracted. Besides these internal feuds, there was the old rivalry among the towns, which revived after their united contest with the podestà, and the famous list of petty wars, which is given by Bossi and other historians, without any intelligible account of the origin of most of them, excites a feeling of indignation mixed with contempt; people were killed, property was destroyed, and families were made unhappy by these absurd feuds.

One half of the index of the fourteenth volume of Bossi's History of Italy, which comprises the events of the thirteenth century, consists of such battles and contests in Milan and private wars of various Italian cities; other wars of the Italian cities; fresh contests between the Italian cities; peace made between several cities; wars and tumults in the cities; wars of the Italian cities (this head is repeated at least twenty times); wars of Lombardy; tumults of Brescia and Milan; tumults at Piacenza; wars in Lombardy and other parts of Italy; wars of Aymagna, Genoa, Tuscany, &c.; and all this, independent of the great struggle which was then carried on between the popes and Federico II. and his son Manfred. (Guelfs and Ghibellines.)

This was the condition of the free Italian cities in the thirteenth century, and the manner in which their citizens enjoyed that independence for which their fathers had been killed or for which they had spent and devoted the blood of their children. The Italian republics of the middle ages attempted to excuse their pugnacious propensity by observing that there were no regular soldiers like ours, who have now to bear all the privations and dangers of war; military service was then a temporary duty, the pleasure and pastime of every citizen, to which he consecrated a few days every year; he fought in sight of his own walls; if he was wounded he was brought back to his own house; and if he died his loss was lamented by all the townsmen (Siamodii, Romani, Neapolitani, &c.), and to such an extent that in all the quarters of the wealthier citizens, first with the nobles, and afterwards with the lower classes, civil liberty was frequently violated, and personal rights and security were often overlooked; but while in the midst of these civil dissensions the civilization was trampled upon, democratic liberty remained. Democratic liberty consists, not in security, but in power; it does not ensure to nations either tranquility or order, economy or prudence, but it carries within itself its own reward. It affords the sweetest joyment to the citizen who has once tasted of it, in the gratification of influencing the fate of his country, and of sharing in its sovereignty, not acknowledging any authorities he has not himself created. (République Ital., ch. xxxv.) This is a portrait of democracy by one of its ablest and most conscientious apostolers.

It has been said that notwithstanding all these feuds the Italian free cities prospered; the real truth is that some of
Martino della Scala; Mantua, the count San Bonifazio; Ferrara, the marquis of Este, &c. The desire of tranquillity and repose from factions induced the citizens to submit to a chief who could make himself feared, and they chiefly required of him to punish quickly and severely those who troubled their nobles and equestrians. They preferred summary and often brutal justice to anarchy.

After the death of Archbishop Perego the chapter was divided, as to the choice of his successor, between a nephew of Martino della Torre and another. Pope Alexander IV., who was offended with Martino for having allied himself with Pelavicino, a Guibeline, and suspected of heresy, named to the see the canon Otho Visconti, of a noble and powerful family, who had been exiled with the other nobles some years before. But as the Delta Torre opposed his candidate, and the pope, enlisting the aid of Cardinal Bessarion, the bishop-elect continued for several years to remain on the estates of his family near the lake of Comove, where he collected many of the disaffected, with whom he carried on a sort of predatory war against Milan. Martino della Torre having put himself de facto in possession of the see, as lord of Milan, Lodri, and Novara, to which he added Como, Verelli, and Bergamo, which towns elected him as their lord. Thus the foundation was laid of that consolidation of Lombardy into one state which in after-times was known as the Duchy of Milan. The Duke Martinus Corvinus, the successor, died in 1265, and was succeeded by his nephew Nepoleone della Torre. The Torrioni, or Delta Torre family, did not alter the form of the institutions of Milan; the podestà, the censorship, and the consuls remained as before, with an additional podestà, apparently at least, of that of the lord. This policy was the same as that pursued by the first Medici at Florence.

As long as Pope Gregory X. lived, the archbishop Visconti was cautious in his movements, as that wise pontiff did not wish to see the Guelfs or Guibelines; but after his death in 1276 Visconti grew bolder; he took possession of Como and Lecco, and at last marched against Milan. Nepoleone della Torre came out to meet him, but was surprised and taken prisoner, and the Venetians were placed as the example set by his uncle Martino. The people of Milan, hearing the defeat, rose against the adherents of the Torrioni, perjured them with stones, and drove them out of the city. The Visconti assumed the title of lord, and succeeded him as lord of Milan, Lodri, and Novara, to which he added Como, Verelli, and Bergamo, which towns elected him as their lord. This was the beginning of the consolidation of Lombardy into one state.

The Visconti, returning at the head of this long-prospered nobility, which was now ruined in fortune, and had become mercenary, found the people corrupted by servitude. There was no longer any independence of spirit in any of their inhabitants, who considered the state, although republican councils and popular institutions continued. The council of the elders continued to discuss the laws which the lord proposed, to levy the taxes, superintend the expenditure, and to exercise the other functions of a state. But gradually, and especially from the time of Bernabò Visconti, the lord took upon himself to issue his own laws or statutes, to impose taxes, to farm the revenue, make war, and, in short, exercise all the acts of soverignity. In the fourteenth century the Visconti ranked among the most illustrious Italian families, and their dominions not only over Lombardy Proper, north of the Po, but over part of Montferrat, including Asti, Alessandria, Bobbio, Tortona, and also to Parma, Piacenza, Bologna, and other towns south of the Po. Gian Galeazzo Visconti, the son of Bernabo, in 1395, from the Emperor Wenceslas, the title of 'Duke of Milan and Count of Pavia.' The charter of investiture included twenty-six towns and their territories, extending from the hills of Montferrat to the waters of the Venetian Lagoon. Besides these he obtained also possession by force or fraud of Genoa, Lucca, Pisa, Siena, Perugia, Bologna, and other parts of Romagna. Florence alone stood in his way, and he was preparing to attack it with all his forces, when he died of the plague, in September, 1422. In the following century the duchy of Milan became extended and united. The Visconti were succeeded by the house of Visconti, which united the whole of Lombardy, including the provinces of Brescia, Bergamo, and Crema, between the Mincio and the Adda, which latter river became the boundary of the two states. The Swiss took possession of Bellinzona, and other valleys north of the Lago Maggiore. The duchy of Milan likewise lost its south of the Po. On the side of Piedmont its boundary was the Sesia, including within its limits the extensive province of Novara, which now forms part of the Sardinian territories. The duchy of Milan therefore, as possessed by the later Visconti, was greatly reduced; but it was gained into possession of Charles V., extended about 70 miles north to south from the Alps to the Po, and 60 miles east to west. Its principal cities were Milan, Pavia, and Cremona. Mantua formed a separate duchy until the war of the Spanish succession, when it was taken possession of by the Austrians. Milan, then annexed to the duchy of Austria. These two duchies constituted Lombardy Proper. The duchy of Milan, during a century and a half that it remained under the Spanish branch of the house of Austria, declined greatly from the greatness of the house of Visconti. The Spanish viceroys and governors was fatal to Milan, Naples, and Sicily. The wretched system of that administration and the misery of the population subject to it have been admirably portrayed by Manzoni, in his 'Promessi Spazai,' and by Stendhal, in his 'Racconti e studi.' Lombardia del Secolo xvi,' which is a commentary on the work of Manzoni.

With its transfer to the German branch of the house of Austria Lombardy began to recover its prosperity. But it was not until the latter part of the eighteenth century that every sort proceeded with rapid strides, and the duchy of Milan assumed a new aspect. The population also increased rapidly. In 1749 it was 900,000, and in 1770 it was 1,130,000. Joseph II. pursued the policy of improvement begun by his father. In 1782 he took possession of the territory, and the time, remarked upon the dense population of this limited tract of country, and its fertility, which, besides abundantly supplying its inhabitants with all the necessaries of life, left them an abundance of surplus for exportation, the amount of 1,500,000 sequins, or sixteen million of francs. The consequence of all this was, that the people of Lombardy grew attached to the Austrian sway, and when the French, in 1796, invaded the country, they found the inhabitants entirely extemate to their new government. The partisans of the French gathered from other districts, from the Venetian provinces of Bergamo and Brescia, and also from Modena, Bologna, and other countries south of the Po, which were not so well administered, and a state of liberty and insurrection in Lombardy is noticed under the Lombardo-Veneto Kingdom.

LOMBARDY. [GHERS.]

Lombhook, or Lombok, an island of the Indian Archipelago, lying between 6° and 9° S. lat. and 117° and 117° E. long. It has the island of Bali on the west, and that of Sumbawa on the east. The form of Lombhook is nearly square; its mean length and breadth being respectively 53 and 45 miles. The surface of the island is mountainous. The loveliest of its mountains, the peak of Sumbawa, is 11,250 feet above the level of the sea. The island is populous and well cultivated, and the whole surface is covered with vegetation. It is abundantly supplied with springs of water, which feed several small streams; some of which fall into the sea in cascades, while others are used for irrigation. Small lakes, which enter the harbour may procure from the native abundant supplies of oxen, swine, goats, poultry, and vegetables. The inhabitants, who are generally intelligent, and have attained a considerable degree of civilization, carry on a thriving trade with Java and Sumatra. They practise rice culture, which they cultivate by means of large tanks and reservoirs of water. The ruler or rajah of Lombhook is tributary to the sultan of Bali, and the island has never been brought under the sovereignty of any European power.

LONMOND, Loch, is a lake situated between 56° and 56° 20' N. lat., and 4° 30' and 4° 42' W. long., in a direction from north by west to south by east. On the east side it is bounded by the counties of Stirling...
and Perth, and on the west by that of Dumbarton. Its length is 24 miles. The most southern portion, which is about one-third of its length, is from four to seven miles across, and contains several wood-clothed islands. The whole number of islands in the lake is about thirty. North of Luss in Dumbartonshire it grows gradually narrower, being from two to one mile and even less in width. At the mouth of the Clyde, the shore line is marked by a surface of 45 square miles. Its general depth is about 20 fathoms, but in some places it is as much as 89 and even 123 fathoms. The surface is 22 feet above the mean level of the sea at Dumbarton. Its waters are supplied by a great number of rivers, which flow from the adjacent mountains; the Enrick, the only considerable stream which falls into it, enters the lake on the east side, at that part where it is widest. The circumference of so many streams falling into it will account for the fact of the surface variety of ideas; the lake has a peculiarity which makes its scenery by its rocky but beautiful and finely wooded islands. Where the lake begins to narrow, Ben Lomond on the eastern bank raises its head to near 3000 feet above the sea. Ben Lomond is a steep, rocky peak, with fine grass covering the lower part, rising fine grass to the very summit. Its beauty is increased by contrast with Tullich Hill and the mountains of Arrochar, which rise on the other side of the lake with a steep declivity, and bare and rocky summits, to nearly the same elevation as Ben Lomond. The northern extremity of the lake is completely enclosed by high, steep, rocky, and dark mountain-masses.

LOMONOSOV, MICHAEL VASILEVICH, the founder of modern Russian poetry and literature, was born in 1711, near Kholmogor, in the government of Archangel. His father, who was a serf of the crown, was by occupation a fisherman, and Michael more than once accompanied him in fishing excursions in the White and Northern seas. The long winters, spent by him in study, in which he was assisted by the instruction he received from a priest, and although his stock of books was exceedingly limited, being nearly confined to a grammar, a treatise on arithmetic, and a psalter, he made such diligent use of them, that he tells us that the Greek and Latin languages acquired served only to increase his desire for further information: he accordingly determined to make his way at once to Moscow, to which capital he journeyed in a cart that was conveying thither a load of frozen fish. Having arrived, he spent several years studying, by day and evening, the Greek and Latin languages, which he learned simultaneously with the Italian and French, and which obtained for him general admiration. In the meanwhile he had married during his residence at Moscow, the consequence of which was that he so absorbed himself in pecuniary difficulties, that he was obliged to lose no time in returning to his own country. After his arrival at St. Petersburg he was made an associate of the Academy in 1741; and in 1746, professor of chemistry, besides which other appointments and honours were conferred upon him, and in 1750 he was made rector of the Academy. He composed the first edition of Lomonosov's works, published by the Academy, which has passed through several editions, extended to sixteen volumes; and the titles alone of his works would serve to show the great range and diversity of Lomonosov's studies. It would in fact be difficult to name any one who can be compared with him in the encyclopaedical multifariousness of his writings. Chronology, history, grammar, rhetoric, criticism, astronomy, physics, chemistry, meteorology, poetry—all engaged him by turns, and, as a scientific man, he was always ready to have a genius for all. Later discoveries and improvements in science, which he was the first to show his knowledge of, and to whom we should, in some what dimmed the lustre which his writings of that class at first shed upon his name; but the service he rendered to the literature of his country, both by precept and example, makes his name one of the noblest in Russia. His grammar entitles him to be considered the legislator of the language, and as the first who gave regularity and stability to its elements: in poetry he has scarcely been equalled by any one, with the single exception of Derzhavin, in energy of style and subtile pathos. His successor, who has succeeded him, found no model to guide him in the language in which he wrote. Povelov's biographical novel, entitled 'M. V. Lomonosov, 2 vols., 8vo,' 1326, contains, with some admixture of fiction, almost all that can now be collected regarding the life of this extraordinary man, together with notices of his chief literary contemporaries.

LONCHERES, Illiger's name for a genus of Rodentia, including Echimys of Geoffroy, a species of Hystrix of Schreber and others, and a species of Myomys of Zimmermann and others. [MURIDÆ; RODENTIA.]

LONCHOPSIS, a genus of fossil ferns established by M. Adolphe Brongniart. The species belong principally to the coal formation, but one, L. enulata, is found in the Wealden deposits and in the green-sand. The leaves are multipinnatifid, the pinnae adnate to the rachis, marked by a midrib, and equal reticulated nerves, and uniform acroate.

LONCHUSA, a genus of Fringillidae, separated from Fringilla (Tern.), by Lietu.-Col. Sykes.

generic character.—Bilis strong, short, broad; mandibles entire, the upper one extending in an angle on the forehead, with it, forming a circle, the top part subacuminate; first quill very short and subacuminate; second, third, and fourth, nearly equal and longest. Tail graduated, lanceolate; middle tail feathers a little exceeding the others in length. Feet moderate, rather slender.

Col. Sykes observes that the peculiar spear-head form of the tail, and the ridge of the upper mandible and the forehead, forming a segment of the same circle, together with the habits of Lonchusa miera, Cheet and leucosota, afford sufficient characteristics for their separation. Col. Sykes states that the species L. miera is found among the Beverly Mountains in the province of Sanlam, and L. leucosota in the Solimones, in the province of Spinosa, and named from the monotypia quadricolor, Lath., belongs to the same group.

Locality of the species. The Dukhun or Deccan. The first two are recorded as found only in the Ghatas.

Lonchura Chest, Sykes, is described as a male cinnamon-brown; the female, of the upper parts, blackish; the white quills; and tail-feathers deep brown. Irides deep brown;

Female with the colours less intense. Length of the body 5 inches; of the tail, 2.

Habits, Reproduction, &c.—Col. Sykes states that these birds live in small families, and that he frequently found them in possession of the deserted nests of the Ploceus philippenius; their own nest, which he exhibited on a subsequent occasion, is a perfect hollow ball, made of a delicate texture of fine straw, in which the female laid six white eggs.

It was found in the fork of a branch of the Mimosa Arabica, and contained ten oblong minute white eggs, not much larger than peas, being 36ths of an inch long by 36ths in diameter. The cry of the bird is cheet, cheet, cheet, and is rendered simulaneously by all the birds in flight. (Zool. Proc., 1832 and 1834.)

London, the capital of the United Kingdom of Great Britain and Ireland, stands at the head of the navigable tidalway of the river Thames. The latitude of the centre of the dome of St. Paul's cathedral, which stands in the centre of what is strictly the City of London, is 51° 30' 47" 59" and the longitude is 51° 48° 22" W. of Greenwich. The latitude of Greenwich Observatory, according to Mr. Airy's determination, is 51° 30' 47" 59" and the longitude of the intersection of the meridians of the City, including the liberties, or the districts into which the municipal franchises and privileges extend, is divided into two portions, London within
the Walls, and London without the Walls, a distinction which exists no longer except in name. The original wall of the City is described as having its beginning at a fort which in part occupied the site of the present Tower of London, whence it was carried northward through the street now called the Minories to Aldgate; thence diverging to the north, and then southward again to Aldgate; thence to the north of Christ's Hospital; turning directly south to Ludgate, it then again took a westerly course to New Bridge Street, and accompanied the line of the Fleet River to its junction with the Thames, fort in fort until it terminated inside the line thus described comprehends London within the Walls, and includes 98 parishes. London without the Walls consists of the following 11 parishes:—St. Andrew Holborn; St. Bartholomew the Great; St. Bartholomew the Less; St. Botolph Without Aldgate; St. Botolph, Aldgate; St. Botolph Without Bishopsgate; St. Bride's; St. Dunstan in the West; St. Giles Without Cripplegate; St. Sepulchre Without Newgate; Trinity, in the Minories; besides inns of court, hospitals, and other extra-parochial districts locally connected with the abovenamed parishes. The whole of London Bridge is held to be within the city, together with a plot of ground at the south end of the old London Bridge on the Surrey shore, and called the Bridge foot.

These boundaries by no means include what is now understood by the name London. They do not even circumscribe the surface over which its magistracy exercises jurisdiction. The borough of Southwark, on the south side of the Thames, is for certain purposes, subject to the jurisdiction of the corporate officers of the City of London. A great part of the manor of Finsbury is also held by the corporation by virtue of a lease granted by the prebendary of Hatfield and Finsbury, in the cathedral church of St. Paul. This lease has been reneged from time to time, and the date of its origin is not recorded; but it is known that the corporation has been thus interested in the manor from the beginning of the fourteenth century. It is now usual to consider it as forming part of the metropolis; but from the large gaps of the term, some of which comprehend the City of London within and without the walls, the city of Westminster, the borough of Southwark, and the newly-created parliamentary boroughs of Finsbury, St. Mary-le-bone, the Tower Hamlets, and Lambeth. The area of these several divisions, with the number of houses and inhabitants which they contained at the census of 1831, are computed to be as follows:—

<table>
<thead>
<tr>
<th>Area in Acres</th>
<th>Houses</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of London</td>
<td>123,113</td>
<td>31,498</td>
</tr>
<tr>
<td>Southwark</td>
<td>390</td>
<td>22,492</td>
</tr>
<tr>
<td>Westminster</td>
<td>2,200</td>
<td>21,893</td>
</tr>
<tr>
<td>Finsbury</td>
<td>4,670</td>
<td>29,563</td>
</tr>
<tr>
<td>St. Mary-le-bone</td>
<td>5,310</td>
<td>29,298</td>
</tr>
<tr>
<td>Lambeth</td>
<td>8,988</td>
<td>29,979</td>
</tr>
<tr>
<td>Tower Hamlets</td>
<td>8,988</td>
<td>29,777</td>
</tr>
<tr>
<td></td>
<td></td>
<td>31,498</td>
</tr>
<tr>
<td></td>
<td></td>
<td>214,539</td>
</tr>
</tbody>
</table>

The proportionate increase in the population and number of houses that has been found at each decennial enumeration since 1801 has been as under:—

<table>
<thead>
<tr>
<th>Year</th>
<th>Per Cent. of the Increase</th>
<th>Inhabitants</th>
</tr>
</thead>
<tbody>
<tr>
<td>1811</td>
<td>10.98%</td>
<td>1,773</td>
</tr>
<tr>
<td>1821</td>
<td>12.19%</td>
<td>1,942</td>
</tr>
<tr>
<td>1831</td>
<td>19.42%</td>
<td>20.04%</td>
</tr>
</tbody>
</table>

The rate of increase has been by no means uniform in the different districts. Comparing 1831 with 1801, the total increase in the number of houses has been 83 per cent. in the population 70 per cent.; but as regards the city of London there has been, during the same thirty years, a positive decrease in houses of 56 per cent., and of inhabitants 46.4 per cent. The great increase has taken place in the newly-created boroughs of Southwark and Lambeth the houses being there augmented in the proportion of 94 per cent., and the inhabitants 105 per cent. The area of the City being already fully occupied by houses, there was no room for their increase, and little capacity for receiving an addition to the number of inhabitants. The increase of population in the suburbs is, in particular, in the city is fully accounted for by the widening of streets, and by the increased value of houses for commercial purposes, which has induced many persons to parcel out their dwellings as offices, and to remove with their families to the suburbs.

No enumeration has of late years been made of the streets of London; but it has been computed that, including squares, lanes, courts, and alleys, they amount to between 8000 and 10,000. The principal thoroughfares follow the course of the Thames from east to west. The longest lane enters from Essex at Whitechapel, and runs in a nearly straight line to St. Paul's cathedral, where it divides into two arms, one of which continues above 1000 feet through Fleet-street and the Strand to St. James's palace; the other arm continues more to the north, through Holborn to the western extremity of Oxford-street and Kensington Gravelpits. From a computation made in December, 1873, it appears there were then, in and around the city of London, 100 almshouses, 20 hospitals and infirmaries, 3 colleges, 12 public prisons, 15 flesh-markets, 1 market for live cattle, 1 for herbs, and 23 for corn, coal, hay, &c., 15 innns of court, 27 public squares, 19 halls for companies, 3 public schools, 31 charity schools, 207 inns and alehouses, 457 taverns, 531 coffee-houses, 5975 ale-houses, 1000 hackney-coaches, 940 hackney-chairs, and 7000 streets, lanes, courts, and alleys.

From the official returns obtained in 1832 by the commissioners appointed to consider concerning the divisions of counties and the boundaries of boroughs, it appeared that there were at that time in each of the proposed parliamentary divisions the following number of houses rated at the yearly value of 10d. and upwards, and the assessed taxes paid within those divisions were as follows:—

| City of London | 14,154 | £2,744 |
| City of Westminster | 17,691 | 303,421 |
| Borough of Southwark | 9,923 | 31,262 |
| Lambeth | 16,405 | 91,069 |
| Finsbury | 29,266 | 201,027 |
| Marylebone | 21,650 | 24,231 |
| Tower Hamlets | 23,197 | 92,121 |
|               | 126,656 | £1,227,687 |

From which it appears that the metropolis contained 25.4 per cent. of the total number of houses rated at 10d. per annum value in Great Britain, and that the inhabitants paid 29.61 per cent. of the whole amount of assessed taxes, exclusive of the land-tax.

Sail, &c.—The general substratum of London and its neighbourhood is clay. [LONDON CLAY.] Beds of clay, from 100 to 200 feet in thickness, proper for making tiles, are found in the immediate neighbourhood of the City, and all around the metropolis brick-making is or has been carried on extensively. The clay is in many parts, especially on the north side of the river, for a distance of more than a mile, covered with a thick bed of gravel.

The mean annual temperature of the air in London, as deduced by Mr. I. Howard from a series of observations carried on during twenty years, is 50° F. The mean temperature of each month, during the period here mentioned, was:—

<table>
<thead>
<tr>
<th>Month</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>36.34</td>
</tr>
<tr>
<td>February</td>
<td>39.60</td>
</tr>
<tr>
<td>March</td>
<td>42.01</td>
</tr>
<tr>
<td>April</td>
<td>47.61</td>
</tr>
<tr>
<td>May</td>
<td>53.40</td>
</tr>
<tr>
<td>June</td>
<td>59.36</td>
</tr>
</tbody>
</table>

The amount of rain which fell in each of the nine years from 1833 to 1842, in the gardeners' house at the Horticultural Society at Chiswick, and in each month of the year 1834, was as follows:—(It is not known that there is any gauge kept within the limits of the town upon which perfect reliance can be placed.)

<table>
<thead>
<tr>
<th>Month</th>
<th>Rainfall</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>2.87</td>
</tr>
<tr>
<td>February</td>
<td>0.37</td>
</tr>
<tr>
<td>March</td>
<td>0.66</td>
</tr>
<tr>
<td>April</td>
<td>0.86</td>
</tr>
<tr>
<td>May</td>
<td>1.19</td>
</tr>
<tr>
<td>June</td>
<td>1.63</td>
</tr>
<tr>
<td>July</td>
<td>1.63</td>
</tr>
<tr>
<td>August</td>
<td>3.73</td>
</tr>
<tr>
<td>September</td>
<td>2.04</td>
</tr>
<tr>
<td>October</td>
<td>0.43</td>
</tr>
</tbody>
</table>

Average 42.10

According to observations made during a series of years.
The following table shows the directions in which the wind has blown during each month of the year:

<table>
<thead>
<tr>
<th>N.</th>
<th>N.E.</th>
<th>E.</th>
<th>S.</th>
<th>S.W.</th>
<th>W.</th>
<th>W.N.</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>34</td>
<td>31</td>
<td>42</td>
<td>21</td>
<td>15</td>
<td>64</td>
</tr>
<tr>
<td>February</td>
<td>14</td>
<td>21</td>
<td>42</td>
<td>22</td>
<td>5</td>
<td>54</td>
</tr>
<tr>
<td>March</td>
<td>24</td>
<td>3</td>
<td>2</td>
<td>21</td>
<td>94</td>
<td>64</td>
</tr>
<tr>
<td>April</td>
<td>23</td>
<td>21</td>
<td>3</td>
<td>34</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>May</td>
<td>34</td>
<td>1</td>
<td>2</td>
<td>21</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>June</td>
<td>5</td>
<td>21</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>July</td>
<td>21</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>August</td>
<td>1</td>
<td>2</td>
<td>11</td>
<td>3</td>
<td>22</td>
<td>6</td>
</tr>
<tr>
<td>September</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>October</td>
<td>3</td>
<td>2</td>
<td>21</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>November</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>December</td>
<td>1</td>
<td>2</td>
<td>34</td>
<td>3</td>
<td>22</td>
<td>8</td>
</tr>
</tbody>
</table>

Architectural—Although London is known to have existed as a town for near two thousand years, with the exception of here and there a building, or a mass of old tenements, all the rest is comparatively of yesterday, there being very few portions which are more than a century old, and those in situations where they must be purposely sought out. What Roman London was is now entirely matter of conjecture, and still only in a general way. Even the ancient buildings which have been from time to time discovered, they merely prove that Roman structures of some splendour formerly existed on the sites where such remains have been dug up; but in regard to the buildings themselves they afford no information: still less do they assist us in forming any idea of the general mode of building and the aspect of the city. Imagination may speculate freely as to the grandeur of Londinium under the Roman sway, but it is impossible for it to cheat us into the idea of the city's presenting any signs of grandeur in after-times, for under both its Anglo-Saxon and Norman sovereignties it must have been as we shall presently see, in a most wretched condition, and its inhabitants subjected to what would now be considered intolerable nuisances and inconveniences. Londinium was most probably a British town, that is a large enclosure protected by a rampart and fosse, previous to the invasion of the island by Caesar, in whose time a considerable traffic was carried on between the Britons and the Gauls. But though Caesar does not mention the Thames, he makes no mention of Londinium. The first mention it receives in history is that in the Acta Suetonii, (p. 62) Suetonius, the Roman commander, abandoned Londinium and retired to the west shore of the Thames. It has been supposed that the inhabitants who did not leave it with Suetonius; a circumstance which leads us to infer that it was then chiefly occupied as a Roman station. If any conclusion can be drawn from the brief notice of Tacitus, London was then incapable of any defence, and had probably no wall that could resist the enemy; though that historian mentions the want of soldiers as the cause of its being abandoned by Suetonius. It does not appear from Tacitus whether the place was then destroyed by the Britons. At a later date London appears to have been in 1252, a town of more than three miles in circumference, and to have been guarded by fifteen towers, which latter are conjectured to have been 40 feet high, and the walls 22. The prætorium and its adjacents are supposed to have occupied the site of Bank, and Contubernial tented pavilions were discovered there and at the Lothbury gate of the Bank, and at St. Mary's Woolneth. In regard to Anglo-Saxon London, our information is as scanty as it is with respect to the Roman city; but we may make some allusion, that is if it be necessary, during the barbarous period that succeeded the final departure of the Romans from the island, when it was alternately attacked and ravaged by the Picts and Scots, by the Saxons and Angles. In the sixth century it became the capital of the Anglo-Saxon kingdom of Essex, and in the following one a bishop's see. Sebert, king of Essex, having been converted to Christianity, erected a cathedral church to which St. Etheldreda submitted, and which was the site of the present cathedral and Westminster Abbey. All however that we know of London, till for many centuries afterwards, extends no further than a few sites and names, the memory of which has been preserved, notwithstanding the superstructures to which the present buildings themselves have been subjected. At this period and for long after, the city could have been little more than an assemblage of hovels, intersected by narrow miry lanes, the whole enclosed by walls, except on the side towards the river. It was on the banks of the river, in Castle Baynard Ward, and on the south side of the present cathedral, that the residence of the Anglo-Saxon kings stood, erected either by Alfred, Edward, or Athelstan; most probably by the last, whose name is retained in that of Adel or Addle Hill. This Anglo-Saxon palace was forsaken by Edward the Confessor, who removed to that which he had erected at Westminster; after which, together with the cathedral, the first-mentioned building was destroyed by fire in 1067. The Tower Royal (at the end of the street so called) was another palace, erected after the Norman conquest, but its origin cannot be traced. In Richard II.'s time it was called the Royal Wardrobe, and was granted by Richard III. to the first duke of Norfolk.

Of public buildings there were scarcely any besides religious houses and mansions, both which were very numerous previous to the Reformation, and of several of them the names are retained at the present day, viz. Black Friars, White Friars, Crutched Friars, Charterhouse (the Charter-house); Priories—St. John of Jerusalem, Clerkenwell (St. John's Gate), St. John's College, Southwark; Nunnery—St. Helen's, Bishopsgate Street, and Holywell, in Holywell Lane, Shoreditch; Hospitals—St. Giles's, St. James's (the Palace), St. Katherine's, and St. Thomas's. What few residences there were of note were scattered about, and mingled with the meanest habitations: that of Henry, earl of Northumberland in the time of Henry VI., stood in Fenchurch Street; Crosby House (1470), a portion of which still remains, and has lately been restored, in Bishopsgate Street. Oxford House (1470), the residence of the earl of Oxford in Southwark. St Swithin's Lane, where the houses of Sir Richard Empson and Dudley, the notorious agents of Henry VII.; and that of Cromwell, earl of Essex, stood in Throgmorton Street, while at a later period Aldersgate Buildings was the residence of the Duke of Lennox. Oxford and New houses, and warehouses, were inhabited by the noble and the opulent. The antient residence of the bishops of London was in Aldersgate-street.

As to the actual appearance and condition of the metropolis we have little material for conjectural and piecemeal information until we come down to times that may comparatively be termed recent; for contemporary chroniclers and topographers seem to have had no regard to the curiosity of posterity; but contented themselves with noting, whether briefly or prolixly, most minutely, what they beheld without aiming at anything like a graphic description of the whole. We may however easily picture to ourselves what London must have been even in the first half of the sixteenth century, when the act for improving and paving the city, and the rebuilding of the houses, and the gilds and streets, begun in 1532, was nearly finished. The streets, gloomy by day and left in total darkness at night, we shall be forced to add a few shades more to the picture of the noisy condition of the citizens. Perhaps even the vilest by-lanes, allies, and courts that are now to be met with, are, except in regard to the height of the walls, and the degree of fit and sloughs, very perilous and noxious as well for all the king's subjects on horseback as on foot, with carriages. If to the formidable inconveniences to which passengers and traffic were subjected, we add the poor condition of the streets, gloomy by day and left in total darkness at night, we shall be forced to add a few shades more to the picture of the noisy condition of the citizens. Perhaps even the vilest by-lanes, allies, and courts that are now to be met with, are, except in regard to the height of the walls, and the degree of fit and sloughs, very perilous and noxious as well for all the king's subjects on horseback as on foot, with carriages.
site houses, it must also have rendered fires particularly destructive, so that what with the denseness of the buildings, the scarcity of their chimneys, and an insufficient supply of water, the breaking out of a fire must have threatened a conflagration of a whole neighbourhood, as is still the case at Constantinople. At the present day such a conflagration as that of the great fire of 1666 would be almost impossible. The efforts were made to keep its progress in check, but its general ruin and a very mean appearance of the city. Whatever degree of comfort or even luxury there may have been in the abodes of a few great nobles, there can be no doubt that the people generally, even including the weather-beaten burghers, were miserably lodged and housed. The excellence of the dress was not to be mistaken for the rule itself; and if we contrast the condition of society class by class, we find that, setting aside the very highest, by whom greater state was affected than at present, all the rest will bear no comparison with stalwart mansions, of which Northumberland House is the only one remaining, no traces of the others being left, although the names of several of them are still retained in the streets opening into the Strand. Even Exeter Change, which occupied the site of Exeter House, originally built by Sir John Harington, but burnt in 1666, and transmitted its name to the present Exeter Hall. Still greatly as the metropolis had increased in extent in the reign of Elizabeth, the map of it at that period (a cut which may be seen in the 'Fenny Magazines,' No. 427), shows a mere thread of comparison between the present gigantic dimensions: all the north and west of the Strand was open fields and country, as well as nearly all the south bank of the river, now a populous and extensive district, and connected with the northern side by several bridges; whereas before the erection of Westminster Bridge (commenced 1739), London Bridge was the only structure of its kind which the metropolis possessed. Insufficient as the increase of buildings in Elizabeth's reign may now appear, it is regarded as an effectual precaution against a farther apprehension. It is at the time, that the question of its proclamation in 1580, forbidding the erection of any but houses of the highest class within three miles of the city. The same was done by her successor, but in neither case had the effect so much to be feared; and the proclamation of 1666 made many new districts and parishes have been added to the suburbs. Terrible as was the calamity which during that year befell the city itself, when upwards of 13,000 houses and other buildings, including St. Paul's cathedral and the portico added to it by Inigo Jones, fell a prey to the flames, it has been attended with much benefit. 'Heaven be praised,' explains Malcolm, 'Old London was burnt!' and indeed what is chiefly to be regretted now is that advantage was not taken of the opportunity then afforded of laying out the suburban districts in a regular and convenient manner. A plan for that purpose was made by Sir Christopher Wren, and another by Sir John Evelyn. If either of them had been carried into execution, the City would have been infinitely more commodious for traffic than it now is, notwithstanding the great number of houses which have been taken place within the few last years, by opening a communication from New London Bridge to the Mansion House and Bank, and thence northwards to Finsbury Circus. According to Wren's plan there would have been two principal streets, the one forming its principal thoroughfare, running from the Tower, intersecting in their course one or two open polygonal areas or piazzas (from which other streets would have branched off), and terminating in a larger triangular piazza, in which St. Paul's would have been placed, and before another street would have been carried in a straight course to Temple Bar. Evelyn's plan also provided for several piazzas of various forms, one of which would have been an oval with St. Paul's in the centre of it; but it differed from the other in proposing a street in a line from the Tower to Finsbury Circus, and running straight onwards to Temple Bar; but this plan did not like Wren's, contemplate a continued quay or terrace along the river. Unfortunately the singular obstinacy and narrow-mindedness of the citizens set them both at naught, and the town as it now stands is irregular and unarchitectural as it is inconvenient. Wren at this date the metropolis extended itself considerably to the west and north-west, where it became more fashionable to reside; and no doubt the fire of London had a great share in the change. In the present state of the city having been destroyed by it, the nobility removed from the courts and traffic much earlier than they otherwise might have done. Both Soho Square and Golden Square (now places of very inferior rank to the more modern ones) were built before the close of the seventeenth century; while Hanover and Cavendish Squares appear to have been erected in the years 1716 and 1720. In the reign of George II. there are three churches, each of which is distinguished by a noble Corinthian portico, viz. St. George's, Bloomsbury, consecrated in 1725, and Wren's Church of St. George's, Hanover Square (1742). The first of these however has not a name that is equal to that of the second, notwithstanding that it ought to place the name of Hawksmoor at least on a level with that of Gibbs. [HAWKSMOOR; GIBBS] In 1730 Old Bond Street was laid out, but its situation was still almost rural, all to the north being fields, lanes, and covered ground; and many mansions which are now surrounded by buildings and streets for a considerable distance, then stood, if not quite solitary, with only a few dwellings about them. Such was the case with Montague House, now the British Museum, and Burlington House, Piccadilly. Notwithstanding however that other squares and streets continued to be progressively formed, until the district east of the Strand and west of the Temple was completely filled up, all the same, there was no general increase in the appearance of the city, neither that nor any other part of the metropolis bore much resemblance, in character and aspect, to what it now does, the houses having been all, if not rebuilt, more or less modernized since that time. As one instance of this, we may observe that no one would be able to recite St. James's Street as shown in one of the plates of Hogarth's Rake's Progress, were it not for the gateway of the palace, the only feature that remains unaltered. The town might have gone on increasing to its present bulk; yet under the present system of paving and lighting the streets...
LON

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provemment, and the increase of building, little advance was
made in the architecture of the metropolis during the latter
part of the last century. Almost the only public edifices of
time at all entitled to the epithet of magnifcent were Somerset House and St. James's Church; latter how-
ever may with equal propriety be considered as belonging
to the present century, since it was not completed as at
present till about 1826. The Adams indeed erected the
Adelphi, Portland and Stratford Places, and two sides of
Pall Mall, and the Lunatic Asylum from Bloomsbury; but their
public works, and as specimens of street architecture are (at
least the first-mentioned) of exceedingly questionable taste,
although they may fairly be allowed to be handsome in
generall general air and appearance. The Adams however are
the only architects of the present time to have attempted the
style of ordinary house-building, and of having substituted
convenience, cheerfulness, and lightness for the incommo-
duinoseness and heavy taste which formerly prevailed. The
Pantheon, in Oxford Street, by James Wyatt, ought per-
haps to be mentioned as a specimen of architecture of some
note, belonging to the latter half of the last century; but it
no longer exists, save in name alone, being now totally altered,
except some portion of the façade, which in itself disposed no very great taste, and has not sufficient sit to
give it importance; while the interior is now entirely
of a very different purpose from its original one. As buildings,
one of the theatres can be dated farther back than the present century, at the commencement of which, or about
1820, the other theatres were erected, the new Opera House
in Drury Lane, a cluster of other squares that have risen up in its imme-
diate neighbourhood was first formed. Covent-Garden
Theatre, the first production of Sir R. Smirke, and almost
the first specimen of the Grecian Doric style in the metro-
polis, is, so generally acknowledged, no more than a
remnant in its architecture; or rather it has so happened that it has
been followed by numerous other structures and improve-
ments, which have given (at least as far as they extend)
quite a different aspect to the town.

While the wide streets were, in the great house, the subjects for architectural taste, or however objectionable when examined in detail, it can-
ot be denied that both Regent Street and the Regent's
Park were magnificent improvements, and have, how-
ever, led to a variety of others. They have certainly
advanced the taste and art of the people, and would be remembered by those who
would formerly have been considered quite prodigal;
and if that taste be in many instances very bad—not to
say paltry,—it is upon the whole preferable to the dull
and narrow streets that used, as far as their architecture was con-
cerned, to be the ordinary system in the metropolis. The
Stark affords a very fair compar-
ison between the old and new modes of building, the houses
being of the same class, though very different in architec-
ture. The public convenience and building laws are so
scarcely hesitate to decide in favour of the latter, it may be
almost taken for granted, not only that attention to appear-
ance is more studied than it used to be, but that the con-
tion of shopkeepers and tradesmen is improving likewise.
Acompanied by the building of the Park Lane in
Adelphi, and forming approaches to it, in consequence of the change of site, have already greatly metamorphosed that part of the city, and awakened a spirit of improvement which bids fair to keep pace with that at the other end of the
town. As to King William Street and St. James's Street, much cannot be
said in praise of the façades which it exhibits. The new
range of buildings in Princes Street, at that extremity of it which was previously a most inconveniently narrow lane, has, on the contrary, a somewhat imposing air of noble magnificence, and is more concerned, to which the house of just mentioned to Finsbury Circus, is decidedly better
than that near the bridge. While it displays a pleasing
regularity of design and uniformity of character, it does not
stand by too great sameness and monotony, the elevations
are diversified, and the houses have an air of greater loftiness than usual,
owing to the breadth of the street not exceeding their
height. When the Royal Exchange (destroyed by fire on the night of Jan. 19th, 1838) shall come to be rebuilt, it will do no credit to any other improvements in its immediate vicinity. In addition to this, it is in contempla-
tion to form new streets where at present either no
public thoroughfares exist or only such as are very crooked and narrow. Among these is one from the Post Office in
Lambeth and the Bank; another in continuation of Far-

gion Street northwards; a third to open a direct com-
munication between Holborn and the Strand, along the
east side of Lincoln's Inn Fields. A similar project is now
progressing for improving the neighbourhood of Westminster,
by means of a spacious street intended to lead from the
west front of the Abbey to Pimlico. They are not only
for these but for other improvements of the same kind
must be tolerably apparent to any one who looks at a map
of London; and among them would be a direct line of com-
munication from the west end of Oxford Street; another from Covent Street into Court
Garden Market; and a third from Holborn into the Strand,
to be obtained by widening and rebuilding the whole of
Drury Lane.

With the exception of the terraces in the Regent's Park,
Hyde Park Terrace near Bayswater, and that in St. James's
Park—which are for the greater part more tawdry than
rich in point of design, none of the newer ranges of private
houses make any pretension to architectural decoration; or
if any thing of the kind be occasionally attempted, as in
Eaton Square, &c., it is so meagre in itself and so grudgingly
bestowed, as to be quite the reverse of satisfactory. Internally however the houses themselves are, in proportion
to their size, far more commodious and better fitted up than
half a century ago. The streets and squares of the town
are likewise sufficiently airy and cheerful, owing both
to the greater width of the streets themselves, and to the
broadest foot-pavements and the areas between them. The
kitchens are less gloomy and the foot-pavements less muddy than in the wider
and narrower streets. Besides this, another advantage is that the
inhabitants are less exposed to the observation of their
opposite neighbours; while the system of macadamization, which has made so much abated the nuisance of the rattling of carriages. In
fact, as regards the laying out, paving, and lighting of the
streets, there is very little room for further improvement:
there is however one serious inconvenience attending some
of the streets that are free from the disadvantages of the
width of the carriage-way being so great as to render it
hazardous to cross them when filled with carriages. This
is particularly the case in Regent Street; yet the remedy
for it is easy, as all danger and inconvenience to foot-passen-
gers would be removed by the removal of a part of the
buildings in the metropolis. It is at least understood that the salubrity of the metropolis has been greatly increased both by the supply of water and the present effectual
system of drainage and sewerage.

The town has been better consulted than it used to be by
the erection of more commodious markets, in respect to which London was till lately not so well provided as
Liverpool. Although not much of an architectural improve-
ment, the present Covent-Garden Market is far more com-
mfortable, both in accommodation and in the manner of the
other posts around, at one or two crossings; besides which
the roadway of the crossing would then be sufficiently
lighted at night. In addition to the more obvious improve-
ments as regards paving, lighting, the widening of streets,
and the removal of buildings which have been hindered by
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mentioned that the salubrity of the metropolis has been greatly increased both by the supply of water and the present effectual
system of drainage and sewerage.
some advancement has of late been made even in this respect, both by the establishment of the National Gallery and the unserved access now afforded to the British Museum, whose collections have been greatly increased in the present century. The Soanean Museum, can yet lastly be named. The opaque glass to which we have already been made to have both Westminster Abbey and St. Paul's opened to visitors gratuitously; but it has hitherto been unsuccessful. In the meanwhile annual exhibitions are increasing: formerly there was only that of the Royal Academy; whereas there are now two at the British Institution, for modern pictures, the other for works of the old masters; and that of the Society of British Artists, besides one or two of paintings in water-colours. To these may be added various other exhibitions of more or less recent origin, as diorama, etc. Formerly the animals at Exeter Change were to be far famed among the sights of London; but in lieu of them we have now the Zoological Gardens at the Regent's Park and the Surrey Zoological Gardens. In the course of a few years the Regent's Park will most probably possess another novel and attractive exhibition, it being intended to convert the whole of the inner circle into a botanical garden, with buildings and other ornamental accessories, and the mention of this reminds us that St. James's Park has been altered greatly for the present season. Formerly there were but few herbaceous beds, the appearance of a well laid-out pleasure-ground, with a lake studded by islets. The Adelphi Gallery, Lowther Arcade, and the Polytechnic Institute, Regent's Park, are now in a flourishing state of business, and the spread of information and the diffusion of knowledge. The same remark applies to the various literary and scientific institutions, of which there is now some one or other in almost every quarter of the metropolis. Another class of establishments which, as now organized, would be fit to occupy the club-houses, principally at the west-end of the town, which in some degree partake of the nature of places of literary as well as convivial meeting. Some of them are not only splendidly fitted-up and afford the most luxurious accommodations, but are so numerous that there is little difficulty in finding a place for the reception of any portion of the last-mentioned edifices, and to a certain extent of the supposed absurdity of its steeps, having standing that, in its outline and architectural expression that can make greater beauty and propriety than any other we can produce; and yet the original plan and executed in the design of St. Martin's has escaped from a proach on account of its portico alone. How far the architect of the latter was really gifted with taste will be more or less; but is certainly not otherwise inferior to Wren's, and great pass in the classical dignity which they derive from their porticoes. It has indeed hitherto been the fashion to reduce the porticoes of our national buildings to a mere husk, and to cover the steeps of which was also by Gibbs, will disconcert the opinion passed on it by Mal ton, who terms it a "drabbing fabric." Besides churches, there are very few public buildings, most that make much architectural pretension, are very few, now remaining. The former building of the Bank of England, begun in 1734, possessed little beauty or grace; and the wings afterwards added, by Sir John Taylor gave it its present aspect of façade, St. Bartholomew's, London, commenced by Gibbs in 1725, is a fair specimen of the average taste of design at that period, though which is the case, it is surprising that the Mansion House (1739) should have been so severely censured, even by Sir John Taylor. The design of those buildings is peculiar, and yet among them were two of the noblest which the even now possesses, namely, the Excise Office and New. The merit of the latter has been universally admitted; other, on the contrary, is scarcely ever mentioned, not that of the Town and Cities. The last is in the style of manner combined with simplicity, it surprises everyone else in the metropolis; not so the front of Guildhall Dance (1789), which is utterly unworthy of the hands of the great interior which it masks, being in a most mongrel manner, in which it abounds; and is in many respects, the most mongrel period of the Gothic.
The table below lists the most worthy buildings of the Seventeenth Century in London, with their architects and some additional remarks.

<table>
<thead>
<tr>
<th>Date</th>
<th>Architect</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1619</td>
<td>Inigo Jones</td>
<td>Chiefly admirable as the first specimen of pure Italian.</td>
</tr>
<tr>
<td>1626</td>
<td>Ditto</td>
<td>Tuscan, distyle in antis.</td>
</tr>
<tr>
<td>1631</td>
<td>Dito</td>
<td>Fluted Doric column; total height, including pedestal, 360 feet, 600 feet high.</td>
</tr>
<tr>
<td>1671-7</td>
<td>Sir C. Wren</td>
<td>Exterior concealed by houses; interior over-praised chiefly remarkable for its dome.</td>
</tr>
<tr>
<td>1671-7</td>
<td>Ditto</td>
<td>Extreme length, 500 feet; height to top of cross, 360 feet.</td>
</tr>
</tbody>
</table>

**Whitehall Chapel**, 1619, designed by Inigo Jones.

**York Stairs**, 1626, by Dito.

**St. Paul's, Covent Garden**, 1631, by Dito.

**Temple Bar**, 1678-9, by Sir C. Wren.

**The Monument**, 1671-7, by Dito.

**St. Stephen's, Walbrook**, 1672-9, by Dito.

**St. Paul's Cathedral**, begun 1675, by Dito.
### Eighteenth Century.

<table>
<thead>
<tr>
<th>Date</th>
<th>Architect</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1710</td>
<td></td>
<td>Style Italo-Roman; exterior both magnificent and picturesque, though not faultless.</td>
</tr>
<tr>
<td>1724</td>
<td>J. James</td>
<td>Portico hexastyle, Corinthian.</td>
</tr>
<tr>
<td>1721-6</td>
<td>J. Gibbs</td>
<td>Portico hexastyle, Corinthian; the general style bad.</td>
</tr>
<tr>
<td>1731</td>
<td>Hawkinsmoor</td>
<td>Ditto, ditto; Campanile excellent.</td>
</tr>
<tr>
<td>1739-53</td>
<td>Dance</td>
<td>Length 1066 feet.</td>
</tr>
<tr>
<td>1739-50</td>
<td>Labelye</td>
<td>Italian Ionic on basement.</td>
</tr>
<tr>
<td>1748</td>
<td>Holden</td>
<td>Length 1000 feet.</td>
</tr>
<tr>
<td>1751</td>
<td>W. Kent</td>
<td>Plain in design, but of most commanding aspect.</td>
</tr>
<tr>
<td>1760-70</td>
<td>R. Mylne</td>
<td>Excellent in design and character.</td>
</tr>
<tr>
<td>1769</td>
<td>J. Gandon</td>
<td>Though poor in parts, a good example of Italian.</td>
</tr>
<tr>
<td>1770</td>
<td>Adams</td>
<td>River front handsome.</td>
</tr>
<tr>
<td>1770-82</td>
<td>Dance</td>
<td>Very picturesque in parts.</td>
</tr>
<tr>
<td>1776</td>
<td>Sir W. Chambers</td>
<td>Hexastyle loggia, Greek Ionic; sculptured frieze and pediment.</td>
</tr>
<tr>
<td>1780</td>
<td>Rogers</td>
<td>Admirable in design and character.</td>
</tr>
<tr>
<td>1789-926</td>
<td>Sir J. Soane</td>
<td>[front 598 feet.]</td>
</tr>
<tr>
<td>1799</td>
<td>R. Jupp</td>
<td>Though poor in parts, a good example of Italian.</td>
</tr>
</tbody>
</table>

### Nineteenth Century.

<table>
<thead>
<tr>
<th>Date</th>
<th>Architect</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1808-9</td>
<td>Sir R. Smirke</td>
<td>Greco-Doric; tetra stylo portico.</td>
</tr>
<tr>
<td>1811-12</td>
<td>B. Wyatt</td>
<td>Portico hexastyle, Ionic. Length 565 feet.</td>
</tr>
<tr>
<td>1813</td>
<td>Wm. &amp; H.W. Inwood</td>
<td>Length 1326 feet.</td>
</tr>
<tr>
<td>1823-9</td>
<td>R. R. Smith</td>
<td>Greco Doric on a basement.</td>
</tr>
<tr>
<td>1823-5</td>
<td>R. C. Cockerell</td>
<td>The Long Room and centre of the river front quite altered after the accident in 1836. Length 464 feet.</td>
</tr>
<tr>
<td>1825</td>
<td>R. Smirke</td>
<td>The finest copy of Athenian Ionic.</td>
</tr>
<tr>
<td>1825-7</td>
<td>R. Smirke</td>
<td>Hexastyle, Ionic portico; extent of front 350 feet.</td>
</tr>
<tr>
<td>1824-6</td>
<td>Sir J. Soane</td>
<td>Tetra stylo portico.</td>
</tr>
<tr>
<td>1824</td>
<td>D. Burton</td>
<td>Greco-Doric Ionic.</td>
</tr>
<tr>
<td>1825-31</td>
<td>H. Rennie</td>
<td>Roman Corinthian.</td>
</tr>
<tr>
<td>1825-8</td>
<td>Gandy-Deering</td>
<td>Hexastyle, Tivoli Corinthian on a basement.</td>
</tr>
<tr>
<td>1826</td>
<td>Poynter</td>
<td>Grecian Ionic hexastyle.</td>
</tr>
<tr>
<td>1826</td>
<td>J. Shaw</td>
<td>Grecian.</td>
</tr>
<tr>
<td>1827-8</td>
<td>W. Tite</td>
<td>Gothic.</td>
</tr>
<tr>
<td>1827-9</td>
<td>Ditto</td>
<td>Portico tetrastyle, with square pillars.</td>
</tr>
<tr>
<td>1827-8</td>
<td>G. Smith</td>
<td>Façade not completed; decastyle portico, and dome.</td>
</tr>
<tr>
<td>1827-9</td>
<td>L. Vulliamy</td>
<td>Greco Doric, with pleasing originality of design.</td>
</tr>
<tr>
<td>1828</td>
<td>D. Burton</td>
<td>Hexastyle, Tivoli Corinthian on a basement.</td>
</tr>
<tr>
<td>1829-32</td>
<td>H. Roberts</td>
<td>Greco-Doric Ionic.</td>
</tr>
<tr>
<td>1829-32</td>
<td>P. Hardwick</td>
<td>Its bas-relief frieze the only specimen in London.</td>
</tr>
<tr>
<td>1830-1</td>
<td>Gandy-Deering</td>
<td>Italian; magnificent, yet somewhat heavy, and base.</td>
</tr>
<tr>
<td>1830-32</td>
<td>J. Shaw</td>
<td>Greco-Corinthian, distyle in antis.</td>
</tr>
<tr>
<td>1830-36</td>
<td>B. Wyatt</td>
<td>[ment poor].</td>
</tr>
<tr>
<td>1830-36</td>
<td>J. Turner</td>
<td>Gothic; handsome Louvre tower.</td>
</tr>
<tr>
<td>1831-3</td>
<td>C. Fowler</td>
<td>Total height, including statue, 137 ft. 9 in.</td>
</tr>
<tr>
<td>1831</td>
<td>C. Barry</td>
<td>Greek-Italian, with pendentive domes.</td>
</tr>
</tbody>
</table>

### Choice specimens of the best Italian style, particularly the design of garden front.

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<thead>
<tr>
<th>Date</th>
<th>Architect</th>
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<tr>
<td>1830-1</td>
<td>D. Burton</td>
<td>Gothic; handsome spire.</td>
</tr>
<tr>
<td>1832</td>
<td>L. Vulliamy</td>
<td>Modernized Gothic.</td>
</tr>
<tr>
<td>1832</td>
<td>L. Vulliamy</td>
<td>Grecian; total extent of front 455 feet.</td>
</tr>
<tr>
<td>1832</td>
<td>L. Vulliamy</td>
<td>One of his chaste productions. Style, Italian.</td>
</tr>
<tr>
<td>1832</td>
<td>L. Vulliamy</td>
<td>Style Tudor, white brick and stone; central tower of such design.</td>
</tr>
<tr>
<td>1833</td>
<td>Sir J. Soane</td>
<td>Style Elizabethan, red brick and stone.</td>
</tr>
<tr>
<td>1834</td>
<td>S. Smirke</td>
<td>Italianized Greek.</td>
</tr>
<tr>
<td>1834-7</td>
<td>J. Newman</td>
<td>Style a modified Italian; bas-relief panels.</td>
</tr>
<tr>
<td>1835</td>
<td>J. Field</td>
<td>A Greco Doric propylæum on an imposing scale.</td>
</tr>
<tr>
<td>1836</td>
<td>C. Barry</td>
<td>Style modified Italian; singular but pleasing.</td>
</tr>
<tr>
<td>1836</td>
<td>C. Barry</td>
<td>Style Italian; interior rich and tasteful.</td>
</tr>
<tr>
<td>1836-7</td>
<td>Sir R. S. Smirke</td>
<td>Italian.</td>
</tr>
<tr>
<td>1836-7</td>
<td>G. Smith</td>
<td>Italian.</td>
</tr>
<tr>
<td>1837-8</td>
<td>S. Beazley</td>
<td>Italian.</td>
</tr>
<tr>
<td>1837-8</td>
<td>J. Davies</td>
<td>Italian.</td>
</tr>
<tr>
<td>1838-7</td>
<td>J. Davies</td>
<td>Italian.</td>
</tr>
</tbody>
</table>
**Divisions.**—The City of London is divided, for ecclesiastical objects and for the management of the poor, into 98 parishes within the walls, and 11 without the walls. For municipal purposes the City is divided into 26 wards, each of which is considered as a separate community. The Alderman and common-councillors, who are chosen to represent the ward (as hereafter explained) in the City parliament, form likewise a ward council, and they have the control of many of its local affairs. In most of the wards there are divisions of sheriff's business, and meetings of the sessions of elections. The division into wards appears to have been made without regard to the parochial divisions, as the different wards consist of divisions of parishes as often as they are coextensive with them. An inquest jury is chosen annually in each ward, whose office it is to make reports of nuisances and returns of non-free-men, and to perform such other duties as are within the province of a leet jury. The competitive wealth and importance of each of the 26 wards may be estimated from the following statement of the amount of rental assessed in each for local purposes in 1771, 1801, 1831, and 1838 respectively:

<table>
<thead>
<tr>
<th>Ward</th>
<th>Amount of Rental</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Aldermen, Within and Without</td>
<td>14,001</td>
</tr>
<tr>
<td>2. Aldermen, Without</td>
<td>12,002</td>
</tr>
<tr>
<td>3. Alderman's House</td>
<td>4,605</td>
</tr>
<tr>
<td>4. Aldrington, Within and Without</td>
<td>10,485</td>
</tr>
<tr>
<td>5. Aldrington, Without</td>
<td>9,463</td>
</tr>
<tr>
<td>6. Aldrington, Within and Without</td>
<td>5,465</td>
</tr>
<tr>
<td>7. Aldrington, Without</td>
<td>3,850</td>
</tr>
<tr>
<td>8. Aldrington, Within and Without</td>
<td>5,465</td>
</tr>
<tr>
<td>9. Aldrington, Without</td>
<td>3,850</td>
</tr>
<tr>
<td>10. Aldrington, Within and Without</td>
<td>5,465</td>
</tr>
<tr>
<td>11. Aldrington, Without</td>
<td>3,850</td>
</tr>
<tr>
<td>12. Aldrington, Within and Without</td>
<td>5,465</td>
</tr>
<tr>
<td>13. Aldrington, Without</td>
<td>3,850</td>
</tr>
<tr>
<td>15. Aldrington, Without</td>
<td>3,850</td>
</tr>
<tr>
<td>16. Aldrington, Within and Without</td>
<td>5,465</td>
</tr>
<tr>
<td>17. Aldrington, Without</td>
<td>3,850</td>
</tr>
<tr>
<td>18. Aldrington, Within and Without</td>
<td>5,465</td>
</tr>
<tr>
<td>19. Aldrington, Without</td>
<td>3,850</td>
</tr>
<tr>
<td>20. Aldrington, Within and Without</td>
<td>5,465</td>
</tr>
<tr>
<td>21. Aldrington, Without</td>
<td>3,850</td>
</tr>
<tr>
<td>22. Aldrington, Within and Without</td>
<td>5,465</td>
</tr>
<tr>
<td>23. Aldrington, Without</td>
<td>3,850</td>
</tr>
<tr>
<td>25. Aldrington, Without</td>
<td>3,850</td>
</tr>
<tr>
<td>26. Aldrington, Within and Without</td>
<td>5,465</td>
</tr>
<tr>
<td>Total</td>
<td>457,705</td>
</tr>
</tbody>
</table>

The corporation of London consists of the whole body of the citizens or freemen, under the style of Mayor, Commonalty, and Citizens, viz.:—

<table>
<thead>
<tr>
<th>Title</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lord-mayor</td>
<td>1</td>
</tr>
<tr>
<td>Aldermen, in addition to the Lord-mayor</td>
<td>25</td>
</tr>
<tr>
<td>Common-councillors</td>
<td>246</td>
</tr>
</tbody>
</table>

**Officers of the Corporation.**

The Sheriffs, who are jointly sheriff of Middlesex.

**Mayor.**

- Recorder
- Town-clerk
- Common-sergeant
- Judge of the Sheriffs' Court and Assistant Judge of the Central Criminal Court
- The four Common Pleaders
- The two Secondaries
- The two Under-sheriffs
- Comptroller and Clerk
- Remembrancer
- Solicitor and Clerk Comptroller of the Bridge House
- Coroner for London and Southwark
- Clerk of the Peace
- Clerk of the Common Pleaders
- The four Auditors of the Mayor's Court
- The four Auditors of the City and Bridge House Accounts
- Clerk of the Chamber
- The two Bridge-masters or Wardens
- The three Esquires, and other officers of the lord-mayor's household
- The four Harbour-masters, and other officers connected with the port of London and mooring-chains service
- The Clerks and Assistant Clerks to the lord-mayor and sitting magistrates in London and Southwark

The Keepers, Ordinary and Chaplains, and Surgeons of the several Prisons of the City.

The Superintendent of Police, the City Marshal, and other officers connected with the police of the city, and the sheriff and officers employed in the civil government of the corporation, collection of its revenue, the markets, &c.

The Lord-mayor is elected on the 29th September in each year, from among those aldermen who have served the office of sheriff, or much aldermen, or (if no such alderman is selected) from among the livemarymen in common-hall, and of those two, one is selected, usually the senior alderman, by the court of aldermen. He enters upon the duties of his office on the 9th November following: if he refuses to serve, he must pay a fine of 1,000l. The lord-mayor elect is then sworn to the lord-chancellor, who signifies the assent of the crown to his election. He must also be presented, on the day on which he enters upon his office, to the barons of the exchequer, when he takes the oath of office. The salary and allowances paid to him from the city funds during his year of office also amount to 642l. 8s. 4d., in addition to which he receives sums from various sources which raise the official income to about 7900l. The expenses, chiefly arising from a sumptuary, usually exceed the income by about 400l. He resides during his official residence at the Mansion-house, which is handsomely furnished, and provided with plate and jewelled ornaments said to be worth from 20,000l. to 36,000l. The functions of the lord-mayor are multifarious. He presides over the courts of aldermen, common-council, and common-hall. He is conservator of the Thames, and holds eight courts during the year of office, two for each of the counties of Middlesex, Surrey, Essex, and Kent, 'to inquire into all offences that conduce to the peace and safety of the river, and impede the common passage of the Thames and Medway.' He presides as judge in the Court of Husings, the supreme court of record in the city, which court is generally held once a week, whence it is frequently resorted to by the obtaining judges to examine depositions. A lord-mayor acting as such is always summoned to attend the privy-council which declares allegiance to the successor. At the coronation, the lord-mayor acts as chief butter, and receives for his fee a gold cup.

The aldermen are elected for life, at meetings of the ward, called a wardmote, which must take place within 14 days after each vacancy shall occur. The electors are such householders of the ward as are freemen of the city and pay local taxes to the amount of 30s. per annum each. A wardmote refusing to serve the office when elected may be fined 500l., but is excused on swearing that he is not worth 30,000l. With the exception of the alderman of the Ward of the Bridge (always the senior alderman), who has no local duties to perform, every alderman appoints a deputy from among the common-councillors of the ward. Every alderman is a justice of the peace for the city of London, and one of them attends, by a rotation among the body, for a week at one time in the justice-room at the Guildhall, for the Lord's sessions in several cases where two magistrates are required to determine any case at the Mansion-house, this sitting alderman proceeds there, and joins the lord-mayor for the purpose.

The common-councillors are elected annually on St. Thomas's day, at a wardmote, the electors being the aldermen in the elections of aldermen. The number elected varies in the different wards, but not in proportion to their extent and presumed importance, the smallest number in any ward being 4, and the greatest 17. Any qualified freeman of the city aged 21 and above when elected, would be subject to fines and disfranchisement for not serving, but such cases seldom or never occur. The common-councillors do not meet in any court exclusively their own, their sittings being always under the presidency of the lord-mayor and attended of right by the aldermen. The title of the court of common-council is 'the Lord-Mayor.'
Aldermen, and Commons of the city of London in Common Council assembled. To constitute a court there must be present the lord-mayor or some alderman, his locum tenens, two other aldermen at least, and as many common councilmen as with the lord-mayor and aldermen present, shall make up the number of 40. The senior law-officers of the city have seats in the court, but have no vote, and do not speak unless called upon to do so. Of these 40 members, 30 are always required to attend, but none is excluded upon the motion of any member of the court. There are usually about 12 ordinary meetings of the court in the year. The lord-mayor may at any time call the members together, and on such occasion from a moderate number of members he seldom fails to do so. This court has now unlimited power of applying the funds of the corporation, and full legislative authority in all municipal matters, where not restrained by statute. The members of the court are severally nominated and removed by the lord-mayor, and thus perform various executive functions. The common seal of the city cannot be applied to any instrument but by order of the court of common-council, which thus reserves power over the disposal of the landed property belonging to the corporation.

The two sheriffs are chosen annually by such of the freemen as are livemen of some one of the city companies. Every alderman who has not served the office is put in nomination as a matter of course. The lord-mayor, before every April, may pay in nomination any number of freemen not exceeding nine. Any person thus nominated remains on the list until he is elected or has paid the fine of 400l. and 20 marks for not serving the office; and on the day of election, Midsummer-day, he may put any other man in nomination. No person is liable to serve the office twice. The sheriffs attend the lord-mayor on state occasions and at every court of aldermen. They present the petitions of the court of aldermen or common-council to the House of Commons, and on the address, in the presence of the House, in the crown they attend at court for the purpose of learning when the address will be received. They attend the common-hall at elections to take the votes. They are the returning officers of the members of the House of Commons for the two counties of Middlesex. Either the sheriff or the under-sheriff of Middlesex attend at the execution of capital sentences within the city. They have the superintendence of prisons within the city, and present reports concerning their state at every court of aldermen. The sheriffs receive between them a payment from the city of 737l. 6s. 4d., and they have a few incidental emoluments which amount to 10,000l. for the two. On the other hand, the state which they are expected to maintain, the imperfection of the measures and the methods by which they attend the Central Criminal Court at the Old Bailey subject them to very heavy expenses, amounting for each sheriff to about 2000l. beyond the receipts. The sheriffs are esteemed as the citizens of London, some of its most important offices, and the sheriffs are not regarded as the superintendents of the criminal courts of the city, and the secondaries, who are elected by the common-council. The sheriff is elected for life by the court of aldermen. He must be a freeman, but the grant of freedom may immediately precede the election. The recorder has always been chosen from among barristers. The duties of recorder are those of an advocate and adviser of the corporation. He is advised with on all cases relating to the affairs of the city, and holds a brief for the corporation in all cases, except in the courts where he himself presides. When the city is heard by the House of Commons, the corporation in court argues the case. He is by charter a justice of the peace and commissioner of the Central Criminal Court, and a justice of the peace in Southwark. The recorder attends the lord-mayor on all important occasions of state ceremony. He sits with the judges of the court of husting to direct them in points of law and to give judgment. The recorder acts as one of the judges at the twelve sessions held annually in the Old Bailey, and at the conclusion of each year he reports a report of the case of every capital convict for the consideration of the privy-council, and he afterwards attends to take the pleasure of the Queen thereupon. He issues warrants for the reprise or execution of the criminals whose cases have been reported. The annual salary of the recorder is 5000l., in addition to which he receives the ordinary fees on all cases and briefs which come to him from the corporation, and some other trumpery emoluments.

The common-warden, who has always been a barrister, is elected by the common-council on the nomination of some member of the court. His duties are to reside daily in one of the courts of the Old Bailey during the sessions, London and Middlesex, for which purpose he is always named in the commission; he attends all meetings of the liveries in common-hall; he attends all courts of aldermen and of common-council whenever he is in the city, and he attends the court of aldermen on all public occasions; he advises in all law cases relating to the corporation, and acts as counsel for the city in the courts in Westminster Hall. His salary is 1500l. per annum, in addition to which he receives some fees. He is the city's representative with all cases and briefs sent to him on behalf of the city, and has some other small emoluments.

The town-clerk is appointed by the common-council, and holds his office by a grant under the common-seal during the pleasure of the court. The tenure of all offices is held before the lord-mayor and aldermen, of the mayor's court, of the court of husting, of the courts of common-council and of common-hall, and of the sessions for conservation of the waters of the Thames and Medway. His duties are exceedingly various; they are such as are incident to the office of a secretary or town-clerk of a corporation, and need not be here detailed. In one year (1833) this officer attended 75 committees of aldermen and 562 committees of the common-council, in addition to his attendance at the common-council, and at common-hall. His emoluments consist of fees on licences, and on admissions to freedom or to different offices, estimated at 700l. per annum, and an allowance of 1500l. per annum for his clerks: besides these fees he has a salary of 1350l. per annum, and an allowance of 1500l. per annum for the maintenance of his clerk. He resides in apartments at Guildhall, free of rent and taxes.

It is not necessary to enter upon any detail of the nature of other offices held under the corporation. Their duties will generally be sufficiently indicated by their designation. In connexion with the king's officers, and the office of archdeacon, there are eight of which are practically extinct; and one other, that of parish clergymen, is not connected with the municipal institutions of the city. Except in cases where the honorary freedom of the City is presented by a formal act of the common-council, no person can become a freeman who has not been admitted into one of these companies; but when by birth, apprenticeship, purchase, or by becoming a member of a company, he has to pass the examination by the companies or guilds of which he is a member.

The following tables exhibit the names of the companies, stated in their order of precedence. The first twelve are called the Twelve Great Companies. The names in italics are those of extinct companies.

1. Mercers
2. Grocers
3. Drapers
4. Country Merchants
5. Goldsmiths
6. Skinners
7. Merchant Tailors
8. Haberdashers
9. Salters
10. Ironmongers
11. Vintners
12. Cloth-workers
13. Dyers
14. Brewers
15. Leather-sellers
16. Pewterers
17. Barbers
18. Cutlers
19. Bakers
20. Wax-chandlers
21. Tallow-chandlers
22. Armourers and Brasen Hall
23. Cutlers
24. Button-makers
25. Saddlers
26. Carpenters
27. Cordwainers
28. Painters-stainers
29. Curriers
30. Masons
31. Plumbers
32. Inholders
33. Founders
34. Founders
35. Cooks
36. Cooperers
37. Bricklayers
38. Bowyers
39. Fletchers
40. Blacksmiths
No company on the foregoing list, with the exception of the Carmen, is now exclusively composed of persons from the other towns; the greater part of the Apothecaries' company are in some way connected with the sale of drugs or the practice of medicine; and the greater part of the Stationers' company in the trade connected with the sale of books. The livery was in former times granted to all persons who held the degree of doctor of medicine or the title of apothecary, but the court of aldermen, passed in 1677, directs that "no person should be allowed to take upon himself the clothing (or livery) of any of the twelve companies, those which stand at the head of the foregoing list, unless he have been five years a freeman." The terms of livery vary with regard to different companies; but, with some few exceptions, it is open to any freeman to take up the livery of any company upon payment of its regular fees or fines. When the freedom is claimed on the ground of residence or servitude, the fines are usually limited to a few pounds; in other cases they vary from a few pounds to 200 guineas. These trading companies may be divided into three classes:

1. Those which exercise an efficient control over their trade, and in which class there are now only two companies, the Goldsmiths and the Apothecaries.
2. Those which have power to search for defective wares, or to prove or mark the article, or to execute any legislative enactment passed for regulating the trade. In this class there are now only the Apothecaries, Stationers, Gun-makers, and Founders, which last has the privilege of testing and marking weights.
3. Those into which persons carrying on certain occupations in the City are compelled to enter, which class includes all not enumerated in the first and second classes.

The management of the affairs of these companies is entrusted to certain senior members of the livery, who form what is commonly called "The Court of Assistants," and which usually consists of a master, a senior warden, a junior warden, and an infinite number of assistants, who succeed in due rotation to the higher offices of the court. Many of the companies possess extensive estates and other property, which is applied in part to the relief of decayed members of their own body and their families, and in part to more general purposes. An order of charity, the income of which is 1000 guineas, is annually paid to the poor. There are also trust funds for the purchase of lands and money, which have been appropriated by the donors to specific charitable objects, and, among such objects, to education. These companies are however no part of the corporation of the City, but have many of them their own charters of incorporation.

The City returns four members to the House of Commons. The right of election is in the freemen, being liverymen, and the inhabitant householders occupying dwellings of 10d. yearly value. The numbers of electors registered in these two classes in 1836 and 1857 were as follows:

<table>
<thead>
<tr>
<th>Class</th>
<th>1836</th>
<th>1857</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of householders</td>
<td>10,322</td>
<td>10,673</td>
</tr>
<tr>
<td>Freeman, being liverymen</td>
<td>9,184</td>
<td>9,005</td>
</tr>
<tr>
<td>Together</td>
<td>19,506</td>
<td>19,678</td>
</tr>
</tbody>
</table>

It is probable that some of the above are registered in their double capacity, and thus swell the apparent number of electors. The number that polled at the general election (on which occasion the same individual can appear in one character only) of 1837, which was severely contested, was—

<table>
<thead>
<tr>
<th>Class</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Householders</td>
<td>5,799</td>
</tr>
<tr>
<td>Freeman, being liverymen</td>
<td>5,778</td>
</tr>
</tbody>
</table>

Production.—That London is not commonly considered as a manufacturing town is owing to the more important aspects under which it presents itself, and not because of the absence of manufacturing industry. Manufactures of almost every kind are in fact carried on in the metropolis, and upon a scale of great magnitude; the best workmen in almost every branch of handicraft being certain of finding employment in London at the highest rate of wages. London was for a long time the only seat of the English broad silk manufacture. Some of the larger establishments have, however, been removed or extensively as formerly, and perhaps to a greater extent than ever, although Manchester, Macclesfield, and other towns have now become rivals in that branch of industry Linen, woollen, and cotton fabrics are not made in or about London.

The largest breweries, distilleries, and sugar-refineries in the kingdom are in the metropolis. The manufacture of metals in almost every branch is carried on to a vast extent. It is true that a great part of the harness and cutlery required for common purposes is made at Birmingham and Sheffield, which likewise supply the greater part of those articles required for exportation, because of the lower prices at which they can be there produced; but when precision and finish of workmanship, or fashion, or novelty, or quality, or luxury is desired, the London workmen are commonly employed. Almost every kind of machinery, from the smallest wheels required by the watch-maker to the most powerful steam-engines, are made in London. The making of gold, silver, and silver articles, of optical and surgical and other instruments, tools of the best quality, and musical instruments, gives employment to numerous hands. Ship-building, with all its accessories, rope-makers, mast-makers, block-makers, anchor-smiths, &c., has always been actively prosecuted. Many are also those who make the bone china, the earthenware, the tanneries, soap-manufactures, pottery, and dye-houses. Male and female clothing of all descriptions is made, not merely for the use of the inhabitants of the metropolis, but for the supply of wealthy persons in various parts of the kingdom, and even in foreign countries. The manufacture of lace is also the great workshop of literature, science, and the arts. The number of books printed and published in all other parts of England is small in comparison with what is produced in London. The number of men employed as compositors in London is estimated at 2000; there are also 500 apprentices, and 1000 pressmen, in addition to those who superintend the working of the great printing-machines, and whose number has not been ascertained. In the extent to which it has now reached, the mechanical part of the labour of producing books and periodical publications in London may well be considered a manufacture. It has been computed by a bookseller long conversant with one great branch of publication—that of periodical works—that the number of such publications issued weekly are in the last thirty years, or 1820 to 1847, has amounted to about 20,000,000 copies, of which about ten millions of copies are sold in the course of the year. Of newspapers there are eleven published daily, six in the morning and five in the evening. There besides, besides those forty-five published weekly, and thirty-eight which appear at other intervals of time, some three times and some twice a week; others on alternate weeks, and one or two monthly. The number of newspaper stamps issued for London publications between 1st September, 1833, and 15th March, 1834, was—
In the year ending 15th of September, 1836, 19,241,640
16th 1837 29,172,797
six months ending 15th March, 1838 14,438,556

The number of newspapers despatched from the General Post-Office in London in each of the three years ending 31st of October, 1835-6-7, was as follows:

<table>
<thead>
<tr>
<th>Year ending 31st October,</th>
<th>Year</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1835</td>
<td></td>
<td>14,068,406</td>
</tr>
<tr>
<td>1836</td>
<td>14,231,887</td>
<td></td>
</tr>
<tr>
<td>1837</td>
<td>14,438,556</td>
<td></td>
</tr>
</tbody>
</table>

The increase in the number of stamps and in the transmission by post during the last year above given, doubtless arises from the reduction of the stamp-duty to which newspapers are liable.

Consumption.—It is not possible to state with any pretensions to accuracy the amount of consumption in London, of any except a very few articles of general use. A considerable part of the foreign and colonial merchandise that passes every year through the custom-house of the port is forwarded into the interior of the country, and the same remark applies, though in a less degree, to the produce of London breweries, distilleries, tanneries, &c. A tolerably good test of the consumption of goods which was formerly supplied by ships and cattle sold in Smithfield market, although this would at all times be somewhat below the actual amount, because of the number of animals sold to butchers by the drovers on their road to the market; but of late years, since the improvement of turnpike-roads, and the consequent acceleration of travelling, and more especially since the adoption of steam-navigation, a great and continually increasing quantity of cattle and slaughtered meat is brought for sale to London, of which no account is taken. During all the colder months of the year, from October to April, almost every steam- vessel employed in the coasting-trade to London brings a supply to its markets. Oxen, sheep, and swine slaughtered on Saturday in Edinburgh are by this means brought and exposed for sale on the following Monday, and this branch of business is now followed with activity and regularity from almost every port of the kingdom within 500 miles of the metropolis, which has with it a constant steam communication. Live cattle, sheep, and pigs are brought by the same means during the summer months, and in considerable numbers. With this explanation the following table is offered, showing the average number of sheep and cattle sold in Smithfield market in each quinquennial period from 1730 to 1770, and the actual numbers so sold in each of the years from 1820 to 1838:

<table>
<thead>
<tr>
<th>Year</th>
<th>Sheep</th>
<th>Cattle</th>
</tr>
</thead>
<tbody>
<tr>
<td>1730</td>
<td>368,060</td>
<td>33,635</td>
</tr>
<tr>
<td>1735</td>
<td>393,946</td>
<td>97,518</td>
</tr>
<tr>
<td>1740</td>
<td>531,134</td>
<td>85,892</td>
</tr>
<tr>
<td>1745</td>
<td>655,516</td>
<td>80,876</td>
</tr>
<tr>
<td>1750</td>
<td>680,618</td>
<td>80,843</td>
</tr>
<tr>
<td>1755</td>
<td>616,750</td>
<td>91,699</td>
</tr>
<tr>
<td>1760</td>
<td>653,247</td>
<td>86,555</td>
</tr>
<tr>
<td>1765</td>
<td>632,812</td>
<td>84,244</td>
</tr>
</tbody>
</table>

The consumption of coal in London, in 1744, was 596,172 tons, and in 1735 reached 796,516.

The inhabitants of London draw nearly the whole of their supply of water, for manufacturing and household purposes, from the Thames and what is called the New River.

The daily consumption is stated by the_returns of the principal companies (eight in number) by which it is distributed, to amount to 20,927,550 imperial gallons. Of this quantity, the north-western district receives 9,000,727 gallons, the north-eastern 7,629,412 gallons, and the district on the south side of the Thames 4,257,411 gallons. The inhabitants of the suburban districts are partly supplied by a ninth company, from ponds at Hampstead and Highgate. The six companies which draw their supply from the Thames have large reservoirs, into which the water is pumped by powerful engines, and allowed to remain sufficiently long for the subsidence of the grosser impurities. Besides these sources of supply, London has the advantage of possessing, in many parts, springs of peculiarly fine water; and there is little doubt that the comparative state of healthfulness enjoyed by the inhabitants must be in a considerable measure attributable to the abundant supply of water and the excellent drainage.

The consumption of the metropolis, in regard to some principal articles which are under the management of the excise, may be stated with tolerable accuracy. The following statement gives the number of bushels of malt used by the London brewers, and the quantities of British and foreign spirits, tobacco, and snuff, which have been sent out with permits by the dealers or manufacturers, for consumption, in different years since 1825:

<table>
<thead>
<tr>
<th>Year</th>
<th>Malt used</th>
<th>Foreign British Latin &amp; Foreign Spirits, &amp;c.</th>
<th>Tobacco, Snuff, &amp;c.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1825</td>
<td>3,264,649</td>
<td>1,212,576</td>
<td></td>
</tr>
<tr>
<td>1826</td>
<td>3,107,648</td>
<td>1,206,380</td>
<td></td>
</tr>
<tr>
<td>1827</td>
<td>3,027,582</td>
<td>1,199,007</td>
<td></td>
</tr>
<tr>
<td>1828</td>
<td>3,024,382</td>
<td>1,199,324</td>
<td></td>
</tr>
<tr>
<td>1829</td>
<td>3,037,507</td>
<td>1,202,578</td>
<td></td>
</tr>
<tr>
<td>1830</td>
<td>3,074,282</td>
<td>1,205,800</td>
<td></td>
</tr>
<tr>
<td>1831</td>
<td>3,058,282</td>
<td>1,203,250</td>
<td></td>
</tr>
<tr>
<td>1832</td>
<td>3,000,282</td>
<td>1,197,000</td>
<td></td>
</tr>
<tr>
<td>1833</td>
<td>2,969,282</td>
<td>1,194,250</td>
<td></td>
</tr>
<tr>
<td>1834</td>
<td>2,934,282</td>
<td>1,189,500</td>
<td></td>
</tr>
<tr>
<td>1835</td>
<td>2,899,282</td>
<td>1,184,750</td>
<td></td>
</tr>
<tr>
<td>1836</td>
<td>2,864,282</td>
<td>1,180,000</td>
<td></td>
</tr>
<tr>
<td>1837</td>
<td>2,834,282</td>
<td>1,175,250</td>
<td></td>
</tr>
</tbody>
</table>

The following statement of the quantity of wheat and flour brought into the port of London in each year from 1820 to 1838 contains the only information that can be given concerning the consumption of bread in the metropolis, but must not be taken as an accurate test of that fact. In order to ascertain the greatest bulk to the amount of the markets, and to have an idea what is consumed at the different seasons, when grain is brought from abroad, much that enters the ports in the return of the port is afterwards transmitted to other parts of the country. In order to render the following figures as useful as possible in a comparative point of view, they are given as the additional rate of each season.

<table>
<thead>
<tr>
<th>Year ending</th>
<th>Wheat</th>
<th>Flour</th>
</tr>
</thead>
<tbody>
<tr>
<td>1820</td>
<td>757,894</td>
<td>444,257</td>
</tr>
<tr>
<td>1821</td>
<td>746,015</td>
<td>450,257</td>
</tr>
<tr>
<td>1822</td>
<td>749,015</td>
<td>450,257</td>
</tr>
<tr>
<td>1823</td>
<td>734,257</td>
<td>450,257</td>
</tr>
<tr>
<td>1824</td>
<td>734,257</td>
<td>450,257</td>
</tr>
<tr>
<td>1825</td>
<td>728,015</td>
<td>450,257</td>
</tr>
<tr>
<td>1826</td>
<td>728,015</td>
<td>450,257</td>
</tr>
<tr>
<td>1827</td>
<td>728,015</td>
<td>450,257</td>
</tr>
<tr>
<td>1828</td>
<td>728,015</td>
<td>450,257</td>
</tr>
<tr>
<td>1829</td>
<td>728,015</td>
<td>450,257</td>
</tr>
<tr>
<td>1830</td>
<td>728,015</td>
<td>450,257</td>
</tr>
<tr>
<td>1831</td>
<td>728,015</td>
<td>450,257</td>
</tr>
<tr>
<td>1832</td>
<td>728,015</td>
<td>450,257</td>
</tr>
<tr>
<td>1833</td>
<td>728,015</td>
<td>450,257</td>
</tr>
<tr>
<td>1834</td>
<td>728,015</td>
<td>450,257</td>
</tr>
<tr>
<td>1835</td>
<td>728,015</td>
<td>450,257</td>
</tr>
<tr>
<td>1836</td>
<td>728,015</td>
<td>450,257</td>
</tr>
<tr>
<td>1837</td>
<td>728,015</td>
<td>450,257</td>
</tr>
</tbody>
</table>
Some statement from the above quantities, but in what proportion cannot be stated, must be made before we can ascertain the actual consumption of the metropolis, because many persons who reside beyond its limits procure supplies from London traders. In the last fifty years, for instance, the trade in London proper has increased in such a way that the demand for meat, in particular, has outstripped the supply. This has led to a situation where the metropolis is partly dependent on external sources for its food supply.

Police—Until comparatively a recent period, the police of this metropolis was very defective, although the subject had engaged the attention of the public, and had been investigated by numerous committees of the House of Commons. Even as late as 1797, Mr. Colquhoun worked on the Police of the Metropolis, published by Mr. Colquhoun in 1797, revealed such dreadful scenes of depravity as powerfully engaged the public attention; and to that work may in a great measure be attributed the reforms which have been made. Among the salient features of the police when Mr. Colquhoun's work was published, it was not worse than it had been for centuries. As recently as the beginning of the eighteenth century it was highly dangerous to venture abroad, alone and unarmed, and there were the most frequented parts of the town; and in 1728 a plan was formed for robbing the queen in St. Paul's Churchyard, as she returned from supper in the city to St. James's; but the gang being engaged in robbing Sir Gilbert Heathcote, an alderman, on his return from the House of Commons, it appeared from the frequent mention of fact, and other facts recorded by Maitland and other historians, showing the height to which open violence was carried during those days. Fielding, writing in 1731, says: 'The great increase of robbery and murder in the last forty years has so diminished the shred of respect which society has been accustomed to deserve some attention. In fact, I make no doubt but that the streets of this town, and the roads leading to it, will shortly be impasseable without the utmost hazard; nor are we threatened with seeing less dangerous gangs of robbers among us than those which the Italian call the banditti. What indeed may not the public apprehend when they are informed, as an unquestionable fact, that there are at this time a great gang of robbers, whose number falls little short of a hundred, who are incorporated in one body, and are under the command of one master mind, and the punishment of robbery into a regular system? There are of this society men who appear in all disguises and mix in most companies. Even so recently as the end of the last century there were many places in the metropolis where swarms of the most deadly cutthroat and desperadoes have perfect security from the police, which dared not disturb them. Among these places of resort were some, the names of which have been handed down to us as infamous for the crimes which were perpetrated in them. Open violence is now found at an end, and in the suburbs an efficient police ensures personal safety at all hours of the night. The vice which still exists is of a less obtrusive character, and crimes are now for the most part confined to depredations on property. The regulations for the future are such as to prevent the system, if not during the last forty or fifty years, but it is during the latter half of that period in which the amendment has been most apparent. The evidence given before a committee of the House of Commons, in 1816, still detailed scenes and circumstances of villainy which it is hoped will long to be witnessed. The establishment of the metropolitan police force, under an act of parliament in 1829, has been mainly instrumental in producing this improvement. The regulations for its management are calculated for the prevention rather than the punishment of crime, it having been among the gravest charges made against the system which it superseded that many were inward in crime until the length to which they proceeded produced the offer of rewards for their apprehension.

The police force is under the management of two commissioners, who are in direct communication with the secretary of state for the home department; under the commissioners are 17 superintendents, 70 inspectors, 342 sergeants, and 2968 constables. The district under their care extends from River Bridge on the east, to the Humber on the west, and from Highgate on the north, to Streatham and Norwood on the south, excluding the city of London. The population of this district, at the census of 1831, was 1,483,013 souls, and the rental of houses assessed for the relief of the poor within the same, in 1837, amounted to £1,617,113l. per annum. The constables and officers must be men of good character, who can read and write, and who at the time of their appointment are not more than thirty-five years of age. They wear a uniform dress, and are all young men a goodly-looking body of men. The whole district is parcelled out into seventeen divisions, to each of which one superintendent and an adequate number of sergeants and constables are appointed; and it is expected that each constable will exert himself to acquire a complete personal knowledge of his district. The system of responsibility is through the force, the subject of the weekly watch, for which it was substituted. The total expenditure, in the year 1837, amounted to £1,617,113l. per annum. For this purpose, £2,465l. 13 5d., the inhabitants have the benefit of an efficient daily police in exchange for an inefficient nightly watch, which was frequently entrusted to infirm old men. The expense chargeable on the parish is limited to an assessment of eightpence in the pound on the rental, and all beyond this is defrayed from the public purse. Three-fifths of the police expense are borne out of the parish rates, limited as above mentioned; and the remaining one-fourth is paid by the Treasury. The efficiency of the metropolitan police may in part be seen from the statement of the number of persons taken into custody by its constables for the year since it came fairly into operation, and which were:

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>1831</td>
<td>27,484 of whom 3123 were drunk</td>
</tr>
<tr>
<td>1832</td>
<td>22,463</td>
</tr>
<tr>
<td>1833</td>
<td>21,748</td>
</tr>
<tr>
<td>1834</td>
<td>21,748</td>
</tr>
<tr>
<td>1835</td>
<td>21,748</td>
</tr>
<tr>
<td>1836</td>
<td>21,748</td>
</tr>
<tr>
<td>1837</td>
<td>21,748</td>
</tr>
</tbody>
</table>

The total number of persons charged with offences by the metropolitan police force in the year 1838 was 39,703, of whom 48,742 were accused of petty offences, and the remaining 22,906 in crimes usually tried before a jury. Of these numbers 20,007 in the first class, and 14,892 in the second class, or about one-half, were discharged on a hearing by the magistrates, only 2931 were committed for trial, 15,876 were discharged on payment of fines—chiefly cases of drunkenness, and the remainder sentenced. Of the old nightly watch, by the magistrates to various short periods of imprisonment.

Among the persons committed for trial, 5 were accused of murder, 16 of manslaughter, and 88 of burglary and house-breaking: the others were charged with larcenies, breaches of the peace, and other offences of a similar nature.

It will be seen that a large proportion of the persons included in these numbers were taken into custody by reason of their being drunk, in condition they hold out temptation to dishonest persons, and require to be protected.

It has been mentioned that this police force has no authority within the City. The day and night police in the City were till lately established on two systems wholly unconnected with each other. The day police was under the control of a committee of the lord of the island, and its operations embraced the whole city without any reference to its division into wards, while the duty of providing the nightly watch was left to the ward authorities, each ward supporting an independent establishment of its own. The day and night police is now consolidated, and consists of—

<table>
<thead>
<tr>
<th>Rank</th>
<th>Number of Persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Superintendent</td>
<td>1</td>
</tr>
<tr>
<td>Inspectors</td>
<td>12</td>
</tr>
<tr>
<td>Sergeants</td>
<td>50</td>
</tr>
<tr>
<td>Constables</td>
<td>438</td>
</tr>
</tbody>
</table>

It is organised as nearly as possible on the plan of the metropolitan police, the City being divided for this purpose into 6 districts. There are besides, connected with the business of the police, two men specially called the police officers, and three men placed at the Mansion-House and Guildhall: the whole of this force is directed by the superintendent. Its duties are confined to the north side of the Thames, Southwark being under the metropolitan force.
There are further provisions for the peace of the metropolis, nine police offices, each of which has attached to it three magistrates. The offices are—
Bow Street, having attached to it 10 officers.
Marble Arch, 6 officers.
Marylebone, 7 officers.
Hatton Garden, 6 officers.
Worship Street, 6 officers.
Newington Green, 6 officers.
Union Hall, 8 officers.
Thames Police, 6 officers.
In addition to this there is a River Police attached to the Thames Police Office, and employing 29 Thames police boats, and 513 boats, with 3,412 casks, the establishment is 51,724. 52. 5d. per annum. The horse patrol was attached to the office in Bow Street until October 1836, when it was made part of the metropolitan police force and comprised a conductor, 4 inspectors, and 65 patrols. Their sphere of action is the frequented roads around the metropolis. Their respective beats and the hours of visiting different localities are continually being changed, according to the directions of the superintendents of police.

The sessions of the peace for the city of London are held eight times in the year. The judges are the lord mayor, aldermen, and recorder, any four of whom form a quorum, but the recorder is the acting judge. Before the establishment of the Central Criminal Court the jurisdiction in all civil suits is vested in the lord mayor, aldermen, and others by the House of Commons, for the time, to try all suits of 40 shillings, but in practice all crimes (except treason) which were capital by common law and all which have been called felonies by statute were tried at the Old Bailey sessions. The Central Criminal Court has twelve sessions a year, and was established for the trial of offences committed in the city of London, the county of Middlesex, and those parts of the adjoining counties which lie within the parishes of Barking, East Ham, West Ham, Little Ilford, Lower Leyton, Wanstead, St. Mary Woodford, and Chingford. The trials are conducted by Mr. Justice Lee, Mr. Justice Green, Mr. Justice Woolwich, Mr. Justice Elton, Mr. Justice Deptford, Mr. Justice Sheriff, and Mr. Justice Waddington. The numbers in the district are considerable, and the sessions are crowded together in the wards, yards, and sleeping cells of this prison without any possibility of classification, and, as we find it stated in the last Report of the Inspectors of Prisons, 'The Giltspur-Street Compter continues a wretched prison, with so many compartments that it is impossible to edit it; the prisoners are left together in large numbers in idleness and unrestrained communication during the whole 24 hours.' The number of prisoners confined there in the course of the year 1837 was 922 males and 130 females; the greatest number at any time was 96 males and 10 females.

The Bridewell prison is under the jurisdiction of the governors of Bridewell and Bethlem Hospitals, and is used for the reception of persons summarily convicted by the lord mayor or sitting aldermen. The prisoners are for the most part petty offenders, and vagrants. Refractory apprentices brought before the aldermen or chamberlain of London are also sent here to solitary confinement for short periods. The prisoners were formerly employed, as a punishment, in beating hemp, which occupation has given place to the modern invention—the wheel. The inmates are classified, and the silent system has been adopted. There were confined in this prison at the year ending Michaelmas, 1837, 776 males and 325 females; the greatest number at any one time was 205 males and 10 females; the current expenses for the year amounted to 13.15.1d.

The new prison, Clerkenwell, is the general receiving prison of Middlesex for offenders committed, either for examination before the police magistrates, for trial at the Central Criminal Court, or for any other cause, for the purpose of punishment. The prison is further empowered to receive persons for offences committed on the high seas and other places within the jurisdiction of the admiralty of England, for which separate sessions used formerly to be held by the judges of the admiralty court. The great bulk of the cases brought before the Central Criminal Court are all kinds, and accompanied by violence. The frequency of the sessions is found to be a great improvement; persons who may be wrongfully accused are speedily released, and the guilty are more quickly brought to justice.

Prisoners are the confinements of offenders within the metropolis. There are—
1. The Gaol of Newgate
2. The Giltspur-Street Compter
3. The Bridewell Prison
4. The New Prison, Clerkenwell, Middlesex County Gaol
5. The Old Bailey, County House of Correction
6. The Westminster, County Bridewell
7. The Horsemonger Lane, Surrey County Gaol
8. The Borough Compter
9. The Penitentiary at Millbank,
The light thus provided may be inferred from the numerous deprivations then committed in the city by highwaymen, who, riding into the streets after nightfall, perpetrated their outrages with impunity. This evil rose to such a height that government deemed it necessary to offer a reward of 100l., a large sum in those days, for the apprehension of every highwayman in the city of London or within five miles of the same. After these evils had been endured for some years a further and more effectual improvement was not long delayed, and it was enacted that an act of parliament was procured in 1736, authorising the corporation to set up as many gas lamps as should be necessary, and to keep them lighted throughout the year from the setting to the rising of the sun. To defray the cost, the corporation was empowered to levy an annual rate upon every householder proportioned to the value of his house. This system was found to answer well, and continued in operation until the introduction of gas-lighting. During the 70 years that preceded London enjoyed the reputation of being the best lighted city in Europe, but no person, unless he can remember the nightly appearance of the metropolis previous to the adoption of gas lighting, can be sufficiently aware of the value of the improvement, nor of the degree in which the whole city was illuminated as a matter of police. The lamps are now lighted by various joint-stock companies, possessing large capitals, and which are content to derive a low rate of remuneration for the lighting of street-lamps, in return for the opportunity of supplying shops and private houses. In this way largely liberalised, these gas companies received a charter of incorporation in 1812; it has three stations, one in the Horseferry-road, Westminster, another in Brick Lane, Old Street, and the third in the Curtain Road, Shoreditch. Several other companies have been formed in the meantime, most of these, the City of London, the Imperial, the British, the Independent, and the Equitable gas companies; these supply among them more than 60,000 lights over a field extending from Bow on the east to Brentford on the west, and from the Thames to the houses of a number of the socalled aggregate incomes for these lights, derived from parishes and private consumers, exceed a quarter of a million of money per annum: of this sum the corporation of London pays about 10,000l.

Sewers.—The sewers of the metropolis and adjacent districts, comprehending a circle of ten miles, measured from the Post-Office, are divided into seven trusts, and placed under the management of as many boards of commissioners, viz.:—

1. The City and Liberties of Westminster.
2. Holborn and Finsbury division.
4. The City of London.
5. The Tower Hamlets division.
6. From the river Ravensbourne, in Kent, to the river Mole, in Surrey.
7. Regent Street division.

There are no means of ascertaining the aggregate length of the sewers throughout these divisions. Those under the commissioners for the City of London are about 15 miles in extent, and form only a small part of the drainage of the whole metropolis. Sewers were first constructed in London to the degree of their necessity under an act (6 Hen. VI., c. 2) passed in 1428. This act was amended by parliament in the reign of Henry VIII.; and the law relating to sewers, passed in the twenty-third year of that reign, is still substantially adhered to. Two of the commissioners, the fifth and sixth of the above list; the other five boards are regulated by local acts. The expenses attending upon the construction and management of sewers in the different districts are repaid by means of rates levied from the householders under the direction of the several boards of commissioners. In the City of London the rate cannot exceed 4d. in the pound on the rental. Much dissatisfaction existed some years ago in regard to the efficiency of the sewerage in different parts of the metropolis. Drains which had been constructed on a scale inadequate to the drainage of a district in former times were rendered by degrees wholly inadequate, through the increase of the population. Much of late years has been done to meet this objection; the subject has been investigated by a Committee of the House of Commons; appointed in 1834; and although there are still some obscure corners where the health and comfort of
an organized force of this description must be apparent.

We have no record of the number of fires that occurred in London in the metropolis, but our record has since been kept from which the following particulars are taken:

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Wholly</th>
<th>Severely</th>
<th>Slightly</th>
<th>Number of Fires in which Number of Lives were Lost</th>
<th>Lives Lost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1831</td>
<td>269</td>
<td>184</td>
<td>2,476</td>
<td>269</td>
<td>184</td>
</tr>
<tr>
<td>1833</td>
<td>402</td>
<td>212</td>
<td>193</td>
<td>212</td>
<td>193</td>
</tr>
<tr>
<td>1840</td>
<td>571</td>
<td>215</td>
<td>136</td>
<td>215</td>
<td>136</td>
</tr>
<tr>
<td>1845</td>
<td>501</td>
<td>212</td>
<td>136</td>
<td>212</td>
<td>136</td>
</tr>
</tbody>
</table>

Revenues, &c.—The revenue of the corporation of the City of London is derived from various sources, the principal of which are rents, premiums, and market-tolls. The receipts and expenditure for the years 1831 and 1832, as given in to the Municipal Corporation Commissioners, were as follows:

<table>
<thead>
<tr>
<th>Item</th>
<th>1831</th>
<th>1832</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rents and quit-rents</td>
<td>45,962 8</td>
<td>45,938 8</td>
</tr>
<tr>
<td>Hire and navigation of Thames</td>
<td>870,898 8</td>
<td>870,898 8</td>
</tr>
<tr>
<td>Flora for leases</td>
<td>1,117</td>
<td>1,117</td>
</tr>
<tr>
<td>Bills, bonds, and securities</td>
<td>851,898 8</td>
<td>851,898 8</td>
</tr>
<tr>
<td>Brokers' rents and admissions</td>
<td>3,072</td>
<td>3,072</td>
</tr>
<tr>
<td>Foremen's and workmen's wages</td>
<td>2,072</td>
<td>2,072</td>
</tr>
<tr>
<td>Sales of coal, &amp;c.</td>
<td>3,072</td>
<td>3,072</td>
</tr>
<tr>
<td>Cash in hand</td>
<td>26,735 8</td>
<td>26,735 8</td>
</tr>
<tr>
<td>Freedoms and annuities</td>
<td>1,117</td>
<td>1,117</td>
</tr>
</tbody>
</table>

The first item in the above statement of expenditure requires some explanation. The court of the lord-mayor and aldermen of London had from time immemorial acted as the guardians of the children of deceased deserters and as trustees of their property. The corporation having advanced large sums to the government upon the security of Exchequer Tally, which were totally lost to them upon the shutting of the Exchequer in 1672, this circumstance, with the losses occasioned by the Fire of London, occasioned a deficiency in the sum owing to its orphans and other creditors at £747,421. An act was accordingly passed, on the 6th and 6th of Will. and Mary, c. 101, enacting:

'An Act for the relief of the Orphans and other Creditors of the City of London,' in the preamble of which the above-mentioned deficiency is attributed to 'sundry accidents and public calamities,' which shall amount to the sum of the deficiency upon the above sum, which payment of interest for ever was declared to be in full satisfaction of the debt. The fund created consisted of a charge of 800l. per annum on the lands and revenues of the city; the profits of auctions, or the sale of water in the city of London, per annum to be levied by the mayor and the chamber householders: 60l. per annum rising to a lease granted of the right of lighting lamps, as elsewhere explained; a tax of 2s. 6d. on each apprentices, free-freeman; and of 9d. upon every person admitted to the freedom of the city; 4s. per ton upon wine imported into London; and 4d. per child upon the mate of coals; and
company, to consist of a governor, deputy-governor, and 24 assistants; that the governor and five assistants should be citizens of London; that the recorder should be another assistant; and that the deputy-governor and the rest of the assistants should be citizens of London, to be elected annually by the common-council. The Society, being thus appointed, was soon after put in possession of the estates. The sum subscribed for the purpose amounted eventually to £30,000, and was chiefly formed into seven mortgage bonds by the most wealthy of the London companies. [LONDONERRY.] The Society was incorporated on the 29th of March, 1619, and the town of Coleraine and the county of Londonderry were granted to the Society and their successors for ever. By a charter granted by Charles II. in 1662, power was given to the common council of Londonderry to make bye-laws for the government of the city, but to give them validity it was necessary that these bye-laws should be confirmed within a limited time by the Irish Society. The acts of the Society were printed and laid before the court of common-council. The estates have been the subject of a suit in chancery, which has confirmed the title of the corporation to all except the lands that had been granted to the [Punishment.—Although employment may be easily obtained in London by persons in health, and adequate wages are paid, a considerable proportion of these wages are spent in intemperance, which adds largely to the amount of sickness or idleness which is due to the same causes. Under the orders of the commissioners for executing the act of 1833 for the amendment of the law relating to the poor, the metropolis, so far as it has hitherto been brought under the provisions of the new poor law, is divided into 26 districts or unions, as enumerated below, each of which is managed by a board of guardians, elected by the rate-payers of every parish within the union. Some of these impending acts are so comprehensive that the government is in a state of suspension. The divisions, the amount of their population in 1831, the number of guardians elected in each, and the sums expended for relief of the poor in the year ending 31st March, 1838, are as follows:


<table>
<thead>
<tr>
<th>District</th>
<th>Guardians</th>
<th>Year ending 31st March, 1838</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holborn Union</td>
<td>42,649</td>
<td>20 11,527</td>
</tr>
<tr>
<td>St. George's in the East</td>
<td>38,505</td>
<td>18 11,683</td>
</tr>
<tr>
<td>St. Leonard's, Shoreditch</td>
<td>68,564</td>
<td>21 17,318</td>
</tr>
<tr>
<td>St. Martin in the Field</td>
<td>23,729</td>
<td>21 9,318</td>
</tr>
<tr>
<td>St. Matthew, Bethnal Green</td>
<td>36,480</td>
<td>21 14,949</td>
</tr>
<tr>
<td>St. Pancras</td>
<td>103,548</td>
<td>19 19,921</td>
</tr>
<tr>
<td>Strand Union</td>
<td>41,820</td>
<td>21 14,494</td>
</tr>
<tr>
<td>Bermondsey</td>
<td>29,741</td>
<td>18 10,251</td>
</tr>
<tr>
<td>St. George, Southwark</td>
<td>39,769</td>
<td>18 16,938</td>
</tr>
<tr>
<td>Camberwell</td>
<td>29,231</td>
<td>15 7,944</td>
</tr>
<tr>
<td>Lambeth</td>
<td>87,856</td>
<td>20 24,598</td>
</tr>
<tr>
<td>Newington</td>
<td>44,326</td>
<td>18 9,599</td>
</tr>
<tr>
<td>Rotherhithe</td>
<td>12,673</td>
<td>15 5,261</td>
</tr>
<tr>
<td>St. Olave, Southwark</td>
<td>24,721</td>
<td>15 5,857</td>
</tr>
<tr>
<td>St. Saviour, Southwark</td>
<td>31,711</td>
<td>17 11,185</td>
</tr>
<tr>
<td>Stepney</td>
<td>72,446</td>
<td>23 26,426</td>
</tr>
<tr>
<td>Poplar</td>
<td>25,066</td>
<td>15 10,519</td>
</tr>
<tr>
<td>Edmonton</td>
<td>46,510</td>
<td>38 15,164</td>
</tr>
<tr>
<td>City of London (89 in total)</td>
<td>15 43,950</td>
<td></td>
</tr>
<tr>
<td>Whitechapel</td>
<td>64,141</td>
<td>25 16,426</td>
</tr>
<tr>
<td>Greenwich</td>
<td>62,009</td>
<td>20 15,503</td>
</tr>
<tr>
<td>Lewisham</td>
<td>18,426</td>
<td>20 5,993</td>
</tr>
<tr>
<td>Kensington</td>
<td>75,355</td>
<td>25 16,293</td>
</tr>
<tr>
<td>Hackney</td>
<td>34,927</td>
<td>20 8,352</td>
</tr>
<tr>
<td>East London</td>
<td>38,311</td>
<td>20 9,233</td>
</tr>
<tr>
<td>West London</td>
<td>27,825</td>
<td>20 17,922</td>
</tr>
</tbody>
</table>

Begging is followed as a trade or profession in the metropolis perhaps more systematically than in any other city. The subject has at various times attracted the attention of the legislature, and considerable steps have been taken by it by the Reports of committees of the House of Commons. In one of these Reports it was stated on evidence that two houses in St. Giles's parish (which is the principal resort of beggars) are frequented by considerably more than 200 persons, who hold in them a kind of element who are not of their profession are excluded; that children are
LON 126 LON

Let out by the day, and that the hire paid for deformed children is sometimes as high as four shillings per day, and that a respectable profession is kept in these districts. Children are instructed in the arts necessary to their success as beggars. It has been stated that the number of professional beggars in and about London amounts to 15,000, more than two-thirds of whom are Irish; but this statement rests on the foundation of opinions that have been variously considered as too high or too low, according to the views which different persons take of the condition of society. It is asserted that few of the street-beggars who pretend to be husband and wife are really married. The Mendicity Societies were formed for the purpose of remedying this evil, by affording relief to really deserving persons, and by exposing and punishing the professional beggar and impostor. This Society has an office and establishment in Red Lion-square, Holborn, and has, since its formation, been instrumental in bettering the condition of many thousands, being 18 per cent. of the total number of beggars in London, and 15 per cent. of the total amount of their deposits. It is supposed that the class of domestic servants, who are very numerous in London, forms by far the largest proportion of depositors in savings' banks.

Charities, Hospitals, &c.—The public charities and hospitals within the limits of the metropolis are very numerous, and many of them are richly endowed. The Royal hospitals of Greenwich for seamen and of Chelsea for soldiers are national charities, and whose maintenance is independent of public support. The revenues of Greenwich Hospital are derived partly from estates in Cumberland, on which lead-mines are profitably worked, and partly from a payment of sixpence per month stopped from the wages of seamen, and in time of war from unclaimed prize-money. In Greenwich Hospital there are usually about 3000 maintained and superannuated seamen, who are boarded, lodged, and clothed, and provided with each one shilling per week pocket-money. There are besides about 32,000 out-pensioners receiving various allowances from 3d. to 1s. 6d. per week. The officers of state are nominally governors of the hospital; but it is really managed by twenty-four directors, a governor, and a lieutenant-governor. Chelsea Hospital, which is for the army, accommodates about 400 in-pensioners, and a great number of other pensioners. The expenses are defrayed by means of contributions stopped from the pay of every officer and private soldier in the army; the deficiency, if any, being provided for by parliament. The establishment is under the direction of commissioners, a governor, and a lieutenant-governor. Connected with these two hospitals are the Royal Naval Asylum at Greenwich and the Royal Military Asylum at Chelsea, the former for the education and maintenance of 600 boys and 200 girls, the children of seamen of the Royal Navy; the latter for giving the same advantages to the children of soldiers.

The charities connected with the corporation of London are Christ's Hospital, better known as the Blue-coat School, Bridewell and Bethlem Hospitals, St. Bartholomew's Hospital, St. Thomas's Hospital, all of which were founded by Edward VI. Christ's Hospital contains about 1200 boys, to whom good classical, commercial, and mathematical instruction is given. They are also boarded and clothed: the annual expenses of the establishment amount to 20,000l. The lord-mayor and corporation of London are the directors of the hospital; there are about 220 governors, each of whom, at his election to the office, presents 400l. to the institution. The children are admitted on the nomination of the directors and governors, who extend the privilege in rotation. St. Bartholomew's Hospital, which is under the management of the same board of governors as Bethlem Hospital, is now used only as a prison, under which head it is noticed. Bethlem Hospital, first erected in 1575 in Moorfields, was removed in 1682 to Bank Corner, where it is now situated. It is a hospital for the reception and treatment of insane patients, of whom about 200 are constantly accommodated. This has lately been found inadequate to the wants of the poor who are thus afflicted in the city. London, and the building is at this time (January, 1839) in process of repair. As to St. Bartholomew's Hospital, see Bartholomew's Hospital.

St. Thomas's Hospital, in Southwark, is governed by the lord-mayor, aldermen, and 12 common-councilmen of London, and is provided by funds of 50,000l. and upwards. It is open to receiving and usually contains near 500 patients; besides whom it affords relief to a considerable number of out-patients, who receive advice and medicines gratuitously. There is a medical school attached to the hospital, attended by students dependent on the corporation of London are the corporation of London.

Guy's Hospital, St. Thomas's Street, Southwark, founded 1721, and richly endowed by Mr. Guy. A bequest of 200,000l. was made to its funds in 1829 by Mr. Thomas Baring, the donations of Mr. Guy being 200,000l., and medical aid gratuitously afforded to out-patients.

London Hospital, Whitechapel Road, established 1745, and supported by voluntary contributions and subscriptions, gives relief to upwards of 2000 patients in the course of the year, about 4000 being taken in, and 3200 discharged through accidents among the shipping on the river and in the docks, and the various manufactories in the eastern part of London. It has three physicians, three assistant physicians, three surgeons, and three assistant-surgeons.

Westminster Hospital, King William Street, Strand, established in 1818, erected in 1831, is supported by voluntary subscriptions. It has an establishment of three physicians and two surgeons.

The University College Hospital, built on ground opposite and belonging to University College, was opened in November, 1834. It contains beds for 300 patients, and is the hospital for the medical school of the College.

All the above hospitals have medical schools attached to them.

Saint Luke's Hospital, City Road, instituted in 1751, for the reception of poor insane persons, being parish paupers or others. With each pauper-patient a sum of 4l. must be paid by the parish, and 2s. 6d. per week by the patient, which is returned in case of death, or if the patient is discharged within a month. The hospital will accommodate 300 patients. The affairs are managed by a body of twenty guineas and upwards to the funds.

Small-pox Hospital, St. Pancras, instituted 1746, is supported by voluntary contributions. Since 1799 vaccination has been adopted in this hospital, and upwards of 100,000 persons have been vaccinated by its medical officers. There is also a "Necessaries Valetudinary Room or Waiter's Place, having in connection with it eleven 'vaccinating surgeons' residing in different parts of London and its environs.

London Fever Hospital, St. Pancras, instituted 1754, the Small-pox Hospital, receives at all hours cases of typhus and scarlet fever without recommendation. It is supported by
The Westminster School, established by Queen Elizabeth in 1590.
St. Paul's School, founded by Dean Colet in 1510.
Merchant Taylors' School, established 1561.
St. Olave's Free Grammar-School, founded by Queen Elizabeth.
Mercers' Free Grammar-School.
St. Saviour's Grammar-School, founded 1662.
British and Foreign School Society.
National Society for the Education of the Poor.
Society for promoting Christian Knowledge, instituted in 1699.

The educational establishments of a public character, but not charitable, are:

University College, London.
King's College, London.
School of the Corporation of the City of London.
The Charter House, founded by Thomas Sutton in 1611, is an hospital, which has a school attached to it.

The University of London, incorporated in 1837, consists of a chancellor, vice-chancellor, and thirty-six fellows, who are empowered to confer degrees in arts, law, and medicine. The university chambers are at present in Somerset House. It is principally supported by grants from government. The first examination for matriculation in arts took place in November, 1838. The first examination for degrees will take place in May or June, 1839.

Of societies and establishments connected with science, literature, and the arts, the following are the principal:

The British Museum.
The Royal Society, incorporated 1663.
The Society of Antiquaries, founded 1772.
The Society for the Encouragement of Arts, &c., established 1734.
The Royal Academy of Arts, incorporated 1765.
The Royal Institution, incorporated in 1800.
The Linnean Society, established 1802.
The British Institution, established 1805.
The Geological Society, established 1813.
The Society for the Diffusion of Useful Knowledge, established in 1826, incorporated in 1832.
The Horticultural Society, established 1808.
The Mechanics' Institute, in Southampton Buildings, established in 1823.
The Royal Astronomical Society, established in 1820.
The Royal Geographical Society, established 1830.
The Royal Asiatic Society, established 1823.
The Zoological Society, established 1828.
The Architectural Society, established 1831.
The Royal Society of Literature, established in 1820.
The Society of Civil Engineers, established in 1828.
The Statistical Society, established 1834.
The Royal Institute of British Architects, established 1835; incorporated by charter 1837.
The London Institution, established 1806.
The Royal Geographical Society, established 1830.
The Royal Asiatic Society, established 1823.
The Zoological Society, established 1828.
The Architectural Society, established 1831.
The Royal Society of Literature, established in 1820.
The Society of Civil Engineers, established in 1828.
The Statistical Society, established 1834.
The Royal Institute of British Architects, established 1835; incorporated by charter 1837.
The London Institution, established 1806.

Sion College, incorporated 1630.
Entomological Society, instituted in 1806.
Phrenological Society.

City of London Library and Scientific Institution.
College of Physicians, established in 1518.
College of Surgeons.
Company of Apothecaries.

And several medical societies.

Of late years numerous literary and scientific institutions have been established within the metropolis: their general objects are the same, being the communication of useful knowledge by means of lectures, classes, the formation of libraries, and collections of various kinds.

The principal places of public amusement in the metropolis are:

The Queen's Theatre (Opera House), Haymarket.
The Theatre Royal, Drury Lane.

— Covent Garden.

The English Opera House, Strand.
The Royal Adelphi Theatre, Strand.
The Olympic Theatre, Wych Street.
The St. James's Theatre.
The Surrey Theatre.
The Victoria Theatre, Waterloo Road.  
The City of London Theatre, Norton Folgate.  
The Pavilion Theatre, Whitechapel Road.  
The Garrick Theatre, Goodman's Fields.  
Aixley's Improvisations.  
Sadler's Wells Theatre.  
The Royal Fitzroy Theatre, Tottenham Court Road.  
Vauxhall Gardens.

The places of general recreation are:—St. James's Park, Hyde Park, Kensington Gardens, the Regent's Park, and Greenwich Park, on the banks of the Thames at Greenwich.  
With the exception of Greenwich Park, they may all be easily visited in London, and are easily accessible to all the inhabitants of the metropolis.

Trade.  
—The accidental burning of the Custom House of London, in February, 1814, in which the greater part of the trade records of the port and kingdom were destroyed, renders it impossible to give in complete account of the commerce of the metropolis for any preceding period.  
The relative proportion of the foreign and colonial trade enjoyed by its merchants during the present century will be sufficiently shown by the following statement of the net amount of customs duty, collected not different times from the year 1815, in London and in all the various ports of the United Kingdom, including London:—

<table>
<thead>
<tr>
<th>Year</th>
<th>London</th>
<th>United Kingdom</th>
</tr>
</thead>
<tbody>
<tr>
<td>1815</td>
<td>45,556</td>
<td>20,551</td>
</tr>
<tr>
<td>1816</td>
<td>43,589</td>
<td>19,958</td>
</tr>
<tr>
<td>1817</td>
<td>46,712</td>
<td>21,107</td>
</tr>
<tr>
<td>1818</td>
<td>52,980</td>
<td>24,833</td>
</tr>
<tr>
<td>1819</td>
<td>47,078</td>
<td>21,994</td>
</tr>
<tr>
<td>1820</td>
<td>50,346</td>
<td>24,732</td>
</tr>
<tr>
<td>1821</td>
<td>48,192</td>
<td>23,903</td>
</tr>
<tr>
<td>1822</td>
<td>49,420</td>
<td>24,375</td>
</tr>
<tr>
<td>1823</td>
<td>50,010</td>
<td>24,618</td>
</tr>
<tr>
<td>1824</td>
<td>50,007</td>
<td>24,614</td>
</tr>
<tr>
<td>1825</td>
<td>46,868</td>
<td>22,948</td>
</tr>
<tr>
<td>1826</td>
<td>45,000</td>
<td>22,250</td>
</tr>
<tr>
<td>1827</td>
<td>45,000</td>
<td>22,250</td>
</tr>
</tbody>
</table>

It appears from these figures, which are taken from official returns, that the payments into the Exchequer by the Custom House of London amount to as much as the net receipts of all the other customs in Great Britain and Ireland.  
It was expected that the opening of the China trade, and the consequent participation of other ports in the tea trade, which had previously been monopolized by London, would have considerably altered the above proportions; but it will be seen that this has not taken place; in fact, the buyers of this article of general consumption still resort to London as the market in which they can select their purchases to the greatest advantage.

The number of ships, with the amount of tonnage, that have frequented the port, give a better idea of the actual amount of its trade than is afforded by revenue accounts, which must vary with the fiscal regulations of the country, and which exclude altogether goods that enter the port and are re-exported or sent coastwise under bond to other ports in the kingdom.  
The shipping that cleared outwards from ports in 1753 consisted of:—

<table>
<thead>
<tr>
<th></th>
<th>Ships</th>
<th>Tons</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>British</td>
<td>1,219</td>
<td>153,969</td>
<td></td>
</tr>
<tr>
<td>Foreign</td>
<td>150</td>
<td>26,284</td>
<td></td>
</tr>
</tbody>
</table>

1369 180,230

In 1792 the trade was more than double what it was in 1753.  
The clearances from the ports were in that year:—

<table>
<thead>
<tr>
<th></th>
<th>Ships</th>
<th>Tons</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>British</td>
<td>1,118</td>
<td>130,174</td>
<td></td>
</tr>
<tr>
<td>Foreign</td>
<td>504</td>
<td>88,325</td>
<td></td>
</tr>
</tbody>
</table>

1552 399,049

The shipping belonging to the port in the same year (1792) was:—

<table>
<thead>
<tr>
<th></th>
<th>Ships</th>
<th>Tons</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>London under 200 tons burthen</td>
<td>1,109</td>
<td>94,922</td>
<td></td>
</tr>
<tr>
<td>between 200 and 300 tons burthen</td>
<td>368</td>
<td>94,922</td>
<td></td>
</tr>
<tr>
<td>over 300 and 500 tons</td>
<td>26</td>
<td>94,922</td>
<td></td>
</tr>
<tr>
<td>over 500 and 750 tons</td>
<td>24</td>
<td>94,922</td>
<td></td>
</tr>
<tr>
<td>over 750</td>
<td>17</td>
<td>94,922</td>
<td></td>
</tr>
</tbody>
</table>

1769

<table>
<thead>
<tr>
<th></th>
<th>Ships</th>
<th>Tons</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Indiamens</td>
<td>293,061</td>
<td></td>
<td>18,168</td>
</tr>
</tbody>
</table>

Total tonnage: 374,241

The number and tonnage of vessels, British and foreign, that entered the port from foreign parts in each year from 1820 to 1837, will show how greatly its foreign commerce has increased during the last half century:—

<table>
<thead>
<tr>
<th>Year</th>
<th>Ships</th>
<th>Tons</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1820</td>
<td>3,254</td>
<td>655,539</td>
<td>856</td>
</tr>
<tr>
<td>1821</td>
<td>3,000</td>
<td>665,994</td>
<td>871</td>
</tr>
<tr>
<td>1822</td>
<td>3,230</td>
<td>603,167</td>
<td>67</td>
</tr>
<tr>
<td>1823</td>
<td>3,229</td>
<td>601,521</td>
<td>67</td>
</tr>
<tr>
<td>1824</td>
<td>3,229</td>
<td>601,521</td>
<td>67</td>
</tr>
<tr>
<td>1825</td>
<td>3,229</td>
<td>601,521</td>
<td>67</td>
</tr>
<tr>
<td>1826</td>
<td>3,229</td>
<td>601,521</td>
<td>67</td>
</tr>
<tr>
<td>1827</td>
<td>3,229</td>
<td>601,521</td>
<td>67</td>
</tr>
<tr>
<td>1828</td>
<td>3,229</td>
<td>601,521</td>
<td>67</td>
</tr>
<tr>
<td>1829</td>
<td>3,229</td>
<td>601,521</td>
<td>67</td>
</tr>
<tr>
<td>1830</td>
<td>3,229</td>
<td>601,521</td>
<td>67</td>
</tr>
<tr>
<td>1831</td>
<td>3,229</td>
<td>601,521</td>
<td>67</td>
</tr>
<tr>
<td>1832</td>
<td>3,229</td>
<td>601,521</td>
<td>67</td>
</tr>
<tr>
<td>1833</td>
<td>3,229</td>
<td>601,521</td>
<td>67</td>
</tr>
<tr>
<td>1834</td>
<td>3,229</td>
<td>601,521</td>
<td>67</td>
</tr>
<tr>
<td>1835</td>
<td>3,229</td>
<td>601,521</td>
<td>67</td>
</tr>
<tr>
<td>1836</td>
<td>3,229</td>
<td>601,521</td>
<td>67</td>
</tr>
<tr>
<td>1837</td>
<td>3,229</td>
<td>601,521</td>
<td>67</td>
</tr>
</tbody>
</table>

The number and tonnage of ships that cleared out from London to different parts of the world in each year from 1831 to 1837 have been as follows:—

<table>
<thead>
<tr>
<th>Year</th>
<th>Ships</th>
<th>Tons</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1831</td>
<td>2,345</td>
<td>655,539</td>
<td>856</td>
</tr>
<tr>
<td>1832</td>
<td>2,345</td>
<td>655,539</td>
<td>856</td>
</tr>
<tr>
<td>1833</td>
<td>2,345</td>
<td>655,539</td>
<td>856</td>
</tr>
<tr>
<td>1834</td>
<td>2,345</td>
<td>655,539</td>
<td>856</td>
</tr>
<tr>
<td>1835</td>
<td>2,345</td>
<td>655,539</td>
<td>856</td>
</tr>
<tr>
<td>1836</td>
<td>2,345</td>
<td>655,539</td>
<td>856</td>
</tr>
<tr>
<td>1837</td>
<td>2,345</td>
<td>655,539</td>
<td>856</td>
</tr>
</tbody>
</table>

The above figures exhibit an amount of activity in the prosecution of foreign trade wholly without a parallel, but these numbers are far exceeded by the coasting trade of the port.  
The number and tonnage of coasting vessels that entered London from other parts of the whole kingdom, distinguishing those engaged in the trade with Ireland, during the six years from 1833 to 1835, were as under:—

<table>
<thead>
<tr>
<th>Year</th>
<th>Ships</th>
<th>Tons</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1831</td>
<td>4,612</td>
<td>926,123</td>
<td>836,868</td>
</tr>
<tr>
<td>1832</td>
<td>4,612</td>
<td>926,123</td>
<td>836,868</td>
</tr>
<tr>
<td>1833</td>
<td>4,612</td>
<td>926,123</td>
<td>836,868</td>
</tr>
<tr>
<td>1834</td>
<td>4,612</td>
<td>926,123</td>
<td>836,868</td>
</tr>
<tr>
<td>1835</td>
<td>4,612</td>
<td>926,123</td>
<td>836,868</td>
</tr>
<tr>
<td>1836</td>
<td>4,612</td>
<td>926,123</td>
<td>836,868</td>
</tr>
<tr>
<td>1837</td>
<td>4,612</td>
<td>926,123</td>
<td>836,868</td>
</tr>
</tbody>
</table>

It is not possible to form any reasonable estimate of the quantity of merchandise brought by canal and by railway to London or with which it is supplied, or to place before the public the extreme importance of the metropolis as a means of conveying that which cannot be transported by land or water.  
It would be easy for the proprietors of canals to give an account of their traffic, but all information of this kind is systematically withheld.  
It is not possible to give any more definite information on the subject.  

[Docks.]
The amount of postages collected in London in each year from 1832 to 1837 was as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Postages Collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>1832</td>
<td>625,956</td>
</tr>
<tr>
<td>1833</td>
<td>692,871</td>
</tr>
<tr>
<td>1834</td>
<td>660,411</td>
</tr>
</tbody>
</table>

During this time, there has been no increase in the rate of postage, and the progressive increase in the amount collected is probably not more than equivalent to the increase of inhabitants. The above sums form between a fourth and a third part of the gross produce of the post-office duty in the United Kingdom. The post communications between London and various parts of the United Kingdom have been greatly accelerated by means of the different lines of railway already opened, and as the system is extended, greater improvements in this respect will of course be realized. At present the letter-bags which leave London at eight o'clock in the evening arrive at Edinburgh early on the second morning. Letters for Liverpool are dispatched at the same time and are delivered by eleven o'clock the following morning. The following is an account of the steam-passenger services which exist between the principal towns of the kingdom who have profited more than London through the application of steam to navigation. A great part of the steam-vessels that arrive and depart carry passengers only, and are therefore not required to make entry at the customs of the country. On the other hand, no distinction is made at the custom-house between them and sailing-vessels, for which reasons no accurate account of the number of this class of ships that enter and leave the port can be given. Steam passage-boats are frequently taking up and discharging at all hours during the day the trade between London and Greenwich and Woolwich and others start every quarter of an hour during the day from London Bridge and Westminster. To Gravesend boats go at various times during the day, and in the summer there are several departures and arrivals every day to and from Margate and Ramsgate. Between London and Calais, Boulogne, Antwerp, and Rotterdam steam-vessels are passing almost daily in summer and frequently in winter. With various ports in England, Scotland, and Ireland, a constant interchange is the same manner.

LONDON CLAY. The most considerable of the tertiary formations of Great Britain is thus designated, from its development in the valley of the Thames under and around the metropolis. It may be viewed in three parts, occupying the following sea.

Upper part—Bagshot Sand, in which several remarkable fishes have been lately noticed by Dr. Buckland.

Middle part, London Clay—Containing a few bands of sand, nodules of sepiaria, and multitudes of marine shells.

Lower part, Plastic Clays and Sands—Various coloured clays and sands, with siltites, and marine, meararium and fresh-water shells.

LONDON, NEW [CONNECTICUT]

CHANNEL DERRY, a maritime county of the province of Ulster in Ireland, bounded on the north by the Atlantic Ocean, on the east by the county of Antrim and a portion of Loch Neagh, on the south by the county of Tyrone, and on the west by the county of Donegal. According to the map of Ireland—Belfast is the superintendence of the Society for the Diffusion of Useful Knowledge, it lies between 54° 36' and 55° 22' N. lat., and between 6° 28' and 7° 24' W. long.; and, according to the map of the Ordnance Survey of Ireland, it extends from the Tyrones to the north of the Ballinderry river on the south to Portrush on the north, 404 statute miles; and from the Donegal boundary near Londonderry on the west, to the Antrim boundary at Kilrea Bridge on the east, 34 statute miles. The area, according to the same map, is:

- Land: 507,221 acres
- Water: 10,656 acres
- Total: 517,877 acres

The county is of an irregular triangular area, of which the eastern side may be considered as formed by the shore of Loch Neagh and the line of the river Bann, the southern by the Tyrone boundary, and the north-western by the river Foyle and coast-line. From the Bann the surface gradually rises westward for about ten miles, forming a chain of elevations which bound the valley of that river on the west, and constitute the most remarkable feature of the interior of the county. These heights slope with a gentle declivity eastward and northward, but present a series of precipitous escarpments towards the west, in which direction they overlook an extensive tract of undulating country extending from their bases to the eastern shore of Loch Foyle, and bounded on the south by the mountains which separate the counties of Londonderry and Tyrone. Between the southern extremity of the first-mentioned range and the shore of Loch Neagh a comparatively level tract is interspersed. The country between the rivers Foyle and May is thus considered as divided into three parts—the district of the county of Tyrone, and the district of the county of Antrim.

The Lower Bann, from Loch Neagh to the sea, a distance of upwards of thirty miles, has a fall of only 49 feet. The river flows up to a distance of about twelve miles, between low banks, which are encumbered towards the north side of the river with extensive tracts of sand. The north eastern liberties of Coleraine here occupy an irregular semicircle of about four miles in radius, surrounding the town of Coleraine on its eastern side. The characteristics of this district are similar to those of the north coast of the county of Antrim. The elevations are however inconsiderable, and the general aspect of the country is tame and bleak. On a low rocky peninsula at the extreme north-east of the county, the coast is quite a sea-cave; and near the Bann, on an exposed strand running down between low headlands of basalt is Port Stewart, a well built and fashionable watering-place, but quite unprovided with shelter for any craft above the size of a fishing-boat. The most of the sands which are within two miles of the Bann the coast has a bold outline, rising in a series of precipitous cliffs over the sandy beach. These cliffs extend a distance of rather more than two miles, increasing in height as they trend westward, until at the north-western extremity of the low tract, nearly parallel to the northern boundary, they have an elevation of from 350 to 400 feet. At this point the escarpments which mark the western boundary of the basaltic area commence, and may descend along the brink of all the heights which have been mentioned as overlooking the district extending from this line to Loch Foyle. Of these heights the most prominent are Benveyenagh, at the northern extremity of the range, which rises abruptly over the sandy flat of Magilligan to a height of 1260 feet; and the hill farther south, 1315 feet; and Benbradagh, three miles south of Donald's Hill, 1331 feet; and, separated from Benbradagh by the bold amphitheatre valley of Glenshane, the upper and eastern boundary of which is formed by Carnatogher mountain, 1272 feet, which is continued by the Glenshane, with its subordinate heights of Altevgue, 1261 feet, and Tamninar, 1272 feet, which together form the south-western extremity of the basaltic area, and complete a nearly continuous range of mountain of 24 miles in length from north to south. With these heights form striking cascades in falling over the escarpments of Avish and other minor heights north of Benveyenagh, all the waters which rise in the area included between the western fronts of the above-mentioned mountains and the river Foyle take their course through the valley of the latter river. Of these the most considerable are the Marconish and Agivey rivers, the former of which has its sources in the slack, as mountain-passes are here provincially termed, between the mountains of Benveyenagh and Keddy, and works the valley of the river Foyle from the south. The latter descends from the range of Donald's Hill and Benbradagh. On the road leading from Kilrea on the Bann, westward through the slack separating the Donald's hill range from the group of Benveyenagh and Keddy, and the Marconish, on this side form the valley of Glenshane, is the town of Garvagh. The Clady river, rising from the eastern declivities of Carnatogher mountain, also joins the Bann at Portglenone, a point of considerable intercourse between the counties of Londonderry and Antrim. South of the drainage of the county is towards Loch Neagh, through the rivers Mayola and Ballinderry, the latter of which forms part of the county boundary on this side. The Mayola has its rise at the bases of the mountain groups which form the head of Glenshane and the valley of Ballynascreen, and carries a considerable body of water to Loch Neagh, which it enters at its north-western extremity. The town of
LON 130 LON

Maghera is situated about midway between the Clady and Mayola rivers, on the road westward from Toome, at which latter place the Lower Bann first issues from the lake. The towns of Castle Dawson, Magherafelt, Tobermore, and Maghera are situated in the vicinity of the Mayola and the Ballinderry rivers. This tract is bounded westward by the detached mountain of Slieve Gallion, which rises to the height of 1,730 feet, and is in its structure similar to the mountains of the basaltic tract abovementioned, although throughout the wide intervening valley of Ballynascreen there are no traces of any connecting formation. West of the valley of Ballynascreen commences a mountain-chain which with little interruption extends to the valley of the river Foyle, forming the boundary between the counties of Tyrone and Londonderry. The highest of the group is Sullaw, which rises to a height of 2,236 feet, about midway between Slieve Gallion and the western extremity of the chain. The other chief heights on the range are Munard, east of Sullaw, 2,057 feet; Darnt mountain, west of Sall, 2,037 feet; and Slieve Kirk, which forms the western extremity of the range, 1,224 feet. The district included between these mountains and Loch Foyle, constituting the western division of the county, is divided by a cleft, although throughout the wide intervening valley of the Foyle, and Faughan. The former, rising in the upper part of Glenishane, is joined by the Owenegrag and Owenbeg rivers at the entrance of that valley, from which it pursues a northerly course nearly parallel to the line of abrupt declivity of that mountainous region, and at its mouth it enters by a sharp turn to the west immediately under the base of Benveenagh. Several streams join the Roe from the comparatively level tract interposed between it and these mountains, rendering it, next to the Foyle and Bann, the most fertile of all the rivers flowing into the lower river of the Foyle, especially towards the embouchure of the river, is flat and open, and contains much good and highly improved land. The thriving town of Newtown Limavady is settled on this river about five miles above its mouth, on the high road from Londonderry to the north-west, and which places it is the most important town of the county. Dungiven, also a place of some consequence, occupies a romantic site on the same river near its junction with the Owenegrag, in the opening of the valley of Crossacreevy.

The principal roads from the east to the west of the county pass through these towns, which severally occupy points at which the leading mountain-passes converge. The open rich country of this valley, called Moyrane, or the plain of the Foyle, is level and fertile, and contains much of the area of the Lower Bann. The Foyle, after passing through Sullaw, forms a sharp turn to the east of north, and runs through a highly improved valley westward along the course of Loch Foyle by Muff, and at the lower extremity of the loch opens into the valley of the Faughan. The Faughan river, which springs from the northern declivities of Sullaw, after skirting the bases of the several mountains which extend from the westward along the line of the mountains, forms the valleys of Burntolough and Faughan, from each of which a considerable stream descends to the Foyle. From the village of Claudy, situated near the sources of the Faughan, to the point where the river turns toward the north-east, it is a distance of nearly seven miles. The Foyle then presents a wide and level expanse of water, rendered picturesque by the huge old rocks which compose it, and bounded by well-improved grounds and numerous bleach-greens. The fertile vales of Bond's Glen and Glenrandle open from between the mountains forming the county boundary on this portion of the valley of the Faughan. The district between the limits of the Foyle and Faughan is occupied by moor and mountain. Legannon, the principal eminence, which occupies nearly the centre of the tract, has an elevation of 1,262 feet. Other heights, varying from 600 to 900 feet, spreading southward and westward from Legannon, form the valley of Burttolough and Faughan, from each of which a considerable stream descends to the Faughan.

The Lower Faughan and the Foyle is a range of undulating ground crossed by a valley through which the river Faughan flows during its course to the southward; from thence a wooden bridge completes the communication with Londonderry city. The city of Londonderry occupies a boldly rising ground on the west bank of the Foyle, along which the county embraces an irregular tract extending from about four miles above the city to a mile below Culmore, where the river expands into Loch Foyle. The distance from end to end of this out-lying portion of the county is ten miles, and its breadth from one to three and a half. It is all arable and in a good state of improvement, as is also the opposite bank of the river. The Foyle here makes a noble appearance, varying in breadth from 300 yards to half a mile, and being capable of floating ships of 800 tons up to the ridge of mountains which separate it from the Ballinderry district.

The most remarkable feature of the coast-line is the tract which extends from the north-western extremity of the hilly region to the low point of Magilligan and southward to the mouth of the Roe. On this tract is measured the base-line of the triangulometric survey of Ireland now going on under the superintendence of the Ordnance, 53,200 feet in length. The same tract appears to occupy the greater portion of the bottom of the loch, and rises towards its centre in a bank which confines the navigable portion of Loch Foyle lying along the coast of Donegal. The length of the loch, which is of a triangular shape, bounded by the low coast of Londonderry on the east and south, and by the bold shore of Enniskillen on the west, is above 16 miles, and its greatest breadth 10. On an average of seven years between 14 and 16 feet. Enniskillen Head, is about a mile across, and from this point to Londonderry city is a safe and tolerably sheltered navigation of 23 miles. Eastward of the entrance is a shoal called the 'Tuns,' which renders the loch difficult of access in winter, and which is an improvement of the western side of this shoal. Except the small and at present inconvenient harbour of Portrush, there is no other shelter for vessels on the coast of this county. It has been proposed to render the Bann navigable from Loch Neagh to the mouth of the river Foyle by means of a canal, which will lead the loch into the sea. The valley of Glenishane, which forms the boundary between these lines. The valley of the Roe is well provided with roads, which extend southward by Ballymoney to Claudy, giving ample means of communication to the country between the heads of the rivers Roe and Faughan. The road from Londonderry to the coast of Enniskillen is short by about a mile, and passes the river Faughan on one side, and by the head of the valley of Ballynascreen on the other. Besides these there are several passes from Tyrone into Londonderry among the mountain groups which lie between these points.

The climate of the county of Londonderry is, it appears that the maximum annual quantity of rain, on an observation of seven years, was somewhat less than 33 inches, the minimum somewhat less than 26 inches, and the mean 31·1 inches. From the same observations it appeared that 200 days were excessively wet, and 125 were dry days fair, 202 showery, and 34 wet. The climate is of a favourable to early sowing. The frequency of the showers, rather than the quantity of rain, renders the air much humider than in many districts where a greater quantity of rain falls.

Geology.—The basaltic tract corresponds in all respects to the remainder of the field on the opposite side of the Bann [GIANT'S CAUSEWAY], with this remarkable difference that the dip of the strata is reversed; the surface, and the masses which compose it, on the Londonderry side of the Bann dipping towards the north-east, whereas their direction on the Antrim side is nearly to the south-west. The basalt, as in Antrim, attains its greatest thickness at the northern extremity of the field, the cap of Benveenagh measuring about 1,000 feet in thickness, and red sandstone, succeed in descending order, one or more of the members being frequently absent, and constitute the remainder of the system, which through 0 is reposes immediately on the primitive rock. The geology of the district may thus be described as a sheet of primitive rock overlaid in part by a field of secondary formations, capped by basalt. The boundary line is marked by the abrupt declivities forming the eastern limit of the valley of the Roe, from the southern extremity of the
range it passes across the Mayola river to the east of Slieve Gallion, and so to Loch Neagh, on the opposite side of which it reappears at the mouth of the Glenavy river. The main constituent of the rest of the county is mica slate. This, in dissection, is succeeded by the surface of Londonderry. In general the line of demarca-
tion between it and the red sandstone, which is the most prominent member of the secondary field, is well defined. One mass however, that of Cookscrah mountain, which rises nearly 1,300 feet above the level of the sea, is wholly con-
composed of this rock, although almost surrounded by the advanced basaltic heights of Creginshcoh and Benbradagh. Upwards of two-thirds of the mica slate of this district belong to the talcose variety. Primitive limestone is of fre-
quent occurrence throughout the field. At a height of about 600 feet above the sea, on the north-west side of Carnaghtor mountain, it is found with veins of coloured spar, quartz, and green chlorite. It also occurs near Dungiven and Claudy. On the east side of Slieve Gallion there is a gran-
ular limestone which contains quartzes and hornblende: hornblende slate is found at several places in the valley of the Roe; a bed, four hundred yards in extent, occurs near the old church of Dungiven, where it runs parallel to the bed of primitive limestone above mentioned. The general formation of the field is so complex that the description is so minute. Slieve Gallion, besides having a cap of basalt, with the usual underlying formations, exhibits towards its base beds of sienite in connection with por-
phyry. On the north-west side the sienite verges into green-
stone-the most outlying portion of the district is of tabular basalt of the summit, also crop out on the east side of the mountain. All along the western verge of the basaltic region the red sandstone, which forms the lowest member of the field, projects beyond the superior strata in a bold valley, which is a deposit of a demesne pit, and on the surface rock of the eastern valley of the Roe, from the head of which it sweeps across the opening of the valley of Ballinderry, and so between Slieve Gallion and the line of basalt into Tyrone. A detached patch of flotsk limestone occurs near the ford of Benbradagh, which serves both the rivers, which cross the district, and especially at their junctions. In general these superior portions consist of rolled gravel banks: clayey tracts occur in the neighbourhood of Coleraine, beyond which, on the Antelope side of the river, a deposit on the surface of the tavoak and coleraine, where it is worked for burning. There are no mines worked in this county. Soil, Agriculture, and Trade.—The soil of that part of the valley of the Bann where the subsoil is hard basalt consists for the most part of rusty loose grit, without sufficient strength or cohesion for wheat crops. Numerous tracts of bog, interspersed with shallow pools, and frequently separated by claggery knolls of basalt, are scattered over this part of the country. There are however tracts of good land, always along the rivers which cross the district, and especially at their junctions. In general these superior portions consist of rolled gravel banks: clayey tracts occur in the neighbourhood of Coleraine, beyond which, on the Antelope side of the river, a deposit on the surface of the tavoak and coleraine, where it is worked for burning. There are no mines worked in this county. Soil, Agriculture, and Trade.—The soil of that part of the valley of the Bann where the subsoil is hard basalt consists for the most part of rusty loose grit, without sufficient strength or cohesion for wheat crops. Numerous tracts of bog, interspersed with shallow pools, and frequently separated by claggery knolls of basalt, are scattered over this part of the country. There are however tracts of good land, always along the rivers which cross the district, and especially at their junctions. In general these superior portions consist of rolled gravel banks: clayey tracts occur in the neighbourhood of Coleraine, beyond which, on the Antelope side of the river, a deposit on the surface of the tavoak and coleraine, where it is worked for burning. There are no mines worked in this county.

The condition of the labouring population is superior to that of the same class in most parts of the north of Ireland. The general rate of wages for agricultural labourers is i.e. per day for 180 working days in the year. The population of the county is 24,000. The system of feeding cattle is practised by the farmers, not by the gentry only. There is but little land in pasture, and the breed of cattle, with the exception of pigs, of which great numbers are reared, is in general not much attended to. The following are the quantities of grain sold at the chief market-towns, exclusive of Londonderry at Coleraine, in the years 1830 and 1835:

<table>
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<tr>
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<th>1830</th>
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<th>1835</th>
<th>1830</th>
<th>1835</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newtoun (tons.)</td>
<td>1,123</td>
<td>925</td>
<td>9,277</td>
<td>1,650</td>
<td>1,123</td>
<td>925</td>
<td>9,277</td>
<td>1,650</td>
</tr>
<tr>
<td>Dungiven (tons.)</td>
<td>671</td>
<td>348</td>
<td>725</td>
<td>1,463</td>
<td>571</td>
<td>300</td>
<td>745</td>
<td>1,484</td>
</tr>
<tr>
<td>Magherafell (tons.)</td>
<td>32</td>
<td>36</td>
<td>257</td>
<td>514</td>
<td>32</td>
<td>36</td>
<td>257</td>
<td>514</td>
</tr>
<tr>
<td>Coleraine (tons.)</td>
<td>900</td>
<td>600</td>
<td>120</td>
<td>240</td>
<td>900</td>
<td>600</td>
<td>120</td>
<td>240</td>
</tr>
<tr>
<td>Total (tons.)</td>
<td>2,776</td>
<td>2,351</td>
<td>14,202</td>
<td>2,878</td>
<td>2,776</td>
<td>2,351</td>
<td>14,202</td>
<td>2,878</td>
</tr>
</tbody>
</table>

The manufacture and bleaching of linen is the staple trade of the county, and the most extensive. The valley of the Bann, and the valley of the Roe and Faughan, are to a great extent moor-yad mountainous.
and 303ers, 50 millers, 24 corn-dealers, 18 millwrights, 25 tailors, and 18 tobacconists. The export and import trade of the county is carried on at the ports of Londonderry city and Portrush, the latter being the seaport of Coleraine. The exports of Londonderry city in 1835, including 20,802 tons of corn, meal, and flour, amounted in value to 1,040,919l., and the imports to 708,054l. [LONDONDERRY, City.] The exports of Coleraine and Portrush in the same year amounted to a value of 103,685l., and the imports to 65,906l. The quantity of corn meal and flour included in the exports of the latter port in that year was 5137 tons.

**Divisions, Towns, &c. -** Londonderry is divided into the half barony of Coleraine, on the N.E., the barony of Kennet, in the E. and centre, containing the towns of Newtown Limavady (pop. 2426) and Dungiven (pop. 1163), and the town of Castledawson (pop. 1264), a principal place in the S.E., containing part of the town of Moneygall (total pop. 1023), and the towns of Magherafelt (pop. 1346), Kilrea (pop. 1215), Maghera (pop. 1124), Tobermore (pop. 579), and Tyrkerrin, on the W., containing the villages of Muff (pop. 192), Claudy (pop. 180), and Faughanvalle (pop. 123). Besides these, there are within the county the liberties of Coleraine, containing the town of Coleraine (pop. 5752) and the village of Portstewart (pop. 475); and the liberties of Londonderry, containing the town of Londonderry (pop. 18,564), the second seaport of Ireland, and having on the river Foyle a considerable amount of shipping. Londonderry is the seat of a most flourishing linen manufacture. [CLOTHRIE.]

Newtown Limavady was incorporated by charter of 30th March, 11 James I. The corporation is still in existence. The town is small, but built, and has a moderate appearance. There is a handsome sessions-house; but the market-house is old and inconvenient. It is a place of considerable trade in grain, and is the centre of an extensive linen bleaching district. The surrounding country is highly beautiful.

Magherafelt is also a handsome though small town. It consists of a spacious square with the market-house in the centre, from which the four principal streets diverge. The houses are stone-built and slated. There is a great market for linen and yarns once a fortnight. The linen manufacture is carried on extensively in the vicinity; there are also large brewing and distilling establishments in the town.

Portrush, in consequence of the recent improvements in the harbour, is rapidly rising into importance. Steamers sail regularly from hence to Liverpool, Glasgow, and Londonderry. Dungiven is the emporium for the whole of the mountainous district round the sources of the Roe and Fahan. It had formerly a considerable manufacture of flax, but this has now much declined. It consists of a rural village than the other towns, and is, from its secluded situation and the primitive manners of the people of the vicinity, a place of peculiar interest.

Prior to the Union, Londonderry sent eight representatives to the Irish parliament, viz., two for the county, and two for each of the boroughs of Newtown Limavady, and Coleraine. The representation is now confined to two county members, one member for the city, and one for the borough of Coleraine. In October, 1836, the 2nd and 3rd annual meetings of the county, at which the county meetings are held at Londonderry, and quarter-sessions at Newtown Limavady, Magherafelt, and Coleraine. The police-court of the county, on the 1st January, 1836, consisted of four chief constables, 15 constables, 77 subconstables, and 30 officers of maintenance. The revenue amounted to 392l. 6s. 4d., of which 1855l. 12s. was chargeable against the county. This is the smallest police force employed in any county of Ireland. The total number of persons charged with criminal offences, who were committed to the county gaol in 1836, was 263, of whom 200 were males and 63 were females. Of these, 125 males and 4 females could read and write at the time of their commitment, 112 males and 31 females could read only, and 63 males and 28 females could neither read nor write. The district asylum for the counties of Londonderry, Donegal, and Tyrone is at Londonderry city, which also contains the county infirmary. There are dispensaries in all the principal towns and villages.

### Table

<table>
<thead>
<tr>
<th>Date</th>
<th>How ascertainment</th>
<th>Houses</th>
<th>Families</th>
<th>Families chiefly employed in agriculture</th>
<th>Families chiefly employed in trade, manufacture, &amp; handicraft</th>
<th>Families chiefly employed in the military and naval branches</th>
<th>Males</th>
<th>Females</th>
<th>Total</th>
</tr>
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<tbody>
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<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
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<tr>
<td>1813</td>
<td>Under Act 1792</td>
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<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
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<tr>
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<td>37,557</td>
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<td>...</td>
<td>...</td>
<td>37,557</td>
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<tr>
<td>1831</td>
<td>Under Act 1 Will. IV. c. 19</td>
<td>39,077</td>
<td>41,299</td>
<td>25,009</td>
<td>10,393</td>
<td>5,837</td>
<td>160,627</td>
<td>115,353</td>
<td>222,012</td>
</tr>
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</table>

**History.** - Of the early history of Londonderry county, pending the publication of the 'Ordinance Memoir,' little can be said, although ample materials exist in the native Irish annals similar to those made available in the published 'Moor of Londonderry City.' At the most remote period it appears to have been possessed by the septs of O'Loughlin and O'Neill, to whom the tribe of O'Cahan, who held the eastern and central districts, was tributary. The ancient fortress of Aileach [Doward] was the seat of the first family, who were of the elder and royal branch of the O'Neills. The O'Cahans' chief places of residence were, first at Dunseverick, the ancient Dunsborrough, in the present county of Antrim, and afterwards at the 'Dog's Leap,' or Limavady, in the Roe. Soon after the arrival of the English in 1197, John de Courcy marched with a considerable force from Downpatrick to Coleraine, where he erected the castle of Mount Sandal, close to the Cutts' fall, and afterwards, crossing the river, plundered the country of O'Cahan. The English garrison, which was left by De Courcy in the newly-built castle, was soon after cut off with his entire force near Faughanvalle, on a predatory excursion. Next year De Courcy again invaded the country of O'Cahan, and proceeded to Derry, which he seized; but Hugh O'Neill, of Tyrone, having made a descent on the Antrim coast at Larne, and routed the English there, compelled him to abandon his conquest. The establishment of an English garrison at Coleraine would appear to have enabled the English very soon after to reduce at least the eastern and central parts of the county into subjection, for by various records of the reigns of Edward I. and Edward II., grants appear to have been made and inquests to have been taken in Derry in the regular manner, and in the patent roll of the 20th Edward II. is an entry of the appointment of Robert Savage to be sheriff of the county of Derry. The English continued for some time after the death of the last O'Neills, as they were then called, it is probable that the English law continued in force in the eastern parts of the county until the great revolt of the O'Neills in 1333. [BELFAST] After that period the native Irish continued undisturbed masters of the country. The county of Londonderry was in the sixteenth century, where the rebellion of Shane O'Neill, A.D. 1566, made it necessary to send a force to Derry. Seven companies of foot and a troop of horse were dispatched by sea under Captain Randolf, and encamped at Derry in October of that year. An engagement ensued, in which O'Neill was defeated by Randolf being slain, and an explosion of gunpowder having destroyed the works of the English, the place was soon after abandoned. In the year 1600, Sir Henry DeCourcy, with a force of 1000 foot and 200 horse, arrived in the river Foyle, and immediately commenced the construction of three forts, one on the western bank of the Foyle at Culmore, where the river opens into Loch Foyle, one on the...
hill of Derry, and one at Dunmalloch, a little higher up on the eastern bank of the river. This was the first con-
mencement of the present work, for in 1837, Sir Cahir O'Doghtry in 1608, and the flight of Tyrone and O'Donnell in the preceding year, left the entire of this and five other counties at the disposal of the crown. On the 23rd January, 1609, negotiations were commenced at the point where the river Foyle spreads into the harbours of Loch Foyle, and 144 statute miles from Dublin by the present mail-coach roads.

The municipal boundary, by which the jurisdiction of the corporation is virtually limited, includes an irregular area of 37,771 acres, of which 12,490 acres are on the east side of the Foyle. These limits are considerably restricted by the boundary adopted for par-
liamentary representation. The site of the city within the 3773 feet by 633 feet. The area of the hill on which the old town was in 1590 acres.

Derry, antiently called Derry-Caigagh, first became a place of note in consequence of the foundation of a monastery there, about A.D. 546, by Columba, the celebrated apostle of the Picts. It is probable that before the time the place had been consecrated to religious purposes, as Maghera;

The town is situated on the river Foyle, and on the west of the town. It is about 2 miles from the sea. In 1619 this body was incorporated by royal charter, and their estates erected into one county, to be called the county of Londonderry. The corporation, which is generally known as 'The Irish Society,' still exists as constituted under the charter granted by Charles II. after the Restora-

The division of the country took place immediately under the new church, which was granted in 1609. The landlords were the southeastern liberties of Derry; the company of Grocers had the precinct of Muff; the Fishmongers, Ballykelly; the Ironmongers, Aghadowey; the Mercers, Moyravane; the Merchant Taylors, Moycough; and the others, the respective liberties of their own part of Coleraine; the Skinners, Dungiven; the Vintners, Religiously; the Drapers, Moneymore; and the Salters, Magherafelt. Of these twelve companies, the Goldsmiths, Haberdashers, Vintners, and Merchant Tailors have from time to time sent delegates to the English Parliament. The chief proprietors so introduced are the families of Beresford, Richardson, Ponsonby, Alexander, and Conolly. Of the remaining eight companies, five have. under-leased their lands, and the remaining three, namely, the Drapers, Coachmakers, and Shoemakers, own their estates in their own hands, which they manage by resident agents. The lands not assigned to the companies still belong to the Society. The introduction of the new colony changed the entire face of the country, which, up to this period, had been one of the most desolate tracts in Ireland. Artisans, in all the chief branches of trade and manufacture, were brought over by the companies, and habits of industry and independence became at once fixed among the population. The native Irish, returning by degrees, have retired to the north and west, and made of the eastern and southern parts of the county settlements of the settlers in number. Although a peaceable and interesting people, they are however still far behind the rest of the population in habits which conduci to prosperity and comfort.

There are some remains of a Cyclopean fortress at the Causeway, one of the old Roman roads from Newtown Linavady to Coleraine. Dungokin, a circular mount surrounded by a wet ditch, near Clady, is the most remarkable of the numerous earthen fortresses which occur throughout this, as throughout every other Irish county. There are several cloches, and other supposed Druidical remains, of which the largest is at Slaught-Manus. Artificial caves and tumuli are frequent. Of military edifices the only remain-

The total expenditure of the London companies in building and fortifying the walls, erecting houses, constructing quays and wharfs, and making roads, was £7,671. In 1633 the town was much injured and the cancellation of the company's charter in 1637, and the sub-
sequent breaking out of the great rebellion, put a stop to these improvements. The city now became an asylum for the distressed Protestants of the counties of Londonderry, Tyrone, and Donegal. In 1649 the town was garrisoned for the parliament by Sir Charles Coote, who endured a siege of four months by the royalists under Sir Robert Stewart. The defeat of the Roman Catholic forces under Bishop Mulvany at Stakeford in Donegal, the following year, left the parliamentarians in peaceable possession until the conclusion of those troubles, for the time, by the restoration of King Charles II. In consideration of the services of the
The depth of water at the quays is from 12 to 14 feet at low-water of neap tides. The velocity of the current is from three to four miles an hour in the narrowest part of the channel, and from two to three in the widest.

The following is an extract from a letter of the 11th Jan.

The governing body is the common-council, consisting of 12 aldermen, including the mayor, 24 burgesses, and two sheriffs. The mayor is chosen by the common-council from the aldermen. The freedom is acquired by birth, servitude, marriage, and special favour. The recorder is presented by the corporation and appointed by the mayor. The city sessions, to hear and determine feudal debts are held three times in the year. A court of record, with civil jurisdiction, unlimitted in amount, is held before the mayor or recorder. With the exception of the rent of the market tols, amounting to 170l. per annum, the corporation do not now possess any property not held for special public trusts. In Feb., 1833, they owed a total of 66,444l. 17s. 6d., of which 34,650l. 9s. 11d. was paid by sale of their then remaining property. The balance due has since increased to 32,971l. 7s. 6d., to pay which there are not now any funds, save the above arrears, available.

Prior to the Union, Londonderry city returned two members to the Irish parliament. Since that time it is represented by two members. The number of 180l. householders and freemen. On the 1st April, 1845, the constituency consisted of 724 electors.

The general appearance of the city is highly imposing. The hill on which it stands rises boldly over the Foyle, the river, and the bay. At the summit of the hill, 119 feet above the level of the river, is the cathedral, the spire of which rises to the height of 178 feet from the churchyard. Walker's testimonial—a fluted Doric column, 90 feet high—springs near from the entrance to the churchyard. In front of the statue of the St. Eugene, the new general post-office, with the cupola of the town-house, give a very striking outline to the mass of buildings which stretches from the water's-edge up the northern and eastern declivity of the hill, and spreads westward into an extensive suburb of modern buildings, and is the site of the old town from the adjoining eminences. The bishop's palace stands within the walls at the south-western extremity of the town, near the cathedral. Between the cathedral and palace is the court-house, a very handsome edifice, exhibiting a front of 126 feet, consisting of an Ionic portico of four columns with wings adorned with Doric pilasters, and surmounted by statues of Peace and Justice. The building was commenced in the year 1820, and cost 30,479l. 13s. Outside the walls, on this side, are the Customs-house, a single storey building, completed at an expense of 33,718l. (Irish) in the year 1830. The crown-prison department is somewhat too extensive for the demands of justice in so peaceable a country. Outside the walls, at the opposite extremity of the town, facing the sea, is a large brick building, about 900 feet by 130. The quays extend from the bridge northward for rather more than half a mile, and terminate in a packet slip, constructed in 1830 at a cost of 4000l. This slip is found to answer all the purposes of a dry-dock for vessels of 300 tons register. A well-constructed ship-yard is attached to it, of which vessels of 200 tons and upwards have been recently built. The walls and ramparts are still kept in repair, and form an agreeable promenade for the citizens. Between 1603 and 1608 the three principal gates were built at a cost of 721l. 19s. 6d., and a fourth, called the Brit Skene, was built c. 1655 on the side occupied by the cathedral and court-houses, is a handsome triumphal arch with lateral passages, erected by the corporation in 1789.

The lighting, cleaning, and watching of the city are managed by a committee under the act of 2 and 3 Wm IV., c. 107. The gas-works which supply the city were established by a joint-stock company in 1830, at an expense of 7000l. The supply of water is from a tank on the opposite side of the river. The water is conveyed across the bridge by a tunnel some 800 feet long, and is discharged into the Foyle through a cistern in the bridge that opens the turning-platform in the bridge for the casional passage of vessels. Turf-fuel is procured from the bogs of Clondermot, on the eastern bank of the Foyle, and the iron imported in 1830 amounted to 13,966 tons, of the value of 872l.

The port is under the control of a committee acting under the provisions of the 2nd and 3rd Wm IV., c. 107, which act also regulates the tonnage duties. The quays, wharves,
up to 1831 were the property of the corporation, are now in the hands of private individuals and companies. There are twenty-one such quays, and wharves, including two on the river, and an income of 1780l. per annum; in 1836 there were 81 boys on the establishment. The Diocesan and Free Grammar-school has an income of 600l. per annum, 567l. 6s. 2d. of which is contributed by the London companies, the Irish Society, and the bishop. The Irish Society also contributes to the support of its schools in Ireland, and in 1836 transferred a new building now partly occupied by the Chamber of Commerce. There is also a literary society, established in 1834. The savings-
bank, established in 1816, had deposits amounting to 16,226l. 15s. 6d. on the 10th Nov. 1835. The number of de-
positors was 899. Two weekly newspapers are published in the city.

Of the charitable institutions the principal are:—the Mendicity House, established in 1825 by Bishop Knox, and supported by voluntary donations averaging 600l. per annum; the Poor-Fund, in 1827, now 30l. per annum, in aid of the poor indigent with clothing and bedding at prime cost, supported by contributions averaging about 45l. annually; and the Ladies' Penny Society, established in 1815, for the relief of sick and indigent room-keepers, supported by subscriptions averaging 900l. The funds of the Mendicity House are invested in a loan-fund, a penitentiary for females, and some minor charities. The district lunatic asylum stands on the north of the city. It was opened in 1829, at a cost of 25,672l. 2s. 4d., and is calculated for 104 patients. The funds for its support are advanced by government annual grants of 40l. to the number of the patients; and for the district. The county infirmary and fever-hospital, opened in 1810, and the dispensary, established in 1819, are supported by annual subscriptions and grand-jury presentments. The annual average of patients relieved in the former is 467, and in the latter 312, with a relief of 900l. annually.

(Ornament Memoir of the City and North-western Liberties of Londonderry, 4to, Dublin, 1837; Report of Railway Commissioners, Ireland, 1838; Leland's History of Leo and Ram. 1836.)

LONG, ROGER, was born in the county of Norfolk about the year 1680. At the age of seventeen he entered Pembroke Hall, Cambridge, took the degree of Master of Arts in 1704, and that of Doctor of Divinity in 1728. The following year he was made a Fellow of the Royal Society, and Vice-Chancellor of the University; in 1749 he was appointed Lowndes's Professor of Astronomy, and in 1751 he was presented to the rectory of Bradwell in Essex, which he held until his death, 16th December, 1770. His astronomical work in the two large quarto volumes, the first of which was published in 1742, the other in 1764: a second edition appeared in 1784. This work contains very good descriptions of the motions of the heavens. Besides his astronomy he wrote, under the signature of Dicniuphus Cantabrigiensis, a pamphlet entitled 'The Rights of Churches and Colleges defended,' 1731, 'Reply to Dr. Gally's pamphlet on Greek accent,' 1755; 'Life of Mahomet,' prefixed to Oakley's 'History of the Saracens,' 1757; 'Music Speech spoken at the public commencement, July 5, 1714,' and other poems. London, 1719, to which is prefixed a short notice of the author's life. With a view to popularise the science of astronomy, he caused to be constructed a hollow sphere, wherein thirty persons could sit conveniently, and on the inner surface of which was inscribed a series of 5600l. for the benefit of his college. (Biol. Br.; Memos. of Dr. Wood mentioned above.)

LONG ISLAND. [New York.] LONG, a character used in old music, formed of a breve with a stem added, thus—

and equal in time, or duration, to two breves, or four semi
breves, &c. It is rarely met with in compositions of later date than the middle of the seventeenth century, and is now hardly known, except to the musical antiquary.

Still more obsolete is the LARGE (a word omitted in its proper place), a character nearly in the above form, but the head is much more extended. Ex.

This is the longest note ever used in musical notation, and equal to two longs, four breves, &c.

LONGFORD, an inland county of the province of Leinster in Ireland, bounded on the north-west by the county of Leitrim, on the north-east by the county of Cavan, on the south-west by the county of Westmeath, and on the south-east by the county of Meath, is fed and carried, separated by a part of Loch Roe and the river Shannon. According to the map of Ireland published under the superintendence of the Society for the Diffusion of Useful Knowledge, it lies between 53° 29' and 53° 56' N. lat., and between 7° 19' and 7° 26' W. long. According to the map of the Ordnance Survey of Ireland, it extends from the Leitrim boundary at Gulladoo Loch on the north to the Westmeath boundary on the south, 29 statute miles, and from the Tarmonmac hill on the west to the Inny near Loch Kinfele on the east, 22 miles. Its area, according to the same map, consists of-

| Land | 264,509 | 1 | 33 |
| Water | 18,675 | 0 | 23 |

Total | 264,690 | 1 | 33 | or 421 square statute miles nearly. In 1831 the total population was 112,553.

The general surface of the county is westward and south-westward towards the Shannon, except in the north-eastern angle towards Cavan, where the county embraces a small portion of the basin of Loch Erne. This district, forming the immediate basin of Loch Gownagh, is separated from the remainder of the county by a range of hills, which is crossed by the Shannon, and by and by a series of hills of low elevation on the west. The latter eminences range from 200 to 400 feet above the level of the lake, and form the eastern front of the Cahir Clonlough group. Loch Gownagh is a very irregular piece of water extending from north to south five miles and a half, and from east to west nearly five miles, but from its being rather a collection of lakes communicating by narrow channels than one sheet of water, it does not in all cover more than about 3000 acres, of which 2276 acres are within this county. Its shores and banks are formed by small streams running from the surrounding hilly country. There are several pretty wooded islands in the lake, and the shores are picturesque and in some places finely planted. The Cahir Clonlough hills, extending about ten miles from north-east to south-west of the county, and about five miles further to the north-east of the county, form the boundary of the district between Loch Gownagh and the Shannon. The chief heights are Crot on the north-east (656 feet) and Cahir Clonlough near the opposite extremity of the group (912 feet). The general character of these hills is tame and pastoral. They form part of a ridge which extends from the Drumish, a bare tract extending along the southern border of Leitrim, and watered by the Ballinamuck, or Clonard river, which rises from Loch Anagh, in the north of the Cahir Clonlough hills. Ballinamuck is a small place, and much of its territory is moor and bog land. The surface improves towards Drumish, which is a place of some trade in grain. The angle included between the Shannon and the river Rinn, which flows southward out of Leitrim [Lairin,] is much encumbered with bog. Between the western termination of the Cahir Clonlough hills and the Shannon is an open well-cultivated tract, in which the thriving town of Newtown Forbes is situated. Newtown Forbes lies about two miles eastward from the Shannon, which flows westward into the lake by a deep and broad mill and a half to a mile in width, called Loch Forbes. The intermediate flat, being about two miles every way, is occupied by the extensive plantations of Castle Forbes, the seat of the Earl of Granard. The south-eastern slope of the Cahir Clonlough hills forms one side of the immediate valley of the Camlin, a considerable river, which, taking its rise in the extreme east of the county, skirts the low range bounding the basin of Loch Gownagh on the south, whence flowing through the small lakes of Killen and Ballinlough, it runs in a westerly direction, by a winding course of twenty miles, to the Shannon, which it enters three miles south of Loch Forbes, at Tarmonbarry. The course through which the Camlin flows is open and well drained. The southern bank of the river in particular is beautiful and picturesque. The woods and well-tilled fields, the elevated portions of the plain, between the sources of the river and Loch Gownagh, is the town of Granard. A little lower down the river is St. Johnstown. Nearest the Shannon is Longford, the ancient seat of the county, principally held on the southern bank of the Shannon by the Earls of Longford and the Shannon, the Camlin receives two small streams from the south, of which Keenagh river is the larger. The district intercepted between the Keenagh and the Shannon, which along the south-eastern border of the lakes of Loch Reavy flat and boggy. The arable portion of this district towards the Shannon is low, and along the shores of Loch Reavy, which here forms the boundary of the country, is extensive winter-fallow ground. These plantations make along the coast of the coast-line of the lake, merging several large peninsulas and converting others to islands.

Next to the district of Ballinamuck, this is the least cultivated part of the county. The Shannon, which here is only a narrow stream, there is but some handwritten demesnes and good parts of pastoral land. The town of Clondonan, or Redgran Harbour, at the terminus of the Royal Canal, which crosses this part of the county in a direction nearly para to the Shannon river; and Longford town, at the head of Loch Reavy, where the Shannon is crossed by the road leading to Roscommon. An inlet of Loch Reavy, running at four miles eastward from the main sheet of the lakes, is one of the most extensive parts of the county. The lake, near the town, the small lake, Loch Rouve, and the latter of which in winter becomes a portion of the large sheet of Loch Reavy. The level of Loch Reavy measures 122 feet and in winter 129 feet above the sea level. At the head of the above-mentioned lake is a portion of the lake of Clonlough, which is, from the coast, about a larger body of water than anyother of the Shannon. Its sources are in the county of Cavan, where the stream which feeds Loch Sheelin has its rise from Loch Sheelin, it passes through Loch Kane at an elevation of 212 feet above the sea, in the eastern county of Longford; thence, forming for a few miles the boundary between Longford and Westmeath, it enters the latter county, where it expands into the beautiful lake of D. varsal; passing from thence, through Loch Iron, its breadth becomes much less, and the stream, running under the line of the Royal Canal at Quin's Bine Aqueuduct, near Abbeyshrule, cuts off a small part of the extreme south of Longford, and flowing westward, Ballymahon, enters the Shannon at the head of the county, which contains the great lake of Longford, the third greatest part of the county, being in all respects similar to the Shannon, in the middle of which is a neck on which the only striking natural feature in this part of the line of Loche, a sheet of water about a mile and a half in length, of South of Edgeworthstown. The stream issuing from Loch Reavy flows north and south, reaching numerous other small lakes throughout the county.

The Shannon, between the points where it becomes boundary of the county, has a coast-line, including inings, of about fifty miles. Above Loch Reavy there are several inlets, the greatest of which is the mouth of the line of bogs from thirty to fifty tons, drawing: 3 to 4 feet water. The freight, including tolls, is penny per mile. The total amount of goods carried is directions, in the year 1854, was 9760 tons, of which are loaded are for navigation; but as yet there has been no attempt to remove the slight obstructions which prevent the passage of boats. The Royal Canal, entering the county at
nearly parallel to the Inny, turns northward at Ballymahon, from which its course is parallel to that of the Shannon river. At Abbeyshrule, near where it enters the county, its elevation is 223 feet above the level of the sea, and at Clondara, at its terminus, 139 feet. The intermediate descent of 84 feet is distributed over seven locks. A branch of six miles in length, on one level, is carried from the main line near Killashee, across the Shannon and Ardnagh river, to the town of Longford, in a small basin. Fly-boats for passengers have recently been established along the entire line to Dublin, which perform the trip from Longford to Dublin in fifteen hours.

The time required by the slow passenger-flyboats is twenty-two hours. The ordinary cargo comprises: straw, wood, coal, meal, grain, potatoes, pigs and black cattle, turf, bricks, and small quantities of iron from the Arigna works, down-wards; the return trade is chiefly in coals, merchandize, and manure. The trade-boats carry from forty to sixty tons, and draw 4½ feet water. The total number of these boats, conveyed by fly-boats on the canal, for the year ending 31st May, 1837, was 18,130; and by slow passenger-flyboats 152,327. At the time of this return the fly-boat system had not been extended beyond Mullingar. In the year 1837 the number of live pigs conveyed to Dublin by this canal was 34,349; of cases of butter, 3638; of tons of cornmeal and potatoes, 26,024; of tons of merchandise, 6247; of tons of coal and manure, 14,539; of tons of turf, 21,724; and of cases of salt, 6302. Producing a total tonnage of 84,683 tons, producing a total amount of toll of £9,64. 16s. 5d.

The country is in general well opened with highways, which are kept in good repair by the county.

The climate is not so genial as that of the midland counties in general. There is a considerable extent of wet and marshy surface.

Geology.—The entire district south of the Camlin consists of the flinty limestone of the central plain, with the exception of the Bogside: the limestone then crosses the bed of the river Inny round Ballymahon, and the other constituting the mass of Slieve Golder, and spreading northward to near the town of Longford. The immediate valley of the Camlin on its southern bank, and the immediate valley of the Little Camlin from Leitrim to Lackagh, consist of clay-slate, constituting a portion of the gruawacke formation of Cavan. Between the western extremity of the clay-slate field and the limestone, which crosses the bed of the Camlin near its junction with the Shannon, the boggy tracts are very extensive. The boggy tracts of Leitrim, are similar in character to those of the last-mentioned county. They contain large quantities of fine calcareous sand and marl. Marly clay also underlies many of the boggy tracts, in some places to a thickness of ten feet, and on the limestone rock; but in general the thickness of this bed of clay is one foot only. The average depth of the bogs is thirty feet: they contain the same vegetable matter and subsoil, and are reclaimable by the same means as those of the other midland counties.

A striking characteristic of the soil-forming formation [Leitrim], occurs near Loch Gownagh. The iron-stone is said to be equal to the best Swedish ore, and to be associated with coal-shale; but the traces of coal in this county are very indistinct. Leitrim is the most ancient county, containing the coal-tract of Loch Allen. Lead ore has been found in the quarries in the limestone district, and exposed in the beds of streams, but no workings have hitherto been attempted. Marble is raised in the vicinity of Ballymahon: it is a deep green. 

Sal, &c.—From the great quantity of bog and surface-water in the western part of the county, the soil in this district is not equal to that of the tract sloping towards the valley of the Inny. Here the characteristics of the limestone plain are found in a rich vegetable mould, producing silver heavy grain crops or sweet fattening pastures. The rest of the county is chiefly grazing land. Great quantities of butter are made by the farmers and cottiers. Pigs are reared in great numbers. The feeding of sheep is not much attended to.

Market-towns are defective. About 15,600 barrels of oats are annually sold in the market of Granard, and about 2,600 barrels at Edgeworthstown. At Ballymahon and Longford are also brisk markets for the sale of wheat, oats, and barley. The condition of the working population is very low. Sixpence per day, for eighty working days in the year, is the amount of wages stated for agricultural labourers in this county, in the Appendix to the Report of the Commissioners to inquire into the Condition of the Poor in Ireland, and which is generally on various occupations. But nevertheless good and healthy; but want of regular occupation and inefficient return for their occasional employment has added to a spirit of recklessness, the effects of which are apparent in the criminal returns.

The linen manufacture in this county is carried on, some activity in the neighbourhood of Newtown Forbes, where the first Earl Granard took pains to introduce it. The manufacture of coarse flannels and linens for home consumption is also carried on throughout the county. In 1831 there were in Longford 44 weavers, 12 fullers, 12 dyers, 12 warpers, 18 tanners, and 553 weavers of linen and woolen fabrics.

The only seats of the nobility are Castle Forbes, the residence of the Earl of Granard, and Longford Castle, of the Earl of Longford. Carrickglass, the seat of the Leftroy family, near Longford, on the south-east coast, is an extensive demesne; so also have Cooldin, Lissard, Fox Hall, Doory Hall, Castlecore, and Newcastle, which three last are in the vicinity of Ballymahon.

The county is divided into the baronies of Longford, on the north-west, containing the towns of Longford (pop. in 1831, 4351), Drumlish (pop. 574), and Newtown Forbes (pop. 537), and the villages of Cooldin (pop. 214) and Ballinamuck (pop. 165); Granard, on the north-east, containing the town of Granard (pop. 396); Longford, comprising the town of Abbeyshrule (pop. 316), St. Johnstown (pop. 255), and Bunlahy (pop. 299); and Ardagh, on the east, containing the town of Edgeworthstown (pop. 1001) and the village of Ardagh (pop. 145); Abbeyshrule, on the south, containing only the village of Abbeyshrule; and the town of Ballymahon (pop. 1001), and the villages of Lanesborough (pop. 390) and Keenagh (pop. 396); and Moydow, on the west and centre, containing the village of Killesha (pop. 331).

Prior to the Union, Longford sent ten members to the Irish parliament; two for the county, and two for Longford, Lanesborough, Granard, and St. Johnstown, respectively. The representation is now limited to two members for the county. In 1837 the constituency consisted of 1388 voters. The county returns are at Longford, and general quarter-sessions at Longford and Ballymahon.

The constabulary force on the Ist of January, 1836, consisted of 4 chief-constables, 23 constables, 117 sub-constables, and 5 horse; the cost of support of the establishment was £4829 9s. 2d., of which £2787 11s. 0d. was chargeable against the county. The number of persons charged with criminal offences, who were committed to the county gaol in the year 1836, was 607, of whom 557 were males and 50 females; the principal offenders were criminal offenders in 185 of the entire population.

The district lunatic asylum is at Maryborough, in Queen's County. The expense of its erection is £5071 10s. 6d. The county infirmary is at Longford, and there are dispensaries at Granard, Ballymahon, Edgeworthstown, and Keenagh.

There are barracks at Granard and Longford, together affording accommodation for 400 men and 200 horses.

Longford town is incorporated by charter of 26th Nov., 1779, and has a magistrates' court, consisting of the sheriff, two barristers, and two justices; there is a senechal's court with jurisdiction to 20l., but no corporate criminal jurisdiction nor borough gaol. The paving and cleaning of the town are under the control of commissioners acting under the 9th and 10th of George IV., c. 92. The town is not principally built on the southern bank of the Camlin: the county court-house and gaol, and the barracks, are on the opposite side of the river. The town is handsome, and has an appearance of cheerfulness and beauty. There have been four stores erected on the quay which terminates the Grand Canal on the southern side, in which direction several new streets are laid out. The Earl of Longford has recently built a butter-market and shambles. There are branches of the Bank of Ireland, and the Agricultural and Commercial Bank, established here.

Lanesborough also has a chapter of the 17th Car. I., but 104 deacons, 12 lackeys of flax, 15 tanners, and 553 weavers of linen and woolen fabrics.
the governing body has not exercised any corporate functions since the Union. Its situation, with a bridge over the Shannon, is favourable to trade, and it has a brisk market for agricultural produce. Great quantities of eggs pass through Lanesborough by the Royal Canal to Dublin and the English markets.

The castle was incorporated by charter bearing date 5th April, 3rd Carl. I.; but there are now no traces either of the corporate jurisdiction or of the lands bestowed for its establishment.

Granard, erected into a borough by charter of Charles II., in 1659, is a well-built town, consisting chiefly of one wide street, about half a mile in length. The remains of old Granard, a place of great antiquity, are still traceable a little distance to the west of the present town. A lofty earthen fort, the summit of which is 533 feet above the level of the sea, and about 150 above the surrounding plain, stands on the eastern extremity of the present town, and commands a fine prospect over the extended plains of Meath, Westmeath, and Longford.

Ballymahan and Edgeworthstown are rather large villages than towns. Both are centrally situated, and have brisk markets for grain.

The village of Ardclogh, containing 143 inhabitants, gives name to a bishop's see in the province of Armagh. The see, which was founded in the sixth century, was united to the bishopric of Armagh in 1639, and the union being dissolved, was afterwards, in 1742, annexed to the see of Down. The episcopal see of Tuam, the archbishop holding it as a suffragan of the primate. By the provisions of the Church Temporalities Act, the see, on the demise of the present archbishop of Tuam, is to be re united to Kilmore.

Population.

<table>
<thead>
<tr>
<th>Date</th>
<th>How ascertained</th>
<th>Houses.</th>
<th>Families</th>
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<tr>
<td>1792</td>
<td>Estimated by Dr. Beaufort</td>
<td>10,926</td>
<td></td>
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<tr>
<td>1812</td>
<td>Under Act of 1812</td>
<td>16,346</td>
<td></td>
</tr>
<tr>
<td>1821</td>
<td>Under Act 55 Geo. III., c. 120</td>
<td>16,987</td>
<td>21,650</td>
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<tr>
<td>1831</td>
<td>Under Act 1 Will. IV., c. 19</td>
<td>19,418</td>
<td>20,438</td>
</tr>
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</table>

History and Antiquities.—The territory at present constituting the county of Longford was originally a portion of the kingdom of Meath, and as such was included in the grant of Meath by king Henry II. to Hugh de Lacy, from whom it came through his son Walter to a female heiress, one of Walter's two daughters. An abbey was erected in the angles of her descendants, who lived in England, the territory was lost to the absentee owners. On the erection of the district into a separate county, in the 11th of Elizabeth, it remained for no traces of ever having been under the authority of the English law, or ever granted. A few were erected in the county, but no such traces were left, and all the other the parish church, was exclusively inhabited at this time, consented, on the 11th Feb., 1570, to surrender their interest, and take back their lands on English tenures. On the 12th of April, 1615, a commission was appointed by king James to inquire into his title to the territory. An inquisition was accordingly taken, by which it was found that, under a proviso in the grant of Elizabeth, the crown was entitled by virtue of the act of absences. On the 8th of August in the same year a commission was issued empowering the Lord Deputy and other officers to enter into the county and take possession of the lands to patentes. In the distribution which followed the natives had a preference. Upwards of 13,000 acres were assigned to members of the O'Farrel family, and of the entire county appeared to have been seized back by the O'Farrel, excepting only Longford Castle and Castle Forbes. The confiscations which ensued extended over nearly the entire county, and introduced almost a totally new proprietor.

The remains of the old town of Granard possess considerable interest. A tower, known in connection with the neighboring rampart of Dunca, which runs from Lough Kinalo to Lough Gowagh, a distance of nearly eight miles. This work is in all respects similar to the Dane's Cast [Down], and probably formed part of the division between the native races of the North and the English. To the new-comers, the remainder being cleared off, according to the old inhabitants. The rent reserved to the crown on the new grants was 3d. per acre. The plantation did not take effect to any great extent, as in 1641 the entire county appears to have been seized back by the O'Farrel, excepting only Longford Castle and Castle Forbes. The confiscations which ensued extended over nearly the entire county, and introduced almost a totally new proprietor.

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by the arc of the meridian is less than the altitude of a number of seconds equal to

\[ \sin \frac{\pi}{180} \times \sin \text{twice the latitude,} \]

where \( \epsilon \) is the Ellipticity. Assuming this at 1\( \frac{\pi}{180} \), the above is such a proportion of 1\( \frac{\pi}{180} \) as the sine of twice the latitude is to 1.

The reason why the preceding is not of more importance in the construction of maps lies in this, that when a large portion of the earth is mapped, the scale is necessarily too small to make such an error of any consequence; and when the small portion of the earth which is to be determined is nearly the same in every part of the map, and relative positions are not sensibly affected.

The method of finding longitudes and latitudes is given in the next article. The history of this problem, or rather of the two problems of finding one's place and of determining the longitude of a ship, is treatised, in the way of inquiry, in two books, in the fourteenth and fifteenth centuries; and as the latter part of the fourteenth century, the method of finding one's place is conveyed to us almost entire in the works of Ptolemy, where the principal things are given with great accuracy. In the fifteenth century, the method is improved by the invention of the quadrant and the astrolabe. The latter is a sort of magnifying glass, which, as it is a figure of the earth, shews the altitude of the sun or any other star, which is to be determined, and which is to be compared with the table of the sun or the star in the almanac. The difference of the two is the altitude of the sun or star.

The determination of the longitude requires simply accurate instruments for measuring the celestial equinoctial and the vernal equinox, and a measurement of the heavens, and one or other of the two following—either perfectly correct watches, or perfectly accurate tables of the lunar motions. The legislature of Queen Anne, which passed a act offering a reward for the discovery of the longitude, the problem being then very perspicuously solved, for want of one or the other, good watches or lunar tables, never contemplated the invention of a method, but only of the means of making existing methods sufficiently accurate. Any one of the legislature of George III., which repealed the former act and substituted a new one, limited the reward to those who should either proceed by improvement of chronometers, or of lunar tables. The rewards which were given were to Harrison for the former, and to Mayer's executors for the latter. The latter act is now repealed, and there does not exist any extraordinary offer of a sum of money for further improvements.

Many persons, imagining that, as in the case of the quadrature of the circle, \&c., a theoretical difficulty existed, were employed in such attempts to determine the longitude, and by the method, imagining that they should obtain the prize held out by the legislature. Some persons still occupy themselves in this manner; and it is impossible to persuade them either of the repeal of the acts of parliament, or of their having missed the longitude in the direction in which they undertook the business, without the aid of the sun or the moon, which are of no use in the determination of the longitude.

It is usual to measure terrestrial longitudes in time [Angle; Time]; the whole circuit of the globe being supposed divided into twelve (as in the diurnal motion) in 24 hours. It is also usual to reckon longitudes to 180° east or west, without proceeding farther. Thus a motion in longitude of 180° east will bring the traveller into 170° of west longitude. In astronomical writings, however, longitudes (both geographical and celestial) are measured from the point of the meridian of the place, which is fixed on as the starting-place. Thus we choose the Observatory of Greenwich, and the French that of Paris, as being in the same meridian; and while we express the relative position of the observer, we say that Paris is 2° 20’ 47” east of Greenwich, the French describe Greenwich as 2° 20’ 35” west of Paris.

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or the other of these principles, is useless, unless it be that of actually measuring the distance between the given place and Greenwich, the latitudes of both being known. Whether it be possible to use any other than astronomical means for the purpose, it would be presumptuous to decide; but there certainly is no other method which offers the most distinct prospect of success.

LONGITUDE AND LATITUDE, METHODS OF FINDING. We shall classify the various modes of determining geographical latitude and longitude partly by the instrument employed and partly by the nature of the phenomena. The problems are of course the same whatever instrument is employed, for the latitude of a place is the altitude of the pole of the heavens at that place, and the longitude is the difference between the time at the first meridian (we shall always suppose Greenwich) to be the first meridian) and the time at the place, at the same physical instant.

Determination of the Latitude at Fixed Observatories and upon Ships. In determining the latitude of standard observatories which are furnished with accurate circles, mural, transit, or altitude and azimuth circles [Circle], the altitudes or zenith distances of circumpolar stars are observed above and below the pole. When these are properly reduced, the difference, or the mean of all of the differences, gives the altitude of the circle (which lies between the places of upper and lower culmination of each star) is known, and hence the altitude is found. The first object of all astronomers is to find the latitude of their place of observation, and the details of this operation will be found in the making of most of the tables published in the observatories. The account of the latitude of Greenwich in the Greenwich Observations for 1836, p. lvi., of Cambridge in the Observations for 1833-4, and of Edinburgh, 1834-5, may be consulted by those who wish to know what the present position of the observatory with the most perfect means which we at present possess. 2. Again, if the altitudes or zenith distances of the sun be observed several days before and after the summer and winter solstices, or the altitude or zenith distance of the middle point, i.e., of the equator, may be reduced. Since the tables of refraction have been perfected by Bessel, these observations give a satisfactory latitude. Both methods may be considered to be independent, as they do not draw from other observatories to the great extent is required in the solar tables to reduce the observations of the sun to the solstice. (Pond's Lat., Greenwich Observations, part V.)

In the observatories of Europe, and generally where the views are limited to the fixing the exact place of the sun, the latitude is best determined by circumpolar stars; near the equator an independent latitude must be deduced from circum-solstitial observations.

3. Before the introduction of circles, the latitude at fixed observatories was determined from comparing two instrumental measures, the mural quadrant and the zenith sector. The zenith distances of stars near the zenith, and to the north or south of it, were observed by the zenith sector, and also the distances of the same stars from the pole or the equator by the quadrant; hence the arc between the pole and zenith (the co-latitude), or between the zenith and equator (the latitude), was deduced. The place of the pole was found on the north quadrant from circumpolar stars, and the place of the equator on the south quadrant, from observations of the sun near the solstices, as we have already shown. When the present zenith tube was erected at Greenwich, one of its intended uses was to perform the same office for the mural circle as the original zenith sector did for the quadrants.

The Latitude Differentially. The zenith sector, whether of the proper size and construction, is perhaps the most accurate instrument for determining latitudes differentially, i.e., assuming data which are either known or can be obtained from fixed observatories. With this instrument, the median zenith distances of several stars which pass near the zenith may be observed with great certainty; and as the polar distances of those stars are or may be determined at first-rate observatories, the polar distance of the zenith, or the co-latitude, is known. The latitudes for the trigonometrical survey of Great Britain are thus deduced by comparison with Greenwich, the instrument employed being a very fine 8-foot zenith sector by Ramsden. With a better knowledge of the proper motion of the stars, the sector might be used at two places, and the arc between those places obtained from observations of the same stars at two epochs, without reference to any other observations; but at present it is safer, when practicable, to refer directly to corresponding observations made at a fixed observatory.

2. Another differential method has lately been much used (at least by continental astronomers), in which the transit instrument also employed [Closed] is employed [Closed]. The star of the instrument is placed north and south, and carefully leveled, in which case its line of sight will describe the prime vertic. In the figure, let P be the place of the pole, Z the zenith, EZW the prime vertical, which is also the line described by the middle wire of the telescope when it revolves. Let a, b, c, d, e, f, g, h, i, j, k, l, m, be the places of the polar distance of the stars observed at S and S', and the times noted. Then PS, the polar distance of the star, is known, and the angle SPS' is equal to the time between the observations; consequently the PS' or SP, or is known. In practice, the SP' or SP is obtained from a two-stationed triangle is S'ZP, and tan PZ = tan (PS', PS) X cos z SP, from which PZ or the co-latitude, is obtained. This is perhaps the most accurate mode of determining the latitude with moderate instrumental means. The object of the instrument must also be perfectly steady during the levelling and the observation. Differences of latitude may be determined by the transit instrument independent by observing the same stars at two stations.
notes the time. Neither can they be considered as portable in ordinary circumstances, when large enough for convenience and sufficient and in a permanent situation; but it must be confessed that few observatories, circumstantial common material, allow of an accuracy out of either. The observations should be confined to stars, as neither of these instruments will keep them adjusted well under the Sun.

The reflecting circle was used by the French astronomers to determine the lesser and greater latitudes. Since that time the instrument has been much better made, and the catalogues of stars which have issued from Königshof, Greenwick, and Cambridge have supplied more accurate and convenient means of using it. If the levels are very good and stable, they will make the observations of one fine night, everything being favourable, should bring out the latitude within 2° or 3°.

The last class of instruments is noticed in that of reflecting instruments, including the reflecting circle of Troughton of the place. With Troughton's circle, the limbs are very perceptibly when the instrument is held in the hand and a high power applied. If a stand cannot be afforded, the Sun is the best object to observe with a reflecting instrument. It is always supposed that the observations are made with an instrument without any passage, and the time noted for computing the reduction to the meridian. The meridian altitude of the Sun, as it would be if observed on the meridian and freed from instrumental and other errors, is then computed, and as the level of the Sun changes, so the modification of the declination of the Sun at its passage over that meridian may be computed from the 'Nautical Almanac.' The meridian altitude + the south declination of the Sun, or the north declination, is, in the northern hemisphere, the colatitude of the latitude which is observed in the course of the Sun's progress.

In the sextant, the index error should be carefully determined before and after each day's observations, and the difference between them amount to slightly more than 2°, which would make it impossible to observe objects, and any fault in determining the index error will vitiate the latitude to half its amount. While the circles will probably give a latitude of nearly 6°, with a very careful series of observations of the Sun, the sextant used with equal care might be out 10° or 15°. It is evident, therefore, that where accuracy is an object, the observer ought, if possible, either to use a circle or make the sextant meet a standard, and observe stars as we have above described, with which from Greenwich, or any place, as we have seen, it is certain that in low latitudes the Sun cannot be observed all for the latitude, nor any object which is elevated 6° or 7°.

In this case stars must be used; and without a stand, the observation, using high magnifying powers, would be difficult and uncertain in the latitude. In speaking of the horizon we always mean a mercurial horizon, unless otherwise is specified. The glass of the roof should be truly plane and parallel, but by reversing the horizon for half the observations any error of this kind is destroyed. The circle is sometimes conveniently composed of a horizontal, and troublesome from its tremors whether the observer is in motion. Several substitutes have been used. Oil or treacle has been adopted with good success where the shaking from carriages, &c. has prevented the use of mercurial glass. Sometimes the glass is fixed in a case applied to its surface, or by a fluid below it, so as to make a reflecting surface, but these generally absorb too much light to be used conveniently for stars, and are not very trustworthy. The best substitute seems to be a piece of speculum metal, ground plane, and laid horizontally by a level, the brightest, and therefore the best for stars, but it must be remembered that horizons which are not self-regulated, by being fluid, are scarcely to be trusted under a hot Sun. Troughton's reflecting circle is rather heavy, and reading the levels is very troublesome, especially at night, but it is very accurate, and fewer observations are required. Borda's reflecting circle may be made much smaller and lighter, but demands the most exquisite workmanship, a greater number of observations, and more reduction. The sextant requires great precaution, and checks in its use. But with any of these a skilful observer will get the latitude very near. Sextants are made of all sizes from 10 inches up to 30 inches, and 15 inches down to the snuff-box sextant of 1½ inches radius. Travellers who cannot afford to carry much weight, the 3-inch sextant is very convenient. In a recent communication to the Royal Astronomical Society, Mr. Lassell states, that with a 3-inch sextant he once made by Dolland, which packs up, stand, horizons, and all, in a box 4½ inches square and 2½ deep, he found that he could get the latitude within 1°, and the time to 1½ by observations of stars. The horizon was of speculum metal, ground by himself, and ret true by a level. The observations were made about one hour after sun set, and, as he says, the sextant is 'not to be identified with the ordinary opinion, but one observer differs more from another in sextant observations than in any other class of astronomical instruments;' with the snuff-box sextant, altitudes may be found within 1°. The state of the barometer and thermometer must not vary, and the observer must retire to some quiet place, in order to compute the true refraction. At the same time we may remark, that if the observations be balanced, i.e. if the altitudes to the north have nearly corresponding altitudes to the south, the refraction will affect the observations only in the same ratio, and there is no need to take any rea on the barometer and thermometer will be quite insensible.

5. Observations of Polaris may be taken at any time for the latitude, and there are tables for approximate reduction given in the 'Nautical Almanac' for each year.

At sea the observations may be made with the sextant, which can be used, and the latitude is generally got by observing the altitude of the Sun's horizon when the meridian, above the sea horizon. This is rather a rude process, but the resulting latitudes are generally true to 1°, or at worst to 2°. The new moon, since 1854, the date of the 'Nautical Almanac' and the extended 'Nautical Almanac,' may be very conveniently used for finding the latitude at sea, and the brighter planets and stars are often observable on the meridian. The planets may also be observed in any two altitudes of the Sun, and the time elapsed between the observations, according to any two altitudes of any two known celestial objects, one of which is near the meridian, and the other distant from it, as persons not acquainted with spherical trigonometry may safely determine, the actual latitude. There is a considerable difficulty in seeing the sea horizon by night, which is somewhat reduced by getting as near as the level of it as you can.

Determination of the Longitude.—The determination of the longitude of any place on the earth's surface, astronomically considered, resolves itself into two parts, the finding the time at the place of observation, and finding the time, at the same moment, on the first meridian (we shall always speak of Greenwich, or at any place the longitude of which from Greenwich is known), it will be more convenient to classify the methods of finding the longitude by the phenomena than by the instruments.
Determination of Time at the Place.—1. This is best and most easily done by a transit instrument, and the time, when found, is kept by a clock or chronometer. [Transit.] The transit however is neither a very portable instrument, nor is a proper situation for it, we mean one sufficiently equidistantly found.

2. The time may also be found from the altitude of the sun, planets, or stars out of the meridian. Thus let P be the pole, the eastern star causes twice the error in the deduced hour angle that a similar error does in the western star; the concluded true error should therefore be halved. The mean error 26°.5. The reader will see that if the observations are made at exactly the same altitude, any mistake as to the index error, refraction, or any instrumental defect, will be of without much trouble. But, as has been mentioned before, very perfect observations or with reflecting instruments can scarcely be made unless the instrument is mounted on a stand. From good notes of observations of a star east and a star west, the time may be determined to 0.3 or 0.4. The time is required to reduce circumpolar observations to the time for finding the latitude, and again the time is required in order to deduce the time from altitudes. An approximate latitude, such as results from the largest observed altitude about the meridian, will give the time near enough for the reduction to the terminal point, and the time may be computed rigorously with the exact latitude. Provision may be made for this revision by taking as differences the differences of the logarithms at each step of the first computation; but generally speaking, when the altitudes for time are taken near the prime vertical, as they are at the moon, a small error in the latitude has so little effect on the hour angle, that the approximate latitude is near enough.

Determination of Greenwich Time Astronomically.—1. There are two phenomena which are seen at the same moment from whatever part of the earth they are visible, viz. a lunar eclipse and the eclipses of Jupiter's satellites. The first was the only phenomenon from which longitudes were determined prior to the invention of telescopes, but it is not of frequent occurrence, and unfortunately cannot be observed very exactly. It has been proposed to measure equal quantities of the eclipse on each side of the middle, and formerly astronomers were very careful to note the moments when the umbrae are covered or uncovered to determine the exact time. But at present, eclipse telescopes are exceedingly improved, and there are many more accurate means of determining the longitude, and of more frequent occurrence; and recent telescopes are of no value in the theory of the moon's motions. The eclipses of the satellite especially of the first satellite, are much more common, and have been of great use in modern geography. The time at which the eclipses take place, i.e. when the satellite, passing into the shadow of Jupiter, is lost, or passing out of the shadow, becomes visible. (Emerges,) are set down in the Nautical Almanac at the time they would be seen at Greenwich, and the observer at any other place notes when this phenomenon does actually happen at the place of observation, and the difference between the two times is the longitude of the place. If the time of the eclipse is later than at Greenwich, and west if it is earlier than at Greenwich, and west if it is earlier. If it is not this method, so easy in practice, is by no means as accurate as it might at first sight appear. The theory of the satellites is scarcely to be considered as perfect, but this objection might be obviated by comparing corresponding observations, and might be very much diminished by correcting the predictions of the Nautical Almanac by observations made at Greenwich, or any other well known place, about the same time. But the phenomenon is gradual and not an instant one, and the appearance or disappearance of the satellite varies greatly with the position of the observer. The telescope, the eye or mood of the observer, the atmosphere at the place of observation, &c., so that a longitude deduced from an eclipse of the first satellite may be considerably different from the truth. With small telescopes we believe that eclipses of the second satellite are more than twice as uncertain as the first, and that the third and fourth satellites are not worth observing for this purpose, being much inferior to good lunar distances. A large mass of eclipses of Jupiter's satellites would be required to determine the time with the same accuracy as the first and the same observer, and where the immersions are nearly equal, the number of immersions will, however yield a satisfactory result. The aperture of the object-glass employed, and also the sight of the observer, should correspond as nearly as possible with the telescope used by the observer at Greenwich, or whatever place is adopted as a standard of comparison. It is not generally advisable to use a smaller telescope than an achromat of 2 inches aperture for this purpose, or one larger than 3 inches.  

2. The time at Greenwich is most accurately determined by solar eclipses or occultations of
The computations are rather long, but not very difficult or abstruse. The beginning and end of the solar eclipse should be observed; the latter is the better marked phenomenon, and if the eclipse be annular, the commencement and breaking up of the annulus. Recent observations have shown that these appearances are not instantaneous, and therefore that longitudes deduced from them are not free from uncertainty. The occultation of a fixed star by the moon is the result of an assertion, and in the position of a lunar mountain, or disappear too late in a lunar valley. The occultation should be observed at both places, which is not often possible, and the issue must be tested in order to be certain. The longitudes of the known and of the unknown place are to be taken or both west, the difference will be the true longitude of the unknown place, east or west of the known one. Some telescopes give a larger image of the moon than the eye, and the details of the outer parts of the moon can be seen. The longitudes are then marked according to the aperture of the object-glass. The resulting errors in the longitude are of the order of the second limb as often, if possible, as the first, and, keeping the results separate, by taking a mean of the two. There is a mistake among many observers, that there is no need to care for the position of the transit. Now any considerable error in the position of the transit does occasion an equivalent error in the longitude, and though it can be corrected, if there are data for determining the want of adjustment, this gives an error of obser
dation. The transit should be made as near as possible to the time of her culmination, and it is proper to reverse the instrument on alternate nights. When the place of observation is very distant from Greenwich, it will be necessary, until the quantities a, b, c, d, mentioned in the note, be computed, to add the correction to the Greenwich time, and to subtract it from the Greenwich time of the observation. The moon's semi
diameter in R.A. must be computed for the time of observation, and this gives the mean longitudes. The transit must be made near the time of her culmination, and therefore most safe, to compute the R.A. of the moon's bright limb on two hypotheses of longitude, one the minute above and the other the minute below the approximate value. These results are to be compared with the exact longitudes computed for the one of the hypothetical longitudes. This is a long process, but it is strictly accurate, and the steps are intelligible as the computer proceeds. The method of determining the exact longitudes of the moon and stars is the best for places very distant in latitude or longitude, where the same occultations cannot be seen. It is nearly as good for the most distant as the nearest place, and the variation of the error of the lunar tables may be computed from a knowledge of the place and the time of observation. The phenomenon presents itself very often. It does however require a very nice and well fixed instrument and a careful observer, as 1° error in observing the R.A. of the moon will be an error of 1° in longitude or latitude. A considerable mass of observation becomes useless if the longitudes corrected by corresponding observations will be more than 2° or 3° wrong.

4. But where a transit instrument cannot be carried, or cannot be used, as at sea, the longitude must be found astronomical, by the distance of the moon from the sun, planets, or fixed stars, measured with a reflecting instrument. This apparent distance is reduced to the true distance, i.e. such as it would be, if seen from the centre of the earth, which is done by means of the 'Nautical Almanac' for every three hours Greenwich time, as in the following example. The longitude at Greenwich time 12 hours, and the longitude is found every day, by comparing the
actual time at the place of observation with the Greenwich
time at the same moment, given by the chronometer. We
have already seen that clocks and chronometers, when
properly adjusted, give the same time; but it
is merely folly to rely upon one or even two chronometers in
a ship, or in important geographical researches. These are
to be compared from day to day, to ascertain that they are
not suddenly altering their rates, and also whenever any
alarm of this rate alteration is noticed, which determines
the Greenwich time (for that gives the error of each of the
chronometers), or the time at the place. In reducing
observed lunar distances to the true lunar distances,
the sun and moon, and moon and stars at the time of
observation, or at some time deemed correct, and at some
observing stations are commonly set to measure these altitudes
at the moment the lunar observer gives a signal that he
has made the contact; indeed a fourth person is sometimes
engaged to act as an observer. On shore this profusion of
instruments cannot always be obtained, and so we
are at all times alert to ascertain the altitude of the
place, or whether the moon is visible, and the
observer may proceed thus: 1st, an altitude of the
sun, planet, or star; 2ndly, an altitude
of the moon’s bright limb; 3rdly, three lunar distances;
4thly, a second altitude of the moon; and 5thly, a second
altitude of the sun or star, noting the chronometer at each
observation. He will then have the means, by simple pro-
portion, of reducing the altitudes to what they would have
been had he been observing the lunar distances.

We should advise observers, who are properly furnished
with chronometers, rather to make a large number of
observations on a few favourable nights, than to take a few
observations on many nights. By observing several lunar
distances on the same nights, the results from
the stars and planets east and west given in the ‘Nautical
Almanac,’ the errors of the instrument may be in a great
measure eliminated, and the error of observation much
diminished. It is evident that if two equal distances are
taken, one east of the moon and the other west, then any
error of the instrument, such as erroneous index error,
want of parallelism in the glasses or telescope, excentricity,
&c., would be the same in each, and therefore could be got
rid of. In like manner, if two observations on the same
side of the moon are taken, it is evident that the
instrument has some error which is not index error.
On this subject we shall have occasion to speak again in
treating of the sextant. The luni-solar observations are
generally preferred by seamen (and they are perhaps the
most satisfactory), partly because the altitude of the
sun, by giving time at the place, is immediately applicable to
the determination of the longitude. The longitude from
lunar distances, however carefully taken, cannot be relied
upon to very great nicety. With all appliances, a distance
to 50°, the difference in longitude to 20°, may
scarcely be considered as certain, and the errors of the
lunar tables will not unfrequently double this error. At
sea it would not be safe to rely on any series of lunar dis-
tances for the determination of longitude, or of any point
within a degree, but this is quite sufficient for the purposes
of navigation in open seas.

The computation of lunar distances is very easily
performed by Thomson’s tables, which are exceedingly
convenient, and require only a little more extension. They
are approximate, but near enough for the navigator and
the traveller en route. As the last accuracy can only be
given after the errors of the lunar tables are corrected, there is no need of much refinement in the process.

It has been proposed to determine the longitude by the
photometer on shore by taking altitudes of the moon with the mercurial horizon; and
between and near the tropics the method may be a good one. In
these latitudes the motion of the moon in altitude is most rapid, and its motion is
so rapid as to be discerned by observing the distance between the moon and its image
seen by reflection. The bright edge of the moon is a good object in reflecting instruments. The calculation may be

* In the first place chronometers are liable to accidents, and secondly, to change their rates, and that sometimes by jumps. With two chronometers, errors of the same nature would, in the first place, the one chronometer may be neglected. The best two day box chronometers may be brought for the measurement of the longitude in less time than the above instruments in a few hours. There is an idle opinion that chronometers are not good
photometers. They are perhaps a little more liable to injury when left in motion, than other watches, an account of the heavy compressed balance, but after a few years of years, without any particular care, we believe that
these good pocket-chronometers, not larger than common watches, will keep the time for a month, as well as it can be kept by lunar distances.
physical moment with A, a would see \( B \), if it were visible, just 10 minutes later than he does actually see a, and therefore the explosion of \( B \) is known in time proper to A's observatory; but it is also seen by \( B \) at the same moment in his observatory. In like manner any number of intermediate stations of observers and rockets may be interpolated between two distant points, A and B. The relative personal observation of the observer at A and B must be taken into account both as astronomers and observers of signals, but the personal observation of the intermediate observer does not affect the observation. In this way the longitude of Pans from Greenwich was determined. (Phil. Trans.)

Finally, the longitude and latitude of one place from another may be determined by measurements on the earth's surface, if the figure of the earth be sufficiently well known. The geodetical latitudes and longitudes are in many cases found not to agree with those found astronomically, owing, as it is supposed, to some variations in the density of the earth in the neighborhood of the place of observation. It is however a convenient way of finding the latitude and longitude of points near a well-established observatory, and connected by trigonometrical survey.

Let the distance \( PG \) in feet and the bearing \( KG \) of the point P from the observatory G be known by survey, and \( GN \) be an arc of the meridian. Then drawing \( PK \) perpendicular to \( GN \), \( PK = PG \times \sin 2 \angle P G K \), and \( KG = PK \times \cos \angle P G K \), when \( PK \) and \( KG \) are known, in feet. Find the value of \( \log \) seconds in latitude approximately by supposing 1' to be 100.8 feet, and add or subtract this, as the case may be, to the latitude of G, which will give the latitude of M, the middle point; call this \( \lambda \). Then the value in English degrees of a latitude of M is

\[
\text{number, log} = \log \sin \lambda + 2 \log \cos \lambda + \frac{3}{8} \log \cos 2 \lambda + \frac{5}{8} \log \sin \lambda
\]

With these values of a degree of latitude and longitude the distances \( GK \) and \( PK \) are readily converted into areas of latitude and longitude.

On this subject the reader may consult the 'Encyclopedia Metropolitana,' art. 'Figure of the Earth.' The solution of the problems assumed to be known in the foregoing article may be found in all treatises on astronomy and in most collections of tables of navigation. We recommend Thomson's 'Tables' as very convenient, and sufficiently accurate for the traveller and navigator, although the names of the tables and methods which a man has become accustomed to is not impossible. It would require too much space to give reasons and explanations for the opinions here advanced, but we shall give two or three recommendations which few sailors will regret to have followed. The first is to make, when practicable, large masses of careful and extended observations, and especially to observe the rules given above in nullifying instrumental error, by making such observations that a given error will have contrary effects in such a way. Secondly, to be very careful in selecting the instruments and their timekeepers, which should come from good makers, and be carefully tried before starting, especially at such temperatures as the traveller may expect to meet with. A chronometer which is excellent for a polar expe- dition may be an indifferent watch on the Tigris or in the heart of Africa, and vice versa. For any overland expe-

P. C., No. 869.
The Eastern empire, and which the Longobards, with the assistance of the Avari, a tribe of the Huns, totally defeated. [Alboin.]

In the year 568 Alboin crossed the Julian Alps, near Forum Jultii, and led the Longobards to the conquest of the plains of North Italy, which have ever since been called by them the Lombard territories. Thus became the capital of the Longobards. Together with the Longobards there came into Italy thousands of men of other tribes, which followed the standard of Alboin, namely, Saxons, Suevi, Gepids, Bulgarians, Slavs, and Lombards. [A.D. 563.] After Alboin's death the chief of the Longobards elected Clefo as his successor, A.D. 573; but on his being murdered by a servant, eighteen months after, the nation became divided among a number of dukes, a duke of Treviso, a duke of Faenza, a duke of Cremona, a duke of Brescia, besides thirty dukes in so many other cities. Under these dukes the Longobards penetrated south of the Apennines, and conquered Tuseyue, Liguria, Umbria, and part of Campania. The Byzantine emperors restored Rome and its duties. Padua, Genoa, Apulia, Calabria, Naples, and the southern extremity of Italy with Sicily. 'The government of the dukes,' says Warnefrid, 'was very oppressive to the Roman or native inhabitants, many of whom rebelled, and the empire disintegrated, until Clefo restored their property, and obliged to pay tribute for the rest.' After ten years of this disorderly dominion of the dukes, the Longobards chose for their king Autari, son of Clefo, 586—592. His reign was prosperous: he repulsed the attacks of the Franks on one side, and the Germans on the other; and he carried his arms into southern Italy, where he founded the duchy of Benevento. After the death of Autari, his widow Theodolinda, who was a daughter of the king of Boaria, or Bavaria, married Agilulfus, duke of Turin, who was acknowledged by the Lombard and Byzantine kings. Agilulfus, through the persuasion of his wife, became a Catholic, most of his countrymen being Arians, and made peace with Gregory the Great, bishop of Rome. Theodolinda built the church and palace of Monza, where she was laid in state in a white marble sarcophagus to be from the cross of our Saviour, which is riveted inside of the crown, which has served ever since for the coronation of the kings of Lombardy. Agilulfus took Cremona, Padua, and other towns which still sided with the Eastern emperor. Truces were repeatedly made between the Longobards and the Byzantines of Ravenna. Agilulfus died in 615, and was succeeded by his son Adalbert, under the regency of Theodolinda. Adalbert, ten years after, having lost his mother, and being deprived of the crown, and Ariovistus was elected in his stead. Little or nothing is known of Ariovistus, except that he reigned twelve years, and died A.D. 636. It was under his reign that Columbanus, the Irish monk and missionary, and the Lombard king and his coadjutor, banished to the mountains of the Po, came into Italy and founded the monastery of Bobbio, near the Ligurian Apennines, which afterwards became celebrated for its wealth and its collection of MSS.

After the death of Ariovistus, Rothar, son-in-law of Ariovistus, was elected in his place. Rothar was the first who made a compilation of the unwritten laws and usages of the Longobards, and published them in a kind of barbarous Latin, under the name of Edeut, with his own preface and observations. This edict drew a marked distinction between the Franks on one side, and the Lombards on the other, which continued to live under the Roman law. The distinction between the two races, the conquerors and the conquered, seems to have continued until the fall of the Longobard dominion. By a subsequent law of King Liutprand the manability of the Lombards to Rothar, it was enacted that if a Roman married a Longobard woman, the children born from such a marriage were Roman, and followed the condition of the father. The laws of the Longobards resembled in their spirit those of the Burgundians and otherbarbarians. The compensation was awarded for most personal injuries, assaults, wounds, mutilation, and for homicide. Adultery and theft were punished with death. Emigration was forbidden, and sedition or mutiny was a capital crime. The judge, who was authorized against his successors, was a judge of last resort, and enjoyed to decide causes within a limited number of days. Single combat or duelling was tolerated, though its practice was characterised by Liutprand as absurd. Upon the whole, the laws of the Longobards were among the most rational and equitable of those of the northern nations which divided among themselves the ruins of the Western empire, and as such have received the commendation of Montesquieu, Gibbon, Johann Müller, and others.

With regard to the political system of the Longobards, it may be considered as having been under an elective king, who was the chief of the nation, something like the subsequent confederation of the German empire. When Autari was elected king, the dukes in a general assembly agreed to choose as his successor the candidate preferred by the Emperor of the Romans, or by the pope, Gregory the Great. And the Longobards were divided into six duchies, Sutri, Treviso, Faenza, Cremona, Brescia, and Benevento, the dukes of Spoleto taking several towns of Sabia, and the dukes of Friuli repeatedly engaged in deadly warfare against the Avari and Scelvianians, without the rest of the Longobards, or the king himself, interveining as parties in these quarrels. The orders and statements of the king required the sanction of the people, or army (by the two words are used as synonymous) of the Longobards. The king was supreme judge and commander, but not absolute legislator. These relations were maintained with the emperor, until the latter became the suzerain of his subjects with regard to the treatment of their Roman subjects the case was somewhat different. Several modern writers, Giannone, Muratori, Denza, Bossi, and others, have considered the Italians, or Romans, as they were called, and their relations with the Longobards. The latter, instead of legislating with their Longobard masters; but Manzoni, in a very sensible and soberly written dissertation on the subject, has dispelled this delusion. [Ducoro sopra alcuni punti della Storica Longobardica in Italia, annexed to Manzoni's works.]

The 'Roman' or Italian subjects of the Longobards were looked upon as a conquered and subject race, not exactly like the Helots at Sparta, but still they had neither the same political nor civil rights as the conquerors. Benevento, who assigned to him the right of succession, in the end proved an ally against the caprice of their Longobard rulers; they lived among themselves according to the Roman law, but in affairs between them and the Longobards they were judged by Longobard judges and according to the Longobard law.

Rothar, having conquered the towns of the Thussia Lennsis, or Riviera of Genoa, and defeated the troops of the exarch of Ravenna, died A.D. 633, and was succeeded by a man named Ingelbertus, who was elected king by the Longobards for having seduced his wife. Armepertus, a nephew of queen Theodolinda, being elected in his place, reigned till the year 661, when he died, and his two nephews, Peribertius and Goderdarius divided the supreme authority among themselves. In the end, Goderdarius, perishing without an heir, was repulsed by Constans, who was elected king in his place. Goderdarius fled to Nice, and in the end died from wounds received while engaged in battle against the Lombards, who had invades Etruria, Liguria, and several towns in the territory of the Etruscans. The Lombards then proceeded to make war against the Saracens, who were then the masters of a large portion of the country of Samnium, which had remained desolate in consequence of the wars. Warnefridus (b. c. 29) adds...
The descendants of those Bulgarians continued there in his days; and although they spoke Latin, had not lost the use of the language of their ancestors; a remarkable passage, which shows that the general language of Italy in the time of Charlemagne was still the Latin, and was adopted by the northern tribes which settled in the country.

Grimoaldus added several chapters to the edict of compilation of Rothar, and after a successful reign of nine years, died in 688, leaving his son Conperti, who had married Ermelinda, an agreeable woman. He was succeeded by his brother, the infant son Lipterus, who was put to death by Aripertus, duke of Turin, who assumed the crown. Asprandus, whom Conperti had appointed guardian to his son, fled to Borna with Liaprandus, the son of Asprandus. Nine years after the death of his parents, in the year 725, Liaprandus and the people of Rome, at that time alienated from the Eastern emperors in consequence of the schism of the Iconoclasts; and he was also friendly with Charles Martel, to whom he sent assistance against the Saracens. After the death of Liaprandus, and two years later, Liaprandus raised many churches and other buildings. He was, says Varnerlii, valiant in war, but fond of peace; of a forgiving disposition; although destitute of learning like most of his countrymen, yet gifted with judgment and prudence. The first thing he did was to put an end to the dissensions which the city was then in, and to repair the church of S. Lorenzo.

Liaprandus reigned thirty-two years. He was the most illustrious of the Longobard kings. He took Ravenna and the Pentapolis, but afterwards made peace with the Byzantines and restored Ravenna, which was then in the hands of a party of the Saxons, and after a battle, in which Liaprandus was drowned in attempting to cross the Ticinis, Asprandus was acknowledged king of the Longobards; he died soon after, and his son Liaprandus succeeded him by common consent.

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His laws are joined to those of his predecessors Rothar and Giswald, in the collection of the laws of the Longobards. Liaprandus died in 744, and was succeeded by his nephew Desiderius, who was driven from the throne by the people of Rome. Liaprandus, however, was restored to the crown, and was afterwards elected king of the Longobards. Desiderius was a prudent and upright man, and continued to live. After the death of Zacharias, Stephen II. succeeded him, who began to intrigue with Pepin, king of the Franks, who wished to extend his power over the kingdom of the Longobards. Desiderius was a man of great ability, and was succeeded in the year 756, and Desiderius, a Longobard duke, was elected king of the Longobards. Desiderius renewed the quarrel of the Franks with the pope, and not only seized the towns taken by the Franks, but likewise devastated the duchy of Beneventi and very severely plundered the state of Beneventi. Charlemagne came into Italy a.p. 774, defeated Desiderius, and carried him prisoner into France, where he became a monk. Adelchius, son of Desiderius, fled to Constantinople, from whence he returned to Italy with some troops, and was defeated by Charlemagne at the battle of Poitiers, in the year 778. Desiderius then retired to the island of Sicilia, where he endeavored to unite the Lombards with the Franks, but was defeated by Charlemagne in the year 781.
such a manner as to conceal itself from other fishes. The long filament at the tip of the nose is used to attract the smaller fishes as a bait; and when they are sufficiently near, they are seized by this voracious fish.

In the genus *Antennarius* there is the same sort of free rays on the head. These rays, which also are often terminated by an appendage; the following rays, augmented by a membrane, are sometimes much enlarged, and at others are united to form a fin. The dorsal fin occupies nearly the whole extent of the back; the body is often best described by the name of its appendages, rays. Cuvier, by filling their enormous stomachs with air, expanded themselves like a balloon; their fins enable them to creep on land, where they can live for two or three days, the pectorals, from their position, performing the functions of hind feet. These fishes inhabit the seas of hot climates, and are said to attack the present family (Palasius) is distinguished by the following characters: - Head horizontally flattened, broader than the body; the mouth deeply eleft; operculum and suboperculum spinous. The anterior dorsal is shorter, and is furnished with three spinous rays; the posterior dorsal is long, and supported by soft rays; the anal fin, which is opposed to the last, is accompanied by some spinous rays. Cuvier has noticed that the species of genus *Lophius* keep themselves hidden in the sand to surprise their prey, but those of the genus *Lophius*, and the wounds inflicted by their spines are said to be dangerous.

Lophiodon, an extinct genus of mammiferous quadrupeds nearly approaching in the structure of the teeth to the Tapirs and Rhinoceroses, and in some respects to the Hippopotamus, separated by Cuvier from *Palaeotherium* (with which, as well as *Anoplotherium*, it is closely related). It is described in detail in the following article. Mr. Blainville named the genus *Tapirotherium*. *Lophiodon* differs from *Palaeotherium* in the broad molar teeth, instead of exhibiting a continuous series of double crescents running longitudinally, have transversal elevations (described as transversals), more or less furnished with filaments. The species of this genus keep themselves hidden in the sand to surprise their prey, but those of the genus *Lophius*, and the wounds inflicted by their spines are said to be dangerous.

The fourth and last genus of the present family (Plectranthus) is distinguished by the following characters: - Head horizontally flattened, broader than the body; the mouth deeply eleft; operculum and suboperculum spinous. The anterior dorsal is shorter, and is furnished with three spinous rays; the posterior dorsal is long, and supported by soft rays; the anal fin, which is opposed to the last, is accompanied by some spinous rays. Cuvier gives the following as the generic characters of *Lophiodon*:

1. Six incisors and two canines in each jaw; molar teeth on each side of the upper jaw and six in the lower.

2. A third elevation (colline) on the last lower molar which is wanting in the Tapirs.

3. Upper molars are not furnished with transversal elevations as in the Tapirs, but present a longitudinal series of tubercles, or a conical and isolated one.

4. Upper molars have their transversal elevation more oblique, and in this respect approach the Rhinoceroses from which they differ by the absence of crochets on these elevations.

The dental formula of *Lophiodon* then will be:

- Incisors: 6
- Canines: 1–1
- Molars: 7–7

The rest of the osteology of this extinct form indicates the affinities above mentioned; but many parts of the skeleton are still unknown, and particularly those essential to the structure of the body, the number of the vertebrae, the number of the ribs, and the length of the skull. The number of some of these bones, together with the fact that they must have lived in a temperature suitable to the existence of Crocodiles and fresh-water Turtles (Emya and Trioceros), creatures which, at present, inhabit warm climates.

The localities are in South America, and also at Argenton and Noissons. Argenton for three other species. Buochwarden for two more. Montaubaud for two more, of which a few are known to occur in other parts of the world.
principal marks of distinction in the structure of Loranthaceae are a one-seeded inferior fruit containing a single erect ovule, a fruit consisting of a peculiar viscid matter resembling birdlime, and a valvate corolla with the stamina opposite the petals. There is but one species, the common mistletoe. Viscum album, which is distributed almost any considerable degree the plant which it attacks, unless it exists in unusual quantity, so in India, where Loranthus are common, the injury sustained by vegetation is according to the report the most rapid of the parasitic plant. Mr. Griffith states that a species called Loranthus Scour- rula, which is generally attached to Melastoma malabathricum, or other shrubs, frequently destroys them to a considerable extent; others which are minute in comparison with the ake, especially such as grown on trees, produce no appreciable injury. Although the nature of the pericarp of plants seldom forms a part of their orbital distinctions, yet it is here employed— for this reason, that the viscidity of the fruit and the parasitical habits of the order are dependent on each other. The seeds sticking to their own by the branches on which they fall ensure to the young parasite, when it begins to grow, a suitable substance in which to push its roots; and as the viscidity of the fruit causes the greater part of it to catch upon branches before it falls to the ground, the young plant would die immediately after germination, if it were not a parasite, and thus the race would become extinct.

Mr. Griffith has shown (Linn. Trans., xviii. 71) that in Loranthus and Viscum the ovules are not formed till after germination has taken place, a most curious and before unheard-of fact.

LORCA, a town in Spain in the province of Murcia, in the diocese of Cartagena, is built on the north slope of the Sierra de Callosa, 40 miles west of Cartagena. It has an old castle, a collegiate church, besides other churches and convents, a royal college, an episcopal palace, two hospitals, several alamedas, or public walks, planted with fine trees, and, according to Milan, 40,000 inhabitants. It has manufactures of silk, olive oil, wine, and lace. The territory of Lorca is very fertile, especially in corn, but part of it suffers from drought. Various means have been tried to supply the deficiency of water, but they have failed through bad management and the political conditions of the country. (Milano, Diccionario Geográfico de España.)

LORD ADVOCATE OF SCOTLAND. This is the peculiar appellation of the attorney-general, or senior standing counsel for the crown, learned in the law. In Scotland, the regular standing of the counsel for the crown is earlier date than the end of the fifteenth century. Prior to that time, indictments before the lord-justiciar of Scotland seem to have been under the charge and superintendence of the judges. The office was established [Jespers Clerk]; and for prosecutions before the high court of parliament, we find sometimes the chancellor, sometimes the clerk register, and at other times a special counsel for the crown appointed.

The earliest standing 'Advocate,' and with whom the business properly begins, was Sir John de Ross of Mountgreenan, in the county of Ayr, an individual well both in the politics and literature of his time: he is one of the Scottish poets commemorated by Dunbar. On the fall of the Henryson and Layton from the place of advocate, the earl of Wishart of Pittarrow was made both king's advocate and justice-clerk; but afterwards those offices were again separated, and when the Court of Session was erected in the beginning of the sixteenth century, Sir Adam Otterburn of Athame was king's advocate. On this occasion it was not only privileged to plead within the bar, but actually nominated one of the judges of the court, or a lord of session, as the king's treasurer and justice-clerk likewise. It was from this circumstance he acquired the sobriquet of Lord Advocate, an appellation which occurs in the years 1573 and 1576 (Pitcairn's Criminal Trials), and was the fixed designation in 1587. (See the statute, 1587, c. 115.) This was in the time of David M'Gill of Rankie; and before M'Gill had long left the office, it had the additional title of 'Right Honourable.' (See Act of Sederunt, 17th Nov.
It was however in the time of Sir Thomas Hope (founder of the noble family of Hopetoun, and others) that the office acquired the vast political importance which has in modern times belonged to it. This arose not less from the subtle and ambitious character of that famous person, than from the circumstance of the king's removal to the throne of England, and the consequent remoteness of Scotland from the immediate seat of government.

In McGil's time the yearly salary attached to the office was 40l. When Hope was appointed in 1628, he had 200l. a year; and in the end of last century it was the peculiar right of the lord advocate to be paid the proportion of duties of the lord advocate: they are said to be indefinite. The most prominent however is that of public prosecutor; and in this capacity he has, besides the solicitor-general, four standing deputies appointed by the great seal, and over 300 persons of all descriptions of the clergy and of the learned professions with him, as members of his court. These deputies assist him in the Court of Justiciary, and are despatched by him to the several circuits of that court to prosecute indictments there. He has also a deputy in the Court of Exchequer; and a deputy or occasional substitute to conduct prosecutions when the regular sheriff of Edinburgh, or other county court. Every county court has indeed a 'procurator fiscal,' whose duty it is to sue on behalf of the crown in his county; but that officer is not yet placed on a proper footing, being neither of the bar, nor named in the commission, and all the advantages of the lord-keeper of the great seal of England, as belonging to the office of lord-constable of Scotland. In the winter of 1628, Sir Nicholas Bacon lord-keeper, pressed an act to be passed (c. 18), which, after resting that the question had of late arisen whether like places, authorizations, and grants given by the order of the lords of the great seal of Scotland, should be deemed the same, and of the same force as those given by the king's sign manual to the great seal of England. The statute of 31 Henry VIII., c. 10, assigned the same rank to the lord advocate and the lord keeper, giving them as such the authority to receive grants and patents, and to proceed over all lay peers except those of the blood royal; and in 1553, Elizabeth, Sir Nicholas Bacon lord-keeper, pressed an act to be passed (c. 18), which, after resting that the question had of late arisen whether like places, authorizations, and grants given by the order of the lords of the great seal of Scotland, should be deemed the same, and of the same force as those given by the king's sign manual to the great seal of England. The statute of 31 Henry VIII., c. 10, assigned the same rank to the lord advocate and the lord keeper, giving them as such the authority to receive grants and patents, and to proceed over all lay peers except those of the blood royal; and in 1553, Elizabeth, Sir Nicholas Bacon lord-keeper, pressed an act to be passed (c. 18), which, after resting that the question had of late arisen whether like places, authorizations, and grants given by the order of the lords of the great seal of Scotland, should be deemed the same, and of the same force as those given by the king's sign manual to the great seal of England. The statute of 31 Henry VIII., c. 10, assigned the same rank to the lord advocate and the lord keeper, giving them as such the authority to receive grants and patents, and to proceed over all lay peers except those of the blood royal; and in 1553, Elizabeth, Sir Nicholas Bacon lord-keeper, pressed an act to be passed (c. 18), which, after resting that the question had of late arisen whether like places, authorizations, and grants given by the order of the lords of the great seal of Scotland, should be deemed the same, and of the same force as those given by the king's sign manual to the great seal of England.

LORD-KEEPER (Custos magini Sigilli), an ancient officer of the crown, who had the custody of the king's great seal, with authority to affix it to public documents, some of the most important of which have no force till they have been so affixed. He is called lord-keeper or chief minister, no oath having been required from him. The lord-keeper was elected by the baronage parliament, or great council of the nation, but the custom practiced in the time of the former kings is not expressly mentioned. The ancient entries respecting the appointment of the lord-keeper generally are—A. B. Cancellarius (or in Cancellarium). Angl. electus, or a baron, or in pleno parliament, or per regem et parliamentum, constitutus est. Records of the reign of Hen. I. and John show that both offices were held simultaneously by different persons under those princes. Sometimes the offices were united in one individual, who was thus both judge and minister. In the 11th year of Henry III., Ralph Neville was appointed by parliament almost in his chancellory, and two years afterwards he received the custody of the great seal from the king. In 22 Henry III. the great seal was forcibly taken from Neville by the king, who delivered it to two persons, Geoffrey the Templar and John Lexington; but as Neville could not deliver it, the authority was transferred to the court, and he continued to hold the office of chancellor until his death. But the great seal was under the control of the chancellor; and when Henry III. demanded it from the bishop of Chester, his chancellor, he answered, that having received the seal by the common council of the realm, he could not deliver it to any one without the like common consent. It was matter of complaint against Henry III. that in 1261 he appointed Walter de Merton to be chancellor, 'me nuutculo barono,' or without the consent of the baronage. In the following year he appears to have removed Hugh le Despencer the chief-justice, and Nicholas de Ely the chancellor, appointed by the barons. Edward I. took the great seal with him to Flanders, and when he returned to Gascony, leaving his chancellor, England with a temporary seal: and in 6 Edward I. the bishop of Bath and Wells, the chancellor, on going abroad left the great seal in the custody of Sir John de Kirby, with an injunction to despatch the business of the chancellor in his absence, and to accustom the power of the baronage, or as he was formally called, a lieutenant. In 16 Edw. I, Ayremin, master of the rolls, and his companions, were kepters of the great seal; Burnell, bishop of Bath and Wells, being appointed in the same time. Among the restrictions imposed on Edward II., in the fifth year of his reign, by the ordinances elected by the barons and commons in parliament, it was provided that the king should appoint the chancellor and certain other officers by the advice and assent of his baronage, and in parliament,
question formed the proximate cause of the rupture between Charles I. and his subjects. Upon the Restoration the right of the crown to issue such commissions was established by a declaratory act, 14 Charles II., cap. 2. The authorities and duties of the lord-lieutenant and of his temporary vice-lieutenants, and of his permanent deputy-lieutenants, have latterly been fixed and regulated by the militia acts. [Militia.]

LORD OF MISRULE, the master of the revels at Christmases in any nobility or other great house. 'First at the feast of Christmas,' says Stowe (Surv. of Lond., edit. 1603, p. 98), 'there was in the king's house, wheresoever he was lodged, a Lord of Misrule, or master of merry sports, and the like had yet or before him they were not so well or good or worship, were they spiritual or temporal: amongst the which the mayor of London, and either of the sherrifs, had their several Lords of Misrule, ever contending, without quarrel or offences, who should make the nearest pauses to delight the king.' The custom of a Lord of Misrule, after the Feast of the Purification, commonly called Candlemas-day: in all space which there were fine and noble disguisings, masks, and mummeries, with playing at counters, walking in every house, more for pastimes than for gain.

This Lord of Misrule, or revel-master, was sometimes termed a Christmas prince. Warton, in his 'History of English Poetry,' tells us that in an original draught of the King of France, dated in Paris in 1546, one of the chapters is entitled, 'De profecto Ludorum, qui Imperator dictur,' under whose direction and authority Latin comedies and tragedies are to be exhibited in the hall at Christmas; as also 'sex spectacula,' or the particular business and office of Imperator, it is ordered that one of the Masters of Arts shall be placed over the juniors every Christmas, for the regulation of their games and diversions at that season of festivity. His sovereign's name was to last during the twelve days of Christmas, and he was to exercise the same power on Candlemas-day. His fee was forty shillings. In an audit-book of Trinity College in Oxford, for the year 1559, Mr. Warton found a disbursement 'pro praecito Principis Angliae,' or as Lord and Master of Misrule, lord corresponding to the Imperator at Cambridge, was a common temporary magistrate in the colleges at Oxford.

In Scotland, where the Reformation took a more severe and speedy turn than in England, the 'Abbot of Unreason,' as he was there called, and other festive characters, were suppressed by the legislature as early as 1555. At Rodez, the capital of the province of Languedoc in France, previous to the Revolution, they had an 'Abbe de la Malgouyenne,' who had our Lord of Misrule.

After 1640 we hear nothing of the Lord of Misrule in England.

(Warton's Hist. Engl. Poetry, vol. ii., p. 373; Brand's Popular Antiq., vol. i., p. 367-393; Nashe's Grammar. LORDS, HOUSE OF, the behaviour of the two assemblies which form together the Parliament of the United Kingdom. [Parliament.] The other is the House of Commons, which consists of persons who are elected from time to time to represent the people at large. [Commons, House of.]

The Lords Spiritual and Temporal are both legislative and judicial. The Lords Spiritual are the two archbishops and twenty-four bishops of the English Church, and one archbishop and three bishops of the Irish prelacy. The Lords Temporal are the twenty-four baronetcies which abound in England were suppressed, the superiors of many of them, under the names of abbots and priors, sat as Lords Spiritual in this assembly. In those times the Lords Spiritual equally, if they did not outstanding with the rest, sat at the same time in Parliament; though now they form but about one-thirtieth of the persons composing this assembly. Six more bishops were added when the abbots and priors were removed.

The Lords Temporal is all the peers of England, being of great age, and not incapacitated by mental incacity; sixteen representative peers of the Scottish peerage, and twenty-eight representatives of the Irish peerage. The number of the last-named portions is fixed; but the number of peers of England is usually varying, and depends upon the casualties of minorities, and on the will of the king, who has an unrestricted power of increasing the number of peers.

The Scottish representative peers were introduced at the Union in 1707; but the Irish representative peers at the Union with that country in 1800.

The component parts of this assembly admit of being represented thus:—1. Persons sitting there in respect of offices held by them. Such are the spiritual lords of the Church. 2. Persons not so sitting, but who sit at the beginning of every parliament. 3. Persons who have been created peers. 4. Hereditary peers of Scotland (for there can be no creation of peers of that part of the United Kingdom) elected by the whole body of the Scottish peerage to represent them in parliament. 5. Hereditary or created peers of Ireland, elected by the whole body of the Irish peerage, and sitting for life, vacancies being supplied as they occur. And 6. Spiritual peers of Ireland, but this question is in progress to be decided by the king's pleasure, and has not yet been finally settled.

The great body of the house however consists of hereditary Lords Temporal of England, under the several denominations of dukes, marquisses, earls, viscounts, and barons. Each of the individuals of these ranks in the Saxon times, and rests as such, among the chief advisers of the sovereign. One of the last acts of King James I., before he finally left London and disconnected himself from the Parliament, was to give the royal assent to a bill for removing the bishops from Parliament, as a question had been raised whether as the Lords Spiritual and the Lords Temporal, though sitting together, form two distinct estates of the realm, the concurrence of both is requisite in any determination of this house, just as the consent of the two houses of the Executive to determine the acts of Parliament. But it is now understood that the Lords Spiritual and Lords Temporal are but one body, whose joint will is to be collected by the gross majority of voices; and statutes have been made in the absence of all the Spiritual Lords.

The House of Lords has two distinct functions: the legislative and the judicial.

In its legislative character, every new law, and every change in the existing law, must have the consent of a majority of this house, as well as of a majority of the House of Commons.

In its judicial character, it is a court for the trial:—1. Of criminal cases on impeachment by the House of Commons; 2. Of peers on indictments found by a grand jury; 3. For the hearing and determining of appeals from the judgment of the Court of Chancery; 4. For the hearing and determining of appeals on writs of error to reverse judgments in the Court of King's Bench; and 5. In hearing and determining appeals from the supreme courts in Ireland and Scotland.

The House has the power to require the attendance of the judges to assist it in its discharge of its duties.

A few points in which the House of Lords differs from the lower house of Parliament remain to be noticed. In the chair of the house sits the lord high commissioner, a man chosen by the king. If the house refuses to act, he takes the chair in the House of Lords, and the Commons are summoned to attend him there to receive the communication
of his will and pleasure. The royal assent to bills, whether given by the king or queen in person, or by a commission appointed by the king or queen, is given in the House of Lords. All bills affecting in any way the rights and duties of the persons must originate in that house. The members of the House of Lords have a right of voting on any measure before the house by proxy, the proxy being a member of the house: and, lastly, they have the privilege of entering on the journals of the house their dissent from any measure. The house did receive the sanction of the majority, with the reasons for that dissent. This is called their protest.

LORDSHIP. [Leet.]

LORETO, a town of the Papal state in the province of Marches, near the coast of the Adriatic, 15 miles south by east of Ancona. It is dedicated for the Virgin Mary, which is called 'La Santa Casa' (the holy house). It is an oblong quadrilateral building, the walls of which are of brick covered with cement, 40 feet long, about 20 wide, and 25 feet high. It contains only one room, with a door, a chimney, and a window. In a niche there is a statue of the Virgin made of cedar wood. The legend says that this was the dwelling of Mary at Nazareth, where it was often visited by the Christian pilgrims; that in the year 1294 Queen Mary of Cyprus, the last of the Christians in Palestine, the house was lifted up and carried away by supernatural power to Dalmatia, where it rested on a hill near the sea-coast, between Tarsactum and Piume, of which district Nicolò Frangipani was the governor; and goes on to say that after some time in Dalmatia, and being the object of public wonder and veneration, it was again removed by invisible hands, in December, 1294, and carried across the Adriatic to a hill near Rovani, on ground belonging to a woman of the name of Dafnedi, a diminutive of Mary, and the name of Loreto is derived. Further particulars concerning this tradition are given in the Teatro Istorico della Santa Casa Nazarena della B Vergine Maria e sua miracolosa custodia in Loreto, by Martorelli, bishop of Montefeltro, 2 vols., folio, Rome, 1725, dedicated to Pope Clement XII. This legend has furnished Taaso with the subject of one of his finest lyrics, beginning with 'Ecco fra te tempesto e fieri venti.' A splendid church was afterwards built round the holy house and embellished and enriched by successive popes, among others by Leo X., Clement VII., and Sixtus V. The town of Loreto, which is small but well built, and contains 6000 inhabitants, has grown round the sanctuary, which is annually visited by numerous pilgrims. The sanctuary is well provided with works of art; a rich and valuable library is carried on in beads, rosaries, agni Dei, and other devotional ornaments. Loreto is a bishop's see. The once well-fitted treasury of the church of Loreto was in great measure emptied by Pius VI. to enable him to satisfy the demands of his church in 1798. In the following year, when the French took Loreto, they found little to glean. The church and treasury have been again enriched since the Restoration by votive offerings of devotes. (Valery, Travels in Italy.)

LORENZO DE' MEDICI. [Medici.]

LORCA'RIA. [Cellarari, vol. vi., p. 405.] The term Lorcatoria is also employed by Linnaeus to designate a genus of Malacoperognathus Peyer.

LORICATA, a subdivision of the Linnean genus Cellaria, proposed by Lamoureaux. [Cellarari.]

LORICATA, the name applied by Merrem and Fitzinger to the Crocodiles, Emysauriums of Dr Blainville. [Crocodyl., vol. viii., p. 162.]

LORRAINE, a partition of the ancient province of France, at the confluence of the Scarf and the Blavet, in the department of Morbihan, 266 miles west by south of Paris in a direct line, or 288 miles by the road through Alençon, Fougères, Rennes, and Ploërmel.

Lorrain is of modern origin. In a.d. 1666 Louis XIV. granted permission to the French India Company to establish magazines and docks for building vessels on a part of the shore of Port Louis, the name given to the mouth of the Blavet. The establishment thus formed, which continued long in the possession of the company (now dissolved), is at present in the hands of government. From the company's establishment the place took the title of Port L'Orient (Port of the East). In a.d. 1720 the building was commenced; in 1737 the inhabitants amounted to 14,000, in which year the town was incorporated. The India Company had previously established here their annual sale of Chinese and Indian commodities. In 1744 the town was fortified. During the long wars of the Revolution, the commerce and population of the town declined; but since the peace of 1815 commerce has been gradually resuming its former activity.

The town is well laid out, with wide, straight, well-paved, and clean streets: the houses are well built, and there are several pleasant promenades. The bridge over the Scarf, the quays, the theatre, and the covered market are well attended to now. There is a public 'abattoir,' or slaughter-house. The port is on the east side of the town, from which it is walled off in length nearly 4000 feet; its breadth is nearly 2000 feet. The royal dockyard is one of the finest in Europe since, slips for laying down fifteen vessels of war at a time, and the works then carrying on were expected to increase the number to thirty. Among the most remarkable objects connected with the dockyard, the powder magazine, which is a powder magazine; and a silex mill, an exercise-ground for the artillery. An hospital has lately been erected on the Island of St. Michel, in the roadstead.

There are in Loret in a subordinate court of justice, re- taining its ancient name, a station school for the use of the school; an establishment for the special instruction of students destined for the navy, or for the great schools of Forez and St. Cyr and the Polytechnic School; an agricultural society; a society for affording gratuitous instruction in practical geometry and mechanics; a national school of arithmetic and geometry; a free school on the monitorial system; and six elementary schools. There are also a well-arranged and well-ventilated prison, and a civil and military hospital, besides that on the Island of St. Michel. The hospitals are under the free practice of private practitioners. The environs are exceedingly well cultivated.

Lorient is the capital of an arrondissement, containing an area of 772 square miles: it is subdivided into eleven communes, each under a justice of the peace, and 48 communes: the arrondissement had a population in 1831, of 128,458; in 1836, of 133,307.

LORRIPES. [Vernieridae.]

LORIS. [Lemuridae; Nycticebus; Stenop.)

LORRAINE, a province or military government of France before the Revolution, situated on the north-eastern frontier. It was bounded on the north by the Rhine, on the north-east by the Rhineland frontier, on the south-east by the Duchy of Deux-Ponts, in the Palatinate; on
of the antient kingdom of Lorraine), or on their own accounts with other potentiats, or with the more powerful of their vassals. The, dukes of Lorraine, being the successors of the dukes of France, under the crown of which they held some fiefs, involved them also in the disputes, foreign and domestic, of that kingdom. Raoul, duke of Lorraine, was one of those who fell in the battle of Crecy, A.D. 1346, fighting with Philip the Fair, against the English; and Jean, his son and successor, a mere boy, was taken prisoner after distinguishing himself by his valour at the battle of Poitiers, A.D. 1360. He was again taken prisoner, A.D. 1364, in the battle of Poitiers, in the war with France, in which Charles de Blois was defeated and slain by Jean de Montfort, his claimant for that duchy. [BRETAGNE.] The duke Jean of Lorraine was also present at the battle of Rosbecque, in which Charles VI. of France defeated the Flemings (A.D. 1302); he died A.D. 1348.

On the death of Charles le Hardi, the successor of Jean in the duchy of Lorraine, the succession was disputed by René I., duke of Bar and of Anjou, and Antoine de Vaudemont, nephew of Charles. In the war that ensued René was defeated and taken prisoner (A.D. 1431) by his rival, who was supported by the duke of Bourgogne, while René had the assistance of Charles VII. of France. René ultimately obtained his liberty (A.D. 1436), and set out for Naples, the crown of which had fallen to him during his captivity. Lorraine had been considerably increased by the joint decision both of the emperor Sigismund and of the council of Bâle. The life of René was busy. In A.D. 1453, long before his death, he resigned the duchy of Lorraine to his eldest son, as Jean, duke of Bar and of Anjou, and then released by the intervention of the plant of Aragon. He was succeeded by his son Nicolas, on whose death (A.D. 1473) Lorraine came to René II., grandson of René I., and which, on his father’s side, of Antoine, duke of Bar, who had been René’s competitor. René II. was seized by Charles de Téméraire, duke of Bourgogne (Bourgogne), together with his mother Yolande, almost immediately on his (René’s) succession to the throne, and the duchy of Lorraine, in the same manner as that of Aragon, was declared to be in the possession of the Swiss Confederation. A.D. 1478, was obliged to make an alliance, offensive and defensive, with Charles. Charles soon afterwards again attacked Lorraine, took the capital (Nancy) and other towns, and obtained possession of the whole duchy. The defeat of Charles by the Swiss (A.D. 1479) revived the hopes of René. He assisted the Swiss with a body of troops in their second victory over Charles at Morat, in June in the same year; and returning to Lorraine, he raised a new levy of men to aid his father; and upon Charles leading an army in the ensuing winter, to recapture the town, he was defeated and slain by René (January, 1477). René subsequently distinguished himself in the wars of Italy; and obtained of Charles VIII. of France (A.D. 1492), by the treaty of Amiens, which had been seized by Louis XI. René died A.D. 1508.

Antoine, the successor of René II. (A.D. 1508), seems to have merited, by his care to promote the happiness of his subjects, the title which he received of 'the Good.' His reign is chiefly remarkable for his struggle against the peasants of Alsace, whom the excitement of the Reformers induced to rise in vindication of their liberty, but who, unable to maintain it, and for the declaration of Lorraine as a free and independent sovereignty by the German Diet of Ulm (A.D. 1543). In 1552, Antoine married a princess of Lorraine, of which it subsequently constituted only a subdivision, as noticed in the preceding geographical sketch.

Francis I. reigned for a year. He was succeeded by his son Charles III. (A.D. 1551), who during the period in which he held the duchy (A.D. 1554-1568) did much for its improvement: he acquired regal rights over that part of the duchy of Bar which he held as vassal of the king of France, reserving only the homage due to the latter and the right of appeal. Duke Charles founded a university at Pont-à-Mousson. He supported the party of the League in France, at the head of which were his kinsmen the princes of the house of Guise. [GUINE.]

Henri II., Francis II., and Charles III. (or IV.) succeeded...
in the eleventh military division, the head-quarters of which are at Bordeaux. It sends five members to the Chamber of Deputies. In respect of education this department is far below the average of France. Of the young men enrolled in the military census of 1828-29, only twenty-four in a hundred could read and write, the average of France being forty-one. In the time of Caesar this department was part of the territory of the Cadurci, from whom its capital Cahors, originally Divona, derived its name. Uxellodunum, the last place in Gaul which held out against Caesar, was probably a hill called Pouz, in the department of Lot-et-Garonne. It is a small feeder of the Dordogne in this department. Another town, Varadetum, mentioned in the Peutinger Table, was probably at or near Varaze, a village south of the Lot. Before the Revolution the country included in this department constituted the greater part of Quercy or Quercy, a province of Guienne.

LOT ET GARRONNE, a department of France, bounded on the north by that of Dordogne; on the north-east by that of Lot; on the south-east by that of Tarn-et-Garonne; on the south by that of Gers; on the south-west by that of Landes; and on the west and north-west by that of Girondes. Its greatest length is from east-to-west, about fifteen miles, from the town of Sauveterre, to south-west to the border of the department of Landes; between Castelnaud-la-Chapelle and Biron on the Landes (166) miles; the greatest breadth, at right angles to the length, is from near the little town of Duras north west to the neighbourhood of Puy-naud south-east, 54 miles. The area is estimated at 2,057 square miles, rather less than the average area of the départements of the Maritime Alps, but larger than that of the English county of Norfolk.

The population in 1831 was 346,883; in 1836 it was 346,400, showing a decrease in five years of 483, and giving 168 inhabitants to a square mile; rather more than the average of the population in France, but not equal to the density of the population of the English county with which we have compared it. Agen, the capital, is on the Garonne, in 44° 12' N. lat., 0° 36' E. long., about 360 miles in a direct line south west by south of Paris, or 369 miles by the navigable route. The department has no elevations deserving the name of mountains; the hills which divide the valley of the Dordogne from that of the Lot occupy a small portion on the north-east, and the range of high land in the valley of the Garonne from that of the Garonne, overtops a small portion on the south-west. The surface of the department is generally undulating, and slopes gently towards the west. The department is wholly occupied by the strata of limestone and chalk. The soil is dark loam over sand or marl-pits and gypseous quarries. Peat and potteries earth are also procured; the first in small quantity, the second abundantly.

The principal rivers are the Garonne, and its tributaries the Lot and Dordogne. The Garonne runs from that of Tarn et Garonne on the south-east side, and runs west-north west 27 miles to a little above the junction of the Baise, receiving the Sajon on its left and the Gers on the right bank: it then runs 15 miles north west to Tonneins, and from thence it flows north west and south west 7 miles into the Garonne: its whole course in this department is 24 miles, for about half of which it is navigable. The department of Lot is well supplied, and the Lot is navigable for about 16 miles; it unites with the Garonne in the adjacent department of Gironde. The total inland navigation of this department amounts, according to the official returns, to about 150 miles. There are no canals.

There were in 1837 six government roads, with an aggregate length of 223 miles, of which 38 miles were unfinished. The road from Paris by Limoges and Périgueux enters the department on the north and runs south by Castillonnes, Villeneuve d'Agen, Agen and Astarart to Auch, in the department of Gers. Roads branch off from this at Sauveterre, and from Agen by La Plume et La Jonjole to Condom (Lot); and from Agen by La Plume et La Jonjole to Condom (Gers). A road from Bordeaux to Toulouse by the bank of the Garonne passes through Bazas, Marmande, Tonneins, Cazeres, Auch, and Agen by a little road from the Limousin to Tonneins, Port-Sainte-Marie, Clermont, and Agen (where it intersects the road from Paris to Auch), in the department of Tarn and Garonne. A branch from this road at Port-Sainte-Marie leaves for Lavardac and Nérac along the banks of the Dordogne.

The departmental roads were sixteen in number, having an aggregate length of above 270 miles, of which about 33 miles were out of repair, and nearly 100 miles unfinished. The by-roads and paths amount to about 1,000 miles, highly-coloured and rich, well calculated for keeping and for bearing a sea voyage; but in other respects not of the best quality, except the red wines of Thèzé, La Rocaill, Buzet, and Péracard; and the white wines of Agen and Aquitaine. Tobacco is cultivated on the banks of the Garonne, and the pump of remarkably fine growth and excellent quality. The woods, consisting chiefly of pines, cork-trees, and chestnut-trees, occupy an eighth of the department. There is a considerable quantity of wood in the Garonne, the La Basse, and the Dordogne; the wood is extensive, and a species of oak, and is good; and there are large flocks of sheep. Mules and asses are numerous, but horses are not so. Pigs have much increased of late years. Poultry also has been reared in increasing quantity, especially geese and turkeys, of which a great number are sent to other parts of France. Bees are numerous, also game and fowl.

The Garonne yields the salmon, the trout, the lampreys, and even some sturgeons. There are wolves, foxes, rats, and moles.

The climate is considered to be one of the finest in France. There are however alternate periods of rain and clear weather of such length as frequently to injure the harvests. The winds are high, especially the northwest wind, which at times counts the other parts of the Garonne with light; and followed by bright and intense sunshine, are very injurious to vegetation. The marshy exhalations of the land give rise to dangerous bilious and intermittent fevers.

The department is divided into four arrondissements, as follows:

<table>
<thead>
<tr>
<th>Name</th>
<th>Area in sq. miles</th>
<th>Population in 1831</th>
<th>Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agen</td>
<td>54</td>
<td>8,549</td>
<td>S.E.</td>
</tr>
<tr>
<td>Nérac</td>
<td>57</td>
<td>14,956</td>
<td>N.W.</td>
</tr>
<tr>
<td>Villeneuve d'Agen</td>
<td>55</td>
<td>10,651</td>
<td>S.W.</td>
</tr>
<tr>
<td>Total</td>
<td>146</td>
<td>24,057</td>
<td></td>
</tr>
</tbody>
</table>
LOT

The number of cantons, or districts, each under a justice of the peace, is thirty-five.

In the arrondissement of Agen are Agen, Aiguillon, Port-Sainte-Marie, and Clermont, on the Garonne; Garnages on the Lot, Peyremond on St. Martin near the Lot; Brouzet and Le Sauvetat de Sauveterre on the river, a feeder of that river; Astaffort and Layrac on the Gers; La Roque-Timbaut, Casteljaloux, and Prayssas in the country north of the Garonne; and La Plume, Moirax, Caudescou, and Cuq, in the country south of the Garonne.

Agen is on the right bank of the Garonne. It is mentioned by Titolem, who makes it the capital of the Nitiibrages, a Celtic tribe; it is also mentioned in the Itineraries of Dionysius, Ausonius, in the Notitia Imperii, and in the Pentateuch. Toulouse is the capital of Agen department. Few towns suffered more severely in the irruption of the barbarous tribes that overthrew the Roman Empire, or in the troubled ages which followed. It was pillaged by the king of the Visigoths in 751, by the Saracens at a later time by Sarrazins and Normans. It was afterwards at different periods subject to the dukes of Aquitaine, the kings of France and England, and the counts of Toulouse; and in the religious wars of the sixteenth century it was much devastated. It is a walled city, with 15,309 inhabitants, and 23,468 in the department. It has a fine church, the Sainte-Cathérine, a hospice, a hospital, a library containing 5,000 volumes, a society of arts, sciences, and agriculture; a departmental library, a hospital, and a hostelry.

The public buildings most worth of notice are the Church of St. Caprais, the Prefect's Office, and the Hospital of St. Jacques. The population in 1831 was 11,991 for the whole town; in 1836 it was 13,309.

In the arrondissement of Agen, the department has 15,309 inhabitants.

Agen is the seat of an ancient bishopric; the diocese now comprehends the department: the bishop is a suffragan of the archbishop of Bordeaux.

Agen is a city in the department of Lot-et-Garonne, on the Lot. It is a town of 30,790 inhabitants, and is on the road between Aiguillon and Agen.

In the arrondissement of Marmande are Marmande, Meilhan, St. Bazeille, Caumont, La Mas d'Agenois, and Tonnens on the Garonne; Comont and Bourbon in the country south-west of that river; Castel-Moron, La Parade, La Fite, and Claire, in the country west of the Lot; Sauzet, Allemand, Pardaillan, and Duras, on or near the Doron; Soumenceau, in the district north of that river, and Miramont, Lévis, Laun, Seiches, and St. Barthelemy, Puyvicot, Escoffe, Castelnaud-Gamas, Gontaut, and Vertev, in the county north of the Lot, and the Garonne. Marmande is an ancient town which was pillaged by the Saracens. It is on a plain on the right bank of the Garonne, fertile rather than picturesque. Though an old town, it is tolerably well built. It has a handsome façade of a high tower, the house of the sovereign's custody.

The population in 1831 was 5,561 for the whole town; and 7,434 for the whole commune: in 1836 it was 7,527 for the commune.

The inhabitants manufacture coarse linens, bed-ticking, coverings, leather, and hats; and trade with Bordeaux in corn, wine, and fish. There are paper-mills, and a paper and iron works. A library and an agricultural society. Tonnens consists almost entirely of a long and broad street, lined with good and even elegant houses. The town hall is in the centre of the town, in a handsome place or square, and commands a view of the river.

The inhabitants (39,444 town, 6,494 whole commune), nearly half of whom are Protestants, manufacture pins, rope, and hempen thread or yarn. Near the town is a snuff manufactury. Considerable trade is carried on. Clairens (pop. 2,467 town, 4,949 whole commune) is the first town in France which embraced the Reformed religion; it was formerly the rival of Tonneins in trade: its snuff was the most esteemed of any in France.

In the arrondissement of Nérac are Nérac, Moncets, Lavardac, Vassy, and Vienne, on the Baise; Bruche, Franques, Montpezat, in the country north of the Baise; and Casteljaloux, Villefranche, Damazan, Saintraillere, and Xaintaires, in the country south of the Baise; fos and Miniz on the Geline; Casteljalou, Villefranche, Damazan, Saintraillere, and Xaintaires, in the country south of the Baise; and Casteljalou, Villefranche, Damazan, Saintraillere, and Xaintaires, in the country south of the Baise.

Géres consists of two parts, Great and Little Géres. Great Géres is divided by a high, narrow, and celebrated stone bridge. In Great Géres is a fine Gothic church, built by the English, which was for a long time one of the residences of the kings of Navarre. Henri IV. held his court there in this place. The religious wars in the reign of Louis XIII. it was taken by the Duke of Rohan, the Protestant leader, who expelled the magistrates and the partisans of the royalist party; but the town was reoccupied the same night by the royalists, under the duke of Mayenne. Great and Little Géres are both walled towns. There is an ancient castle in its streets is very large. The population in 1831 was 3,566 town, or 6,237 for the whole commune; in 1836 it was 6,603 for the commune. Among the manufactures of the towns are hosey, leather, and starch; there are several corn-mills; the flour is exported to France, and is used by peasants, and in the manufacture of wine by epices. Miniz (pop. 1,962 town, 3,146 whole commune) has many water-mills in or about the town. Cork-cutting and tanning are carried on, and there is manufacture of coarse earthenware in the neighbourhood. Casteljalou, which is one of the most pleasant towns in the country south of the Géres, has a brand castle, and some remains of the ancient town-walls, which have in most parts been replaced by handsome walks. The town, which was built in the thirteenth century, is still well laid out. There is an old bridge over the Lot, and a principal street, which is 5,132 feet long, and 46.4 feet broad. The population in 1831 was 5,334 town, or 10,652 whole commune; in 1836 it was 11,222 for the commune: the inhabitants are engaged in tanning, and carry on trade in corn, wine, plums, cattle, and linen. There are paper-mills; and at Penne (pop. 6,065) some manufactures of leather and other articles are carried on.

The population of the above places, if not otherwise specified, is that of the whole commune, from the census of 1831.

The chief branches of manufacture are Corks, sailcloth, light woolens, quilts and other cotton goods, snuff, earthenware, and gloves, paper-mills, and iron-works. The number of iron furnaces for producing pig-iron is five; charcoal is the principal fuel used: there are twelve forges for the preparation of wrought-iron. The chief trade of the department is in corn, wine, plums, prunes, hemp, and flax; the raw materials of which are sent chiefly to Bordeaux or Toulouse, the conveyance to these towns being facilitated by the navigation of the Garonne.

The department consists of the diocese of Agen, and is in the jurisdiction of the Court Royal of that city, and of the Académie Universitaire of Cahors. There are five Protestant consistory departments in the district, viz., at Clairens, Tonneins, Nérac, Lalitte, and Casteljalou. The department is in the eleventh military division, the head-quarters of which are at Bordeaux. It returns five members to the Chamber of Deputies.
The department for the most part formed part of the territory of the Nithbriges, but it includes probably small portions of the counties of the Petrosorri and Vasates. Aquinum (Auchen) and Excunum (Excunum) in the island of Eilean Beag by the flat towns of the Nithbriges. In the Roman division of Gaul, the department was comprehended in Novempopulana, a subdivision of Aquitania. It was afterwards successively under the Visigoths and the Franks; and was exposed to the ravages of the Goths, the Suevi, the Saxons, and the Northmen or Normans. It suffered also in the crusade against the Albigensians; and was ceded to the English by the treaty of Bretigny. It was one of the districts which early received the doctrines of the Reformation. Before the Revolution it included the counties of Agenois and Bascoal, of Guienne; and of Condomois and Lomagno, subdivisions of Gascony.

LOTHIAN. [GERMANY.]

LOTHIAN. [LOTHIAN.]

LOTHIANS is a term under which that part of Scotland is comprehended which stretches along the southern shores of the Frith of Firth, and includes the three counties of Haddington, Edinburgh, and Linlithgow. The first of these counties is also called Lothian, and the last West Lothian. This region lies between 56° 40′ and 56° 2′ N. lat., and between 2° 24′ and 3° 50′ W. long.

Coast-Line.—The Lammermuir Hills terminate on the east of the Lammermuir with the bold and rocky promontory of St. Abb's Head, which attains the elevation of 286 feet above the sea. From this point the coast, trending north-west, continues rocky and steep as far as Fast Castle, and its average elevation is hardly less than 200 feet. Further on it is lower, but still precipitous, and precipices crag to the sea, which rise to about the height of 100 feet. Its character is somewhat changed where Haddingtonshire begins: though it continues to be rocky, the shores rise with a gentle slope to a moderate height; but west of Dunbar Castle it is abrupt and precipitous, and disappear, when last disappear under the sands of Belhaven. A low and sandy beach extends on both sides of the mouth of the Tyne; on the north it continues to the mouth of the Puffer, with the exception of the small promontory of Whitberry, which rises to a moderate elevation. But north of the mouth of the Puffer the cliffs are precipitous and rugged, in some places not less than 100 feet high, and over hang the sea. Fantail Castle stands on a high rock sur rounding the entrance of the Tyne, on the north of that place it is flat and sandy for eight miles; but as we advance farther westward it becomes rocky near Chapel Ness, and in some places almost bold: this character continues on the west side of the bay. The best beach is in Inveresk, and sandy, and so is the remainder of the shores of East Lothian, except some small portions of it near Grangew, Boghills, and west of Presten Pass, where it is several feet high. The shores of Mid Lothian are low and sandy as far as Leith, and some miles further south; but as we approach the mouth of the river Amond, where it attains, on an average, an elevation of between 50 and 60 feet, and so it continues as far as Black Ness, where it begins to lower, until, west of Borrowstounness, it sinks so low that more than 2000 acres are covered by the tide.

Firths, &c., of Rivers.—Nearly all the high lands in which the rivers originate that flow southward to the Tweed, and northward to the North Sea and Frith of Firth, lie within the Lothians, and the elevated ground which constitutes the northern edge of the basin of the Clyde extends along the coast of this division. The whole country may be considered as divided by nature into three portions. The most eastern comprehends the whole of East Lothian and a small portion of Mid Lothian, having for its natural boundary a range of hills which constitute the eastern boundary of the basin of the Esk, and extend from Balerno to Inveresk, and they are called, at least towards their northern termination, the Hills of Falside and Carberry. The second portion comprehends the country between this range and the Leith Water to the Peatland Hills. The third division extends from Leith Water to the River Aeron, which separates West Lothian from Stirlingshire. The eastern region comprehends the greater portion of the Lammermuir range, of which the remainder belongs to Berwickshire. These hills constitute within East Lothian a continuous chain, beginning at the Lammerlaw (about 33° 50′ W. long.), and running northward to the Sea. They are a kind of spur separated from the southern parts by a river, and contain several high summits. Sparralong or Spartlelaw is 1620 feet high. That portion of East Lothian which is included within the Lammermuir Hills contains many deep valleys, through each of which flows a small stream which forms a very considerable torrent. The beds of the rivers are wide, and formed by the debris of the mountains through which they flow. The valleys are rather narrow and of moderate fertility, but they are under curious and peculiarly severe cultivation, but are capable of improvement. This elevated district is sometimes covered with snow for three months.

From the Lammerlaw a series of hills extends south-west to Falside Hill. These are continued by high ground with one or two low hills, and are generally called the Falside Hills, from one of the highest summits. They attain an elevation of near 1000 feet. West of them the watershed between the Gala Water, a tributary of the Tweed, and the Liddel Water, a tributary of the Esk, is called Borthwick Muir. Its elevation above the sea is between 500 and 600 feet, and its surface is chiefly covered with heath and moorland; it is a deep valley of very moderate fertility. In this muir, north-west of Borthwick, rise the Falside and Carberry Hills which run northward between Crichton and Cranston on the east, and Cockpen and Dalkeith on the west, and terminate north-eastward of Inveresk. Their elevation varies from 500 to 700 feet.

The country between the Souther Hills, Borthwick Muir, and the Carberry ridge partakes much of the character of the muir, but the elevations are higher, being on an average from 600 to 700 feet above the sea, though it lowers considerably further north. Most of this tract is covered with heath, but other portions are green, though they are intersected with bare land along the rivers there are small tracts of good land. The margin of the Lammermuir is rather undulating than hilly: its elevations have gentle slopes, and rise hardly more than 100 feet above their base, which varies in height above the sea from about 400 feet on the hills to 250 feet towards the Tyne. The highest hills are in Skirving Dale and North Dale (above the sea) and Down Hill near Scott (550 feet). This tract does not contain much moorland; and though many parts near the Lammermuir have a sandy and rather stony surface, the remainder is tolerably fertile, and produces good crops. The northern part of Borthwick Muir is more extensive, on the east at Broxmouth, east of Dunbar, and follows a low ridge of elevated ground which runs westward near Spott, Stenton, Garvail, and Gifford, whence it passes to Saltire.

From this line the country slopes gradually towards the river Tyne, without forming any hills, except the Traprain Hill, in the parish of Preston-kirk, which rises abruptly on all sides, and on the south is nearly perpendicular. The bleak coast, between the mouth of the Amond and the mouth of the Tweed, contains the most fertile lands of East Lothian, and produces very rich crops of wheat and other grains. Along the Tyne there are rich meadow-lands, especially towards the mouth of the river.

The Tyne originates in two branches in the Carberry Hills and on Borthwick Muir. The northern branch, called the Tyne, unites with the southern, called Salton Water, near Salton House; at the junction the latter is the more considerable river. From Salton House the river runs as a general north-east, then west and then north to its mouth. At Linton it traverses a region of moorland, which formerly caused a waterfall about two feet high, but the rock has been lately cleared away. The tide ascends the river about 50 miles from its mouth. The whole course of the Tyne is about 90 miles in length.

From the Hills of Falside, south-east of Inveresk, some
high ground runs in a north-east direction, being nearly
equally distant from the churches of Tranent and Pen-
castle. Further east the churches of Gladsmuir
and Adelstane are built on its slopes, and from them
are the Garleton Hills, the most elevated part of
these high lands. From Adelstane they extend eastward
to the village of Linton, where they terminate with a
very gradual descent. The soil on these high lands is of inferior
quality, and the crops are Frith and barley, which, on
approaching the sea and the river Tyne, it is characterized by
fertility, especially on the southern slope, which terminates
near the Tyne in rich meadows.

The northern slope of this ridge terminates east of the
Garleton Hills. The whole range, along which the borders
of New Berwick is the New Berwick Hill, which is 800
feet high. The more elevated portion of this region is not cul-
tivated, but the lower ground produces moderate crops of
grain. The valleys near the sea-shore are low, and mostly
covered with sand.

The south-eastern portion of the middle region, which
extends from Carberry Hill to Leith Water, may be con-
sidered as a combination of Borthwick Muir, to which it is
densely built. The whole length of the Borthwick is
the two great branches of the Esk is a table-land, on
which numerous small hills are dispersed, and which in
the southern parts is about 600 feet above the sea; but to-
wards the union of the two Esks, about two miles south of
North Berwick, is a low hill. This portion of the
higher part of this tract, like Borthwick Muir, is covered with
heath or consists of moorland, and contains only narrow
strips of land along the rivers suitable for agricultural
purposes. The hills which occur along the watershed between
Carberry Hill and Leith Water, present a scattered
character, its surface being formed by ridges of high hills, between which the rivers
run in deep and mostly narrow valleys. The highest hills rise to
about 1000 feet; the Tippetknows, on the boundary-line be-
 tween Mid Lothian and East Lothian, attains 1223 feet.

The arable ground in the valleys is of only moderate fertility,
but the hills afford good sheep-walks.

Geology.—The Lammermuir Hills consist of a series of
transition rocks. They are almost entirely composed of
granite, which forms the cliffs and projecting ridges in many
places. The rocks protrude through the strata, and between the
ridges of old sandstone occurs, which fills up to a certain level most
of the valley, especially along the rivulets. Along the north-
ern declivity of these hills the rocks are covered by a conglomerate,
consisting almost entirely of fragments of granite, slate,
basalt, and sandstone. Near Dunbar, and extending eastward
along the coast, are beds of argillaceous slates, and
claystone, and occasional thin seams of coal, with some organic remains.

In the country north of the Tyne the surface consists of
sandstone, clinkers, and limestone, where it is preferred with
mould. The upper strata however is partly traversed by
and partly rests on the red sandstone, which
forms the regular strata of this district. The sandstone
rests on the transition rocks of the Lammermuir Hills, and
is in some places covered by the conglomerate.
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coal-formation begins, which extends through the whole of the southern districts of Mid and West Lothian. The great coal-field lies to the east and south of Edinburgh, where it extends about 25 miles in length, its greatest breadth being six miles. It is calculated to cover an area of 80 square miles. Through the coal-formation extend farther westward, it is intersected by extensive tracts of limestone and sandstone, in which only small seams of coal occur. But in the hills near Bathgate the coal-formation again predominates, and beds of coal are encountered, which are fit for working. In addition, there is an extensive coalfield in Lanarkshire. The country between the coal-formation and the Frith of Forth belongs to the red sandstone, consisting mostly of limestone and sandstone, through which at several places trap and basalt rock are exposed.

Lothian, under the names of Lanark, Lothian, and Lothian, antiently comprised all the country lying between the rivers Tweed and Forth as far west as the river Avon, which separates the counties of Linlithgow and Stirling. It consequently included the whole of Berwickshire and part of the counties of Roxburgh, Selkirk, and Peebles, in addition to the three counties of Haddington, Edinburgh, and Linlithgow, which three stone constitute the district now known under the appellation of the 'new' Lothian. This fertile district was inhabited by the British until their expulsion by the Saxons about the middle of the fifth century. Soon after the union of the Picts and Scots (A.D. 843) Kenneth Macalpine made incursions into Saxony, as Lothian was then called, but did not succeed in obtaining any permanent possession. It subsequently became included in the bishopric of Dunblane, and in 1237, under the name of the Duke of Northumberland, but Lothian continued to be known as a county distinct from Scotland even as late as the reign of David I. (A.D. 1124). The eastern boundary appears to have been restricted to the Lammermuir, which about the time of the reign of William, surmounted the Lion, and to have been then also first divided into East Lothian (Haddingtontshire), West Lothian (Linlithgontshire), and Mid-Lothian (Edinburghshire).

With reference to Edinburgh, the following table shows the state of the parish-schools of that county at the end of the year 1823, has been compiled from the Returns made by the parochial ministers to Parliament in 1826. 1. the parishes of Canongate, College Church, High Church, Lady Yester, New Grey Friars, New North Church, Old Church, Old Grey Friars, St. Andrew, St. Cutiberst, St. George, St. Mary, Tolbooth Kirk, and Tron Church, there are no parochial schools, but in these, as in most of the other parishes, there are schools established on what is called the 'legal provision,' besides private schools, and the number of scholars attending them is very considerable. (Camden's Brit.; Chalmers's Caledonia; Old and New Statistical Account of Scotland, &c.)

<table>
<thead>
<tr>
<th>Parish</th>
<th>Subjects taught, and School-fees per quarter.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northwick</td>
<td>English reading, writing, and arithmetic 3a. 6d. Latin 6s., book keeping, practical geography 2s. 6d.</td>
</tr>
<tr>
<td>Mid Calder</td>
<td>English reading, writing, and accounts, Latin, Greek, and French.</td>
</tr>
<tr>
<td>West Calder</td>
<td>English, writing, and arithmetic 3a. 6d. Latin 6s.</td>
</tr>
<tr>
<td>Carrington</td>
<td>Reading 3s. 6d., writing 3s. 6d., arithmetic 3s. 6d. Latin 6s.</td>
</tr>
<tr>
<td>Grangemouth</td>
<td>Reading 3s. 6d., writing 3s. 6d., arithmetic 3s. 6d. Latin 6s.</td>
</tr>
<tr>
<td>Colinton</td>
<td>English, reading, and arithmetic 3s. 6d. Latin 6s.</td>
</tr>
<tr>
<td>Colinton</td>
<td>English, reading, and arithmetic 3s. 6d.Latin 6s.</td>
</tr>
<tr>
<td>Crumlin</td>
<td>Reading 3s. 6d., writing 3s. 6d., arithmetic 3s. 6d. Latin 6s.</td>
</tr>
<tr>
<td>Crichton</td>
<td>Practical mathematics 5s. 6d.</td>
</tr>
<tr>
<td>Currie</td>
<td>English, reading, writing, and arithmetic 3s. 6d., Latin 6s.</td>
</tr>
<tr>
<td>Dalkeith</td>
<td>English, reading, writing, and arithmetic 3s. 6d., Latin 6s.</td>
</tr>
<tr>
<td>Duddingston</td>
<td>English, reading, writing, and arithmetic 3s. 6d., Latin 6s.</td>
</tr>
<tr>
<td>Fala and Souta</td>
<td>English, reading, writing, and arithmetic 3s. 6d., Latin 6s.</td>
</tr>
<tr>
<td>Glenrothes</td>
<td>English, reading, writing, and arithmetic 3s. 6d., Latin 6s.</td>
</tr>
<tr>
<td>Haddington</td>
<td>English, reading, writing, and arithmetic 3s. 6d., Latin 6s.</td>
</tr>
<tr>
<td>Haddington</td>
<td>English, reading, writing, and arithmetic 3s. 6d., Latin 6s.</td>
</tr>
<tr>
<td>Inveresk</td>
<td>English, reading, writing, and arithmetic 3s. 6d., Latin 6s.</td>
</tr>
<tr>
<td>Linlithgow</td>
<td>English, reading, writing, and arithmetic 3s. 6d., Latin 6s.</td>
</tr>
<tr>
<td>North Linn</td>
<td>English, reading, writing, and arithmetic 3s. 6d., Latin 6s.</td>
</tr>
<tr>
<td>South Linn</td>
<td>English, reading, writing, and arithmetic 3s. 6d., Latin 6s.</td>
</tr>
</tbody>
</table>

LOTIONS, or washes, termed also epithems, and when intended for the eye, collyria, or eye washes, are either mixtures of different ingredients, or solutions of various medicinal substances, in water or other menstrua, designed for external application. If the object be to reduce the temperature of a part, they are generally formed of spiritsuous or other volatile principles, which by their evaporation cool the place and such must be used by means of a very thin single layer of linen, or of salines bodies, which at the moment of their solution cause a reduced temperature, and which should be applied immediately after being mixed, and frequently renewed. Others are composed of stimulating substances, and are intended to warm the part that produces tumours or ulcers, while a different set are designed to ally pain, and are composed of sedative or narcotic principles.

Many of the nostrums sold under the name of lotions are solutions of very agreeable ingredients, and their application is often productive of very serious effects.

LOTTERIES are schemes by which some modern governments have raised a revenue from their subjects, by taking advantage of that feeling of confidence in their own good fortune which is entertained by a large proportion of mankind. The plan upon which lotteries have generally been conducted is that of selling for more than their intrinsie worth a certain number of tickets or chances, and distributing by lot a part only of the money thus collected among a comparatively small number of the purchasers. Lotteries may thus be considered as games of chance, the aggregate number of players in which are sure to lose a part of their venture. During the period in which the English state lotteries were carried on by act of parliament, it is said that more than the amount required in prizes of different magnitudes was issued, and the profit to the state consisted of the sum beyond that rate which contractors were willing to give for the privilege of selling to the public the tickets or shares, and that for that purpose they divided the shares into halves, quarters, eighths, and sixteenths of tickets. The price paid by the contractors for this privilege varied with circumstances, but was usually about six or seven pence. One ticket beyond the amount required in prizes of different magnitudes is equal to 10s. for each ticket or chance that was issued, and the profit to the state consisted of the sum beyond that rate which contractors were willing to give for the privilege of selling to the public the tickets or shares, which for that purpose they divided into halves, quarters, eighths, and sixteenths of tickets. The invention of lotteries is ascribed to the Romans.
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LOT does not appear that they were resorted to for purposes of revenue, but rather as a means of amusing and gratifying the people, among whom the chances were gratuitously distributed, the prizes being of but little value. The earliest English lottery of which any record occurred was in 1559, when 40,000 chances were sold at ten shillings each; the prizes consisted of articles of plate, and the profit was employed for the repair of certain harbours. In the course of the following century the spirit of gambling appears to have assumed this direction. The first state lotteries were, early in the reign of Queen Anne, suppressed as "public nuisances." In the early period of the history of the National Debt of England, it was usual to pay the gross in the state lotteries in the form of terminable annuities. In 1660, they were added to the lottery tickets at 10l. per ticket, the prizes in which were funded at the rate of 14 per cent. for sixteen years certain. In 1746 a loan of three millions was raised on 4 per cent. annuities, and a lottery of 40,000 tickets at 10l. each; and in the following year one million was raised by the sale of 100,000 tickets, the prizes in which were funded in perpetual annuities at the rate of 4 per cent. per annum. Probably the last occasion on which the taste for gambling was thus fostered was in 1790, when every subscriber of 1000l. towards a loan of twelve millions at 4 per cent. received a bonus of four lottery tickets, the intrinsic value of each of which was 10l. In 1778 an act was passed obliging every person who kept a theatre or playhouse to obtain a yearly licence, and to pay 50l. for the same, a measure which reduced the number of lottery-offices from 400 to 51.

The immorality on the part of the government, in thus encouraging a spirit of gambling among the generality of the people, is well known, which are based, in the subdivision of chances to the sixteenth of a ticket at the minimum, it was intended to prevent the labouring population from risking their earnings, but this limitation was extensively and easily evaded by means which aggravated the evil. It was not until the illegal offices (commonly known as 'little goes') and insurance offices requiring extra profits to cover the chances of detection and punishment. All the efforts of the police were ineffectual for the suppression of these illegal proceedings, and for many years the instruments of revenue were manifest in parliament to this method of raising any part of the public revenue. At length, in 1823, the last act that was sanctioned by parliament for the sale of lottery tickets contained provisions for preventing the sale of all previous lottery tickets, and for forbidding illegal lotteries in this kingdom, of all tickets or shares of tickets in any foreign lottery, which latter provision is, to this day, extensively evaded.

The system of state lotteries was very long carried on by the French government, and was the cause of still greater demoralization than in England. Recently, state lotteries have also been abolished in France.

The Hamburg lottery, which is still continued, is established by funds from the American Congress of 1776 or England. The whole money for which the tickets are sold is distributed among the buyers, except a deduction of 10 per cent. which is made from the amount of the prizes at the time of their payment.

Lotteries have been very common in the United States, and have been sanctioned by the several states, so not much as a means of raising money for state purposes, as with the view of encouraging, as they supposed, many useful objects which could only be effected by raising at once a large sum of money. They have been established as means of raising money, even the publication of a book. The numerous frauds practised in lottery schemes in the United States have perhaps done more to open the eyes of the people to the mischiefs attending them. From 1760, when they were licensed, it was the manner in which they were managed.

In England, if not in France, there were lotteries annually instituted by government, and it was considered a fair way to reach the pockets of misers and persons disposed to dissipate their funds. In 1816, a national lottery was instituted, and perhaps no body of men ever surpassed them in intelligence and virtue. These remarks are merely quoted in order to show what a man of high character in America for integrity and knowledge thought of lotteries twenty years ago. The opinions which I am about to express were at that time, and are to this day, shared by a great number. We should have been the more to blam that juster views were not prevailing there as to the subject of lotteries: but we have no recent information on the subject.

LOTUS of the Antients. The plant or plants referred to by classical authors under the name of Lotus is a subject which has engaged the attention of numerous commentators as well as of botanists. To the difficulty of ascertaining the identity of a plant but imperfectly described is has in this instance been added the fact that it is mentioned by a very great number of authors to several very different plants. Fétel, the latest author (Flora de Virgile), enumerates no less than eleven to which the name Lotus was applied: it is unnecessary here to enumerate more than the most remarkable. Of these, some are of foreign, others of pernicious. Among the former are the Lotus sativa and syriestris of Dioscorides; the first, the states, is also called trifolium; it is supposed by some botanists to be Melilotus officinalis, and others to be M. corsula. Dr. Sibthorp has fixed upon Melilotus mossaeus as the plant.

The Lotus syriestris of Dioscorides, called also libyon, a native of Libya, and about two feet high, with leaves like those of Lotus trifolium, and fruit like that of fenugreek, was described by Trigonemotus of Alexania, and by Sibthorp, whom he found in Asia Minor and in Cyprus. Both kinds are described by the Arabs under the name of handshachcha, or handkooker, with garph and thus as other Arabic names. From the great number of similar plants of the tribe of Lotus, which are commonly cultivated as medicines, it is impossible, without specimens, to identify either of the above, but they are probably allied to the Melilotus.

Lotus aegyptiaca, or the Egyptian Lotus, is no doubt one of the Nymphæas, but one has been described as having grown in Egypt in fields inundated by the river, with a stem like that of the evoias, or Egyptian bean (Nelumbium speciosum), and a white lilliesflower, which rises out of the water at sun-rise, and sinks down again at its setting, a capsule like that of the pappus, which is composed of the Egyptian roast and make into bread, with a root which is likewise eaten, both in a dressed and undressed state. The plant is no doubt the Nymphæa Lotus of botanists. But its blue or black-coloured lotus is likewise represented, there is no doubt that the Egyptians roast and make into bread, with the Egyptian species. As the flowers of the Nymphæas are so highly esteemed by the Hindus, and notices respecting them constantly occur in their poetry and mythography, it is possible that an Eastern legend may have given origin to the myth of the nymph Lotus, flying from Priapus, into the aquatic lotoes." (Ovid, Metamorph., ix. 341.)

The Egyptian lotus however is not so celebrated as another less known tree, to which exaggerated description has assigned a fruit of the most delicious kind, upon which the lotophagi lived, and which, when strangers had once tasted, they ceased to wish to return to their native country. This is specially described as a tree, but there is no doubt that several have been described both by Dioscorides and Pliny as native of Italy of great size, forming excellent wood, with fruit about the size of pepper and as resembling that of the cherry. This description applies very closely to the Celtais Australia, or as in the most eminent part of the largest, as the mermaid-trees of the South of Europe, with wood of considerable hardness and toughness. It produces berries about the size of small cherries and with long stalks like them, eaten both by birds and children.

This however comes far from the character of the Lotus of the Lotophagi, of which the best description, according to Sprengel, is that of Polybius, who states that it was a moderate-sized thorny tree, with leaves like those of Rhamnus, but broader; that the fruit at first was like the white red rubber, and containing a small nut, taste sweetish,
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resembling that of figs or dates, and that a wine was prepared from it. This tree was a native of Africa, we know, from the Lotophagus, who employed the fruit as their chief food, being a people of the African coast near the Syrtes. (Herod., iv. 177.) Arabic authors, in their translation of the works of the Greeks, give the synonyms in both languages, and we have seen how the Greek ᾽λοτός, ᾽λοτός, ᾽λοτός, and the Latin loto arbore, the name side or sidar, given as the Arabic name of the tree, and nabach, nibah, or nabh, as that of its fruit. This name has been long known as that of a species of Zizyphus, and has been applied by botanists to one species or another. Shaw, in his Travels in Barbary, figures a species of Zizyphus, which he calls 'Seedra Arabum, quae et Lotus vetus.' It is a prickly branching shrub, with fruit of the size of a wild plum, and of a sweetish taste and saffron colour. He found it sold in the markets, cutted with it, and a liquor drawn from it. Desfontaines also found this Zizyphus Lotus on the same coast, and has fully described it. Munro Park found a species of Zizyphus in the interior of Africa, which forms a large tree with yellow farinaceous berries of a delicious taste; in 1836 it was 755 d for the commune. The principal manufactures are linen-thread and linens, which also constitute the chief articles of trade. There is a monthly fair for linens, horses and cattle. There is an agricultural society and an institution for instruction in agriculture, in which some fiscal gentlemen are enrolled.

LOUDÉAC. [BRETON.] A town in France in the department of Côtes du Nord, near the river Oust, a tributary of the Vilaine, and on the southern slope of the Meuse mountains. The population in 1831 was 6736 for the whole commune; in 1836 it was 655 for the commune. The principal manufactures are linen-thread and linens, which also constitute the chief articles of trade. There is a monthly fair for linens, horses and cattle. There is an agricultural society and an institution for instruction in agriculture, in which some fiscal gentlemen are enrolled.

LOUDON. [VIENNE.] LOUGHIVER, a provincial name for the bird called the Swine (Mergus albellus, Lin.).

LOUGHBOROUGH. [LEICESTERSHIRE.]

LOUGHREA. [galway.] LOUIS (Ludwig in German, Ludovicus in Latin) is the name of many kings of France. Louis I., called 'le Dernier,' or the Poitou,' was made his father's colleague in the empire. A. 940. He succeeded his father in A. 947. He was succeeded by his son Louis II., who was crowned at Rheims in A. 953.

LOUIS II., called 'le Bœuf,' or the Stammerer, son of Charles the Bald, succeeded his father on the throne of France in A. 877. He declared also the imperial crown against his cousin Carloman, son of Louis the German, but with no success. He was succeeded by his son Charles the Simple, who was crowned at Rheims, in A. 893. He was succeeded by his son Louis III., who was crowned at Rheims, in A. 931. He was succeeded by his son Louis IV., who was crowned at Rheims, in A. 996. He was succeeded by his son Louis V., who was crowned at Rheims, in A. 1002.
LOU was but nominal. The king's direct authority extended only over Paris, Orleans, Étampes, Compiègne, Melun, and the de facto Norman territory.

The duchy of Normandy was in the possession of Henry I. of England, who had taken it from his brother Robert during the preceding reign of Philip I. Henry and Louis quarreled about the limits of their respective states, and they had been in the habit of frequenting the French in France, which lasted for more than three centuries. Louis had the worst in several encounters. In 1126 he made peace, but war broke out again, when Henry of England was joined by his son-in-law the emperor Henry V, who was crowned in 1125. Henry, however, by Louis at the head of all his vassals, lay and ecclesiastical; even Suger, abbot of St. Denis, was there with the subjects of the abbey. These united forces are said to have amounted to 200,000 men, and the emperor thought it prudent to call on Louis and the scene of his greatest triumph. The same zealous assistance from his vassals in his quarrel with Henry of England as duke of Normandy, because the vassals considered it as their interest not to increase the power of their king. The empress Henry of England having given him one of his own sons, the Marquis of Tours, to be a Constable of his dukedom of Brittany, the latter did homage to Henry for Brittany as a fief of Normandy. (Hénauli, Abris de l'Histoire de France.)

Louis le Gros, assisted by his able minister Abbe Suger, succeeded in averting the crown some of the power which the great vassals had usurped; he revived the practice of Charlemagne of sending into the provinces commissioners called *musici dominici,* who watched the judicial proceedings of the great lords in their respective counties, and corrected those which referred to the king for judgment at the great assizes. In most cases however the king had not the power of enforcing his own judgments. But another and a more effective measure of Louis le Gros was the establishment of the communes, for which he deserves to be remembered among the earliest benefactors of the French people. He granted charters to many towns, the inhabitants of which were thereby empowered to choose their local magistrates, and administer the affairs of the community, subject to the overlordship to which they referred to the king for judgment at the great assizes.

By this means he began the creation of the third estate, or commons, as a check on the overgrown power of the feudal nobles. A good sketch of the history of the French communes is contained in the shoes and boots. Louis le Gros made a French war, and made a modern treaty with the king of Aragon, by which the respective limits and jurisdictions of the two states were defined. The chief and almost the only fault of Louis, which was that of his age, was his religious intolerance; he issued oppressive ordinances against the Jews, and always bore in mind, that the royal authority is a public charge, of which you must expect to render a strict account after your death.

LOUIS VII, called 'Le Jeune,' son of Louis le Gros, succeeded in 1137. He married Eleanor, daughter and heiress of William, duke of Aquitania, a lady who was handsome and inclined to gallantry. Thibault, count of Champagne, having revolved against the king, Louis took and burnt his town of Viter. St. Bernard, abbott of Clairvaux, advised Louis, in order to atone for his cruelty, to go on a crusade; but the Abbe Suger, who was minister of Louis, and had also served the king's father, opposed this project. The zeal of St. Bernard however prevailed, and the king set off with his wife and a large army in 1147. In the year of the king's coronation, there were left regents of the kingdom. The crusade proved unsuccessful: the Christians were defeated near Damascus, and Louis, after several narrow escapes, returned to France in 1149. His first act after his arrival was to repudiate his wife, on the ground that she had been improper; but the bishops, to avoid scandal, dissolved the marriage on the plea that it was not valid because the king and queen were cousins. Suger, who was now dead, had strongly opposed on political grounds the dissolution of the marriage, and the event proved the justness of his foresight, for Eleanor married Henry of England and Normandy, afterwards Henry II, by whom this marriage became possessed of Aquitania, Poitou, Maine, and in fact the greater part of France, over which the whole maritime territory from Dieppe to Bayonne Louis married Constance of Castile for his second wife. A war now broke out between him and Henry II of England, which lasted several years, and ended by a peace in 1176, after which Henry as duke of Normandy, and afterwards Louis as king of France, acknowledged the succession of Louis's son, Philip II., called 'Auguste,' in 1179. Louis died in September, 1180, at Paris, being sixty years of age.

LOUIS VIII, styled 'Coeur de Lion,' succeeded his father Philippe Auguste in 1223. Like his father, Louis was engaged in wars with the English, from whom he took the Limousin, Perigord, Aunis, and all the rest of the country north of the Garonne. At the request of the pope, he made war against the Albigenses, and laid siege to Avignon, where he died in 1226.

LOUIS IX, called St. Louis, succeeded his father Louis VIII. when he was twelve years of age, under the regency of his mother Blanche of Castile. During the minority of the king, there was a constant struggle between the crown and the peer of France. The same zealous assistance from his vassals in his quarrel with Henry of England as duke of Normandy, because the vassals considered it as their interest not to increase the power of their king. The empress Henry of England having given him one of his own sons, the Marquis of Tours, to be a Constable of his dukedom of Brittany, the latter did homage to Henry for Brittany as a fief of Normandy. (Hénauli, Abris de l'Histoire de France.)

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1456, and being defeated, had taken refuge at the court of Philip, duke of Burgundy, who protected him and maintained him for six years, until his father's death. Louis, when king, became the bitterest enemy of Charles, the son of Philip. The principal reason of their reign are connected with those of Charles, and are described under Bourgogne.

The cautious cunning and consummate hypocrisy of Louis gave him the advantage over the rash courage and headlong passion of Charles, which at last caused his ruin and death. Louis, however, in his own turn, was no less successful in depressing the power of the feudal nobles, several of whom he put to death, and in rendering the authority of the crown independent of them. He took into his service a body of Swiss, and kept also ten thousand Flemings, which he paid out of his own treasury.

He carried on a war against Maximilian of Austria, who had married Mary of Burgundy, daughter and heiress of Duke Charles, and took from him Artois and Franche Comté; but at last peace was made between them by the Treaty of Arras, in which Louis and Edward, prince of England, Charles of Anjou, count of Provence, beseeched that province to Louis XI., as well as his claims to the throne of Naples and Sicily, a beast which led to the subsequent attempts of the French to conquer Naples. Louis, however, being past the prime of age, had a strange compound of daring and superstition, of abilities and weakness, of firmness and perseverance in his political views, joined to an abject meanness of sentiment and habit. The taille, or direct taxation, was tripled under his reign. He acquired the title of 'Christian King,' which was given him by the pope in 1469. The best account of Louis XI. is given by his contemporary and confidential Comines, in his 'Mémoires.'

LOUIS XII., son of Charles, d'Autun, Besançon, descended from one of Charles V., succeeded in 1498, Charles VIII., who had left no children. He had been obliged by Louis XI. to marry his daughter Joan in 1476, but after his accession to the throne he dissolved the marriage. Anne of Brittany, the wife of Charles VIII. Louis asserted his claims to the duchy of Milan, which were derived from his grandmother Valentina Visconti, daughter of Gian Galeazzo, duke of Milan, and sister of the last duke Filippo Maria, who had died without issue. But the latter left noble and natural daughter Bianca, who had married the famous condottiere Francesco Sforza, who succeeded his father-in-law as duke of Milan, and the Sforza family had been confirmed in the possession of the duchy by the emperor, Milan being confirmed to the family in the empire. But the power of his son Gian Galeazzo, who was murdered in 1475, left an infant son Gian Galeazzo, whose uncle Ludovico assumed the government during his minority. After the death of Gian Galeazzo in 1494, Ludovico, who was suspected of having murdered his nephew, was confirmed by a diploma of the emperor Maximilian I. Louis however marched with an army into Italy and took possession of the duchy of Milan in 1499. In the following year he made Ludovico Sforza prisoner, and carried him to France. He was released in 1496, and went to France. He was released in 1496, and went

baldened by this success, Louis now put forward the claims of the crown of France to the possession of Naples derived from the Anjou. [Louis XI.] These claims had already been asserted by his predecessor Charles VII., who however, after invading Naples, was obliged to give up his conquest. The Aragonese dynasty had resumed possession of that kingdom; and Frederic of Aragon, who was king of Naples, feeling that he was too weak to resist Louis XI., applied for assistance to the Catholic king of Spain, who sent him an army under the seized commander Gonzalo de Cordova. Louis had recourse to secret negotiations; he proposed to Ferdinand of Spain to dethrone his relative and protect, and to divide the kingdom between them. Such a proposition was exactly suited to the character of Ferdinand, and he assented to it. Whilst Louis marched against Naples, Gonzalo, in consequence of secret orders from his master, was occupying in his name the towns of Calabria and Puglia; and a third worthy partner in such a transaction, Pope Alexander VI., gave to Louis the solemn investiture of the crown of Naples, which he had a few years before bestowed upon the unfortunate Frederic. The latter, perceiving the perfidiousness of his Spanish relative, surrendered himself to Louis, who gave him the duchy of Anjou and a pension for life. Louis and Ferdinand soon quarrelled about their respective shares of the spoil, and Ferdinand gave orders to Gonzalo to drive away the French from Naples. The two battles of St. Bixentos and of Chili on, in which the French were defeated by the Spaniards, decided the fate of the kingdom of Naples, which became entirely subject to Spain. A few years after the death of Pope Julius II., Ferdinand and the Swiss, who were theheerdu the French and the Swiss, in June, 1513; and thus, after fifteen years of fighting, intrigues, and negotiations, the French lost all their conquests in Italy. Louis XII. has been styled by courtly historians 'the father of the French,' but he was, in fact, kind-hearted to his people and red the taxes by one-half; but his foreign policy was unjust and imprudent. In order to forward his ambitious purposes he allied himself to the atrocious Borgias and the unprincipled Ferdinand; and the calamities which his troops inflicted upon Italy, the horrors of the standards of Brescia, the cruel execution of Count Avogadro and the two sons because they resisted the invaders, and other atrocities committed by the French commanders, are great stains on the memory of this 'paternal' monarch. Having lost his best troops, he retired with Ferdinand and the pope, and, at the age of fifty-three, married Mary, sister of Henry VIII. of England. His young wife made him forget his years and the weakness of his constitution: 'on her account,' says the historian, 'he would often rise at eight o'clock in the morning, or before, he fixed his dinner-hour at noon; and instead of going to bed at six in the evening, as heretofore, he often sat up till midnight.' He did not live quite three months after his marriage, and also left the same issue. He was succeeded by Francis I. Louis XIII., son of Henri IV. and of Mary de Medicis, succeeded his father in 1610, being only nine years old, and under the regency of his mother. In October, 1614, he fought a battle in April, 1617, for the succession to the crown of Spain, married Anne, daughter of Philip III. of Spain. Conr. Coccini, marchal d'Ancre, a Florentine, the favourite minister of the queen-dowager, had, by his insolence and his intrigues, excited the jealousy of many of the courtiers, and the queen-dowager had the court and began a civil war. Louis XIII., who was impatient of the rule of his mother, and of the parlours, but had not spirit enough to shake it off, consulted with a young courtier called Luines, and by his advice orders were given to the queen-dowager's nephew Duke of Vitri stopped him on the drawbridge of the Louvre; the marshal attempted to defend himself, upon which he killed him. The people of Paris made great rejoicings at his death, dragged his body through the streets, cut it into pieces, and threw it into the river, the following April Par was declared to have been guilty of treason and secrecy, and on the same grounds sentenced his wife, who was also a Florentine, named Guligai, to be beheaded, and her body burnt, and sentence was executed on the 30th July, 1617. This trial and sentence are among the most disgraceful of the old French judicature. The queen-dowager was sent to Blois under arrest. Luines now became the ruling favourite; for Louis was totally incapable of governing, and was reduced to being a mere figurehead. The queen-dowager escaped from Blois, and being supported by several nobles, the civil war broke out again; but Albert de Bressy, bishop of Luçon, known afterwards as Cardinal de Richelieu, acted as mediator between the king and his minister, and the queen-dowager was compelled to resign her office. Such a position was for a minister of the cardinal's hat, and in 1624 became minister, and later prime-minister, which he continued to till his death in 1642. Richelieu was certainly one of the greatest ministers of France under the old monarchy; fertile in his resources, firm, energetic, and correct, he succeeded in humbling and weakening the feudal nobility, and thus paved the way for the absolute government of Louis XIV. He checked the ambition of the house of Austria by assisting, first secretly and afterwards openly, the German Protestant states and the Swedes, by which means France.
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acquired a considerable influence in the affairs of the Empire. In 1638 Richelieu took Le Rochelle, the greatest stronghold of the Protestants of France, which had often whatsoever the kingly forces under the former reigns. The French armies took an important part in the Thirty years' war; they acted on the Rhine in concert with the Germans, while the Emperor and the French were at war in Italy against the Spaniards, a third army was fighting in Flanders, and a fourth on the frontiers of Catalonia. The French were generally successful; they took Rousillon, Assas, the whole of the Champagne, and Navarre. In December, 1636, Richelieu died at Paris, being 58 years of age. His great object had been, during all his ministry, to render the government of the king absolute, and to succeed. Richelieu at the same time patronized learning and the fine arts; he established the Academies of Letters and Science, he was a RHOLIS and high-minded; his ambition was not a selfish or a vulgar one. Among his agents and confidants there was a Capucin, called Father Joseph, whom he employed in the most secret and important affairs, and who seems to have equalled his master in power. Louis survived his minister only a few months; he died in May, 1643, leaving his son Louis XIV. a minor, under the regency of the queen-mother.

(Renault, "Abridgé de l'Histoire de France; Vie du véri-

ifiable.

A History of the Thirty Years' War.

LOUIS XIV. succeeded his father in 1643, being then barely five years old. His reign, including his minority, lasted seventy-two years, a long and important period, marked by many events of the greatest consequence, of which Louis took an active part. The history of such a reign requires volumes, and has been written or adverted to and commented upon by numerous historians who have treated of that age. But the best works for making us acquainted with the history of the reign of Louis XIV. is the contemporary memoirs of St. Simon, Dangeau, Louville, Noailles, Cardinal de Reis, Madame de Motteville, and others, and above all the writings of Louis XIV. himself, which were published after his death, and have been his most secret thoughts. Cardinal Mazarin, an Italian by birth and a pupil of Richelieu, but inferior to his master, was the minister of the regency during the minority of Louis. He continued the war against Bishops, and the emperor of Germany in conjunction with the Swedes. Turenne, the marshal of Grammont, and the duke of Enghien, afterwards the great Condé, distinguished themselves in those wars. The treaties of Münster and Osnabruck (1648) put an end to the war. It was the following year, 1648, that the Peace of Westphalia, by which France acquired Alsace, the Sunt-
gau, and the sovereignty of the bishoprics of Metz, Toul, and Verdun. The same year however that the war in Germany was ended, Louis was married, and he resumed the war in Flanders, which he carried on successfully. [From, LA.] The parliament of Paris and several of the high nobility revolted against the author-

of the cardinal. Louis, then ten years of age, the queen regent, and Mazarin, were obliged to leave the capital in consequence of a plot of the senators and knights, which was discovered and suppressed. The queen ordered the release of Condé; Turenne made his peace with the court, and Mazarin was exiled by a sentence of the parlia-

ment of Paris. Condé however continued the war, and being joined by the duke of Orleans, took Roanne, in the Fa later. In October, 1652, an arrangement took place, the king re-entered Paris, and Mazarin was enabled again to join the Spaniards, the cardinal de Retz, one of the chief actors in the disturbances, was put in prison at Vincennes, and Mazarin returned himself to the ministry. In 1654 Louis XIV. made his first campaign in Flanders against the Spaniards. In the following year he concluded a treaty of alliance with Cromwell against Spain. The war continued that and the next year with various success. Turenne commanded the French troops, and the prince of Condé fought on the side of the Spaniards against his own country.

In 1657 the emperor Ferdinand III. died, and Mazarin intrigued to prevent the election of his son, Leopold, and to put his ownson the imperial dignity for Louis XIV. He began the pretensions of the emperor of Bavaria, and representing and exag-

gerating the danger to the liberties of Germany which would supervise another election of an Austrian prince to the impe-

rial throne. It was soon found however that the election of Bavaria was not likely to be nominated, and Mazarin then intrigued separately with the electors in favour of Louis. He bribed, by actual disbursements of money and ample advances, the electors and princes of the Empire, as well as the electors-palatine, and even the elector of Brandenburg. He had suc-

ceeded in gaining over the electors of Mayence, John Philip de Schenborn, chancellor of the empire, Louis XIV. would have succeeded. Louis himself repaired to Metz, his army being cantoned in that neighbourhood, as if to sup-

port his pretensions. The cardinal sent to the Diet at Frankfort the marshal of Grammont and M. de Lyonne to further his object. In his instructions he empowered the electors to offer to Louis the most powerful assurances besides a revenue of 90,000 more for his relations, and, if necessary, to send at once to Frankfort the value of 1,200,000 livres to plate and other valuable objects as a security. (Instructions adressées de siemay, le 29 Juillet, 1657, par Mazarin, au maréchal de Grammont, et M. de Lyonne.)

The elector of Mayence however adjoined the election to the following year, and wrote to Leopold of Austria, king of Hungary and Bohemia, that he would not vote for the king of Portugal, as he had only promised it his vote. The other electors kept the money they had re-

ceived from Mazarin, and turned also in favour of Leopold, who was unanimously elected in 1658. From that time began the bitter animosity of Louis against Leopold, which lasted half a century, and was the cause of three long and bloody wars.

Meantime the war with Spain was brought to a close in November, 1659, by cardinal Mazarin, by the treaty of the Bilbao, in which the king of Portugal declared his son, the Infanta Maria Theresia, daughter of Philip IV. d Spain, and Louis XIV., was concluded. Spain gave up tie Artois and Roussillon, and stipulated for a free pardon t the Prince of Condé.

The new queen was married and made her entrance into Paris in 1660. She was then only 19 years of age. She brought with her a little more than a million of crowns as a dowry. She was extremely weak in her intellect and childil in her habits, but harm-

less and good-natured. Louis XIV. always behaved to her with considerate regard, but never felt any affection towards her. She was not even attended by his mistresses, of whom Madame de la Vallière, Madame de Montespan, and Madame de Maintenon are the most known.

In February, 1661, Mazarin concluded at Vincennes a third and last treaty with Charles, duke of Lorraine, by which Strasburg, Phalsburg, Stevi, and other places were given up to France. Nine days after this treaty Mazarin expired, at fifty-nine years of age, leaving a large fortune to his niece, Mancini, and to his nephew, whose name was New. Mazarin was so successful at the close of his career, in his treaties of peace, than he had been in his wars and former negotiations. The following satirical epitaph, published at the time, expresses the common feeling in that respect:

*Est-ce le cardinal a tombé en sort?*

*Français! que disfras nous de grand personnage?*

*Il a fait la paix, il est mort.*

*In post mortem nos rires are davantage.*

With the death of Cardinal Mazarin began the real emancipation of Louis XIV., who from that moment took the reins of the government entirely into his hands. He dismissed and imprisoned Fouquet, the superintendent or minister of finance, and had him tried and convicted of peculation and treason by an extraordinary commission, which condemned him to be hanged; but Louis aggra-

vated the sentence by shutting him up in the castle of Pignerol, in the Alps, where he died in 1669. In appointing Colbert in the room of Fouquet Louis made a good choice,
PARIS from making any remonstrances concerning the royal edicts before registering them, and not until eight days after their registration. This made it impossible for any one to address him written remonstrances. From that time and to the end of his reign the parliament offered little or no impediment to the royal authority; it withdrew itself from state affairs, and confined itself to its judicial functions.

Having destroyed all opposition from the only orders which enjoyed any consideration in the state, Louis took care to make it known to the tiers échelons, or communes, that it was not for its advantage that he had humbled the privileged classes. In fact, he did not consider the tiers échelons as forming a class, but as an ignoble crowd of rustics who were doomed to work for him and to obey his mandates, and from amongst whom he desired from time to time to select some individuals as objects of his favour. In his celebrated edict of 1723, concerning duals, he spoke of them as "insolent enough" to call out gentlemen to fight; and in case of death or serious wounds resulting therefrom, he sentences them to be strangled and their goods confiscated, etc., etc. The same penalties were inflicted on those who shall presume to fight against "unworthy persons and for abject causes." This law, most offensive to the great mass of the French people, was confirmed after Louis' death by the edict of February, 1725, and continued in vigour till the fall of the monarchy.

Louis established that system of centralization in the administration which has been followed and rendered more complete by the various governments that have succeeded each other till our own days, and which renders France the most centralized of all the great states of Europe. The executive residing at Paris is felt at every step by every individual in the most remote corners of the kingdom. He at the same time began the first labours for a regular system of legislation, by issuing separate ordinances for civil and criminal cases, for forests, police, finance, and roads, and the like. His system of finance was clear and simple, with all the imperfections formed the basis of distinct codes. The education of Louis had been very imperfect, and he was himself in great danger of being embarassed in his administration, for which he was rewarded by numerous flatterers. His reign was a brilliant epoch of learning in France. With regard to the arts, he had more pomp than taste; he felt a pride in conquering obstacles, as the millions he lavished on the canals, in a most unfavourable locality, amply testify.

Louis XIV. hated the Protestants, not so much from religious bigotry as because he considered them as rebellious subjects; he wanted uniformity in everything, in religion, in the army, in the administration, in all respects, and in the most severe manner. By a notorious measure, the revocation of the edict of Nantes, in 1685, by which Protestantism was proscribed in France. France lost thousands of its most industrious citizens, who repaired to England, Switzerland, Holland and Germany, where they formed colonies. Colbert to encourage French industry were rendered abortive by that cruel and fanatical act, of which the revolt of the Cévennes and the war of extermination which followed were remote consequences. The persecution of the Jansenists was another consequence of Louis' intolerance.

The foreign wars of Louis XIV. proceeded in great measure from the same ruling principles or prejudices of mind. He disliked the Dutch, whom he considered as the best enemies of France, being too proud, too clever, too independent. He had a passion for the fires of noble passions (Instructions pour le Dauphin, ii. ii., p. 201); and he carried his antipathy to the grave, without having succeeded in subjecting that small nation. He never excelled against him everywhere.

It is impossible not to be struck with the similarity of events in two men, however dissimilar in some respects. The hatred of Napoleon agaun England, which he designated as a nation of shop-keepers, was like that of Louis against the Dutch, and it produced similar results to his empire. The same desire of establishing uniformity in everything; the same mania for a unity and singleness of power, which both mistook for strength; the same ambition of making France the ruling power in Europe, under an absolute regime, like the dominant principles, or rather passions, of the "legitimate" and most Christian king, and of the pellébien édul and...
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champion of the Revolution.' Several of the plans and schemes of Louis XIV., relative to foreign conquests, were found in the archives, and were revived and acted upon by Bonaparte.

The first war of Louis XIV. against the emperor Leopold, Holland, and Spain, was ended by the treaty of Nymegen, 1678. Louis kept the Franche Comté and part of the Spanish Netherlands. The war broke out again in 1669, between Louis on one side, and the Empire, Holland, and England on the other. Louis undertook to support James II. in Ireland, but the battle of the Boyne and the capitulation of Limerick put an end to the hopes of the Stuartas, and James II. passed the rest of his life in exile at St. Germain-en-Laye, where he died a pensioner of the House of Austria. (See the second part of this Work.) In the most atrocious acts recorded in the history of modern warfare. This was no less than the devastation of the Palatinate by his commanders. A district of more than thirty English miles in length, with the towns of Hildelberg, were swept, and their inhabitants, besides all their cattle, horses, sheep, and hogs, were ravaged, plundered, and burnt, in cold blood, under the pretence of forming a barrier between the French army and its enemies. A cry of indignation resounded throughout Europe. Louis, in his own defence, said that he acted only to prevent the most atrocious acts recorded in the history of modern warfare. This was no less than the devastation of the Palatinate by his commanders. A district of more than thirty English miles in length, with the towns of Hildelberg, were swept, and their inhabitants, besides all their cattle, horses, sheep, and hogs, were ravaged, plundered, and burnt, in cold blood, under the pretence of forming a barrier between the French army and its enemies. A cry of indignation resounded throughout Europe. Louis, in his own defence, said that he acted only to prevent the

Louis XIV. raised the revenue of France to 750 millions of livres, or about 30 millions sterling, an enormous sum for the time. He imposed the tax of 3 per cent. on all direct and indirect products, and all articles imported into the kingdom, which was called the Direct Tax. It was very unequally assessed. The evils of the system of taxation under his reign are exhibited in a book, printed in 1694, called 'A Compendious History of the Taxes in France.' Louis spent 3655 millions of livres for the last two wars, that was about 150 millions sterling. The wars making France a nation of soldiers, which has been the occasion of much mischief ever since. (Mémoires Complètes et Authentiques du Duc de St. Simon sur le Séjour de Louis XIV., vol. viii. of it, Paris, 1829-39; Lettres Écrites sur l'Évêché de Chartres, and Lettres sur les Alterations qu'il éprouva pendant la Vie de Ce Prince, forming the 5th vol. of the 'Œuvres de P. E. Lemontay, Paris, 1829; Hérald, Abrégé Chronologique de l'Histoire de France; Voltaire, Séjour de Louis XIV. ; and the other French historians.)

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A few months after the death of Louis XIV., the extravagant praise bestowed on him by flattering or servile historians, on those who have examined into his faults, and even crimes, it must be fairly acknowledged that he was a remarkable prince, and had many valuable qualities. He was active, intelligent, and regular in business; quick in discovering the abilities of others, and using them constantly in adversity as well as prosperity, and a perfect self-command; a kind master, he was not prone to change his servants capriciously; was not harsh in rebuking them, and was ever ready to encourage them. He had many faithful and devoted servants. He was a man of noble birth, and his appearance imposing; he acted like a king, but he acted it admirably, at least to the then taste of the people; he had a lively sense of decorum and outward propriety, which never forsaketh. What he knew he learnt by himself: his natural gifts and the experience of his youth, passed among civil wars, made up for his want of learning and of study. If he carried his notions of absolutism to an extreme, he was evidently persuaded of the necessity of much, if not of all, of the sense of duty as from inclination. In his reign of seventy-two years he reared the fabric of the absolute monarchy in France, which continued for seventy-two years more after his death; and when it was shaken to pieces in the storms of the Revolution, all the ruling principles of his administration, uniformity and centralization, survived the wrecks, and France is still governed by them.

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The Regent began well: he reformed several of the most outrageous abuses of the late reign, he liberated a number of individuals who had been for years immured in the dungeons; he enforced a strict and rigid discipline; he endeavored to restore the general peace of Europe, courted the friendship of England, concluded the triple alliance of the Hague in 1717, between France, England, and Holland, and gave up altogether the cause of the Pretenders. Unfortunately for France, the disorder in which he found the finances, and the fearful deficiency in the revenue, made him listen to the wild schemes of Law, which ended in disappointment and the ruin of thousands of families. (Law, Jones.)

Philip V. of Spain, or rather his minister Alberoni, ha.
encouraged a conspiracy against the duke of Orleans, the object of which was to excite a revolution against him, to deprive him of the regency by a resolution of the three estates of the kingdom, and to place Philip himself at the head of the regency. The plot was discovered, several of the leaders, who were chiefly in Brittany, were punished by death, and in 1718 the Regent declared war against Spain. The war lasted not long; the Bourbon was discomfited and banished by his sovereign, and Philip of Spain made peace with France in 1720. [ALBENONI.] In 1722 Dubois, who had been made a cardinal, became prime minister of France.

In February, 1723, Louis XV., having completed his fourteenth year, was declared of age, and the regency of the duke of Orleans terminated. The same year Dubois died, and was followed to the grave by the duke of Orleans a few months after. The duke de Bourbon could not be made to submit to the authority of the cardinal. He proposed to marry Louis XV. to Mademoiselle de Sens, the duke's sister, who was a rare instance of virtue, beauty, and modesty united, in those times, but she refused, and preferred a life of retirement to a throne. Louis married, in 1725, Maria, daughter of Stanislaus, ex-king of Poland, and in the following year the duke of Bourbon was dismissed from the ministry, and the Abbé de Fleury, the king's successor, and afterwards cardinal, was substituted for him. The seven years of the cardinal's administration, which ended with his death in 1743, were the best period of the reign of Louis. [FLEURY, ANDRÉ HERCULES.] Fleury restored order in the finances, and credit and commerce revived. In 1733 the war of the Polish succession broke out, but in 1735 Louis XIV. and Augustus, the latter being the part of his father-in-law Stanislaus, the old rival of Augustus, against Austria and Russia, who supported the son of Augustus. [AUGUSTUS III.]

The war was carried on between France and Austria both at Rhine and in Italy. In the latter count the fortunes being joined by the Spaniards and the king of Sardinia, obtained great success. Don Carlos, son of Philip V., conquered the kingdom of Naples and Sicily, and thus a third Bourbon dynasty was founded in Europe. Peace was made in 1739, and the duchy of Lorraine was ceded to Stanislaus for his life, to be united after his death to the crown of France. Francis, duke of Lorraine, had Tuscany in exchange. In 1741 the war of the Austrian successor broke out, in which France took part, against the advice of Fleury, who was overruled by the king and the courtiers. In 1743 Fleury died, and Louis declared that he would govern by himself, and without any prime minister. The war continued till 1748, when it was terminated by the treaty of Aix-la-Chapelle. France derived no advantage from this assistance. The war was more for personal glory, and in possession of her father's dominions. Louis XV. was present at the battle of Fontenoi, in May, 1745, between the English, commanded by the Duke of Cumberlard, and the French, commanded by Marshal de Saxe, in which both armies were involved in a most severe fighting. The French however were carried on by means of six thousand flat-bottomed boats, by which landings were to be effected on various points of the coast, was revealed to the English ministry by an Irishman called Macaristill, and was abandoned. At last by the peace of Paris, February 1760, France formally ceded Canada, Nova Scotia, and its other North American colonies, besides Granada, Dominica, and Tobago in the West Indies; its navy never after recovered from its losses, its finances were exhausted, and its commerce destroyed. This was the last war of Louis XV. a war which was undertaken rashly and terminated in a disastrous and humiliating manner. The feeling of disgrace resulting from it sunk deeply into the heart of a people so vain and sensitive as the French, and it completed the decline of the power which had been carried on by the former popularity of Louis, which had been worn out by the incessant struggles with Spain and Britain. The king had now abandoned himself to gross licentiousness, and had become careless of state affairs. The mad attack of Damien made him still more alienated from his people. [DAMIER.] After the death of his mistress, the cardinal, who had never been able to control the king, but who had still some elevation of mind, became attached to more vulgar women [BARRY, MARIE JAGNEY], and at last formed a regular harem under the fashion of the Eastern sultans, but more odious from its contrast with the splendor of the court, which was now the scene, and upon which vast sums were squandered. The minister of foreign affairs, Choiseul, who had remonstrated with the king upon his degradation, was dismissed in 1770. He was the last man of some merit who served Louis XV. [Corse.] To the decay of his finances was the most obvious difficulty of ministers, to whose remonstrances, urged sometimes in a tone of上诉, and ominous seriousness, Louis used to answer, [Try to make things go on as long as I am to live; after my death a book is my life.] Louis died at Versailles, on the 10th May, 1774, 64 years of age. Two sons whom he had had by his wife were both dead: the eldest, the Dauphin, died in 1765, and left by birth a Saxon princess, three sons, five of whom succeeded to the succession of France. Louis XVI. Louis XVIII., and Charles X. Louis XV. had also by his wife several daughters, besides illegitimate children.

It was under Louis XV. that the corruption of morals and the neglect of the arts and sciences spread among all classes, being encouraged by the materialism and sensual philosophy which were taught by several men of letters. Both these causes, added to the general poverty, national humiliation, and ruined finances, prepared the way for the explosion which took place under the unfortunate successor. [La Corétte; Fantin des Odoards; Voltaire, the Prince de Louis XV.]

LOUIS XVI. grandson of Louis XV., succeeded him on 1774, being then twenty years of age. He had married, in 1759, Maria Theresa, daughter of Joseph II. He chose for his minister of finance Turgot as a honest and enlightened man, who, in concert with his colleague Malesherbes, perceiving the tempo of the taxes, wished the king to take the reform into his own hands, abolishing the corvées and other feudal exactions, levying the direct taxes all over the kingdom, granting liberty of conscience and recalling the Protestants, reforming the criminal code, compiling a uniform civil code, giving freedom of trade, rendering the civil power independent of the church, and securing the presence of the king in the convents, and establishing a new system of public instruction. These were the real wishes of France: if these could have been satisfied, the revolution would have been unnecessary. But the bigotry and the nobility strengthened to such a degree the marks of the regency, that Louis was disposed to make changes which would reduce their own importance, and the old count de Maupeou, who was also one of the cabinet, dissuaded the young king from them. Turgot was dismissed. Louis however, following his own natural disposition, effected much partial good; he abolished the corvées and the practice of torture, granted liberty of trade in corn in the interior of the kingdom between province and another, made many reforms in the admiralty, and in the navy. This work of reform was the first of him himself in his own name. He also granted toleration to the Protestants. But all these were little more than palliatives, and did not strike at the root of existing evils. The deficiency in the treasury, was the foundation of the punishment of Louis XVI. Louis Augustus, his brother, was the most extravagant prince that ever was. The great stumbling-block of Louis's administration. He however went on for some years, during which he engaged in a war against England, which was very popular with the French, humbled as they had been in the peace of 1763. This struggle with that power. The dropping of the war was a regular one for an absolute monarchy to embark in; it was in support of the revolted colonies of North America, to which had declared their independence of Great Britain, and has been since considered by many a political blunder. The French revolution of 1789, which broke out in 1776, a treaty of commerce and alliance was signed at Paris between the French cabinet and Franklin and Silas Deane.
on behalf of the United States, by which the latter were acknowledged by France as an independent community. In the following May a French fleet, under command of de Grasse, sailed for America in June the first hostilities took place at sea, and on the 10th July France declared war against England, and 40,000 men were assembled in Normandy for the invasion of England. This plan however was defeated by the objections of the King, who announced that he was going to hold a royal sitting. Meanwhile the French assembly were closed, and a guard placed there to prevent the deputies from entering. Bailly led them on the 20th, to the Jeu de paume, where they swore not to separate until they had drawn up a new constitution for the kingdom, and the redress of grievances. On the 23rd the king convoked the three estates in the common hall, and after qualifying the resolutions of the 17th preceding as illegal, ordered the estates to leave the house, and with the advice of a minister, to deliberate there upon certain subjects which he himself wrote them. After the king's departure, the third estate, joined by part of the clergy, refused to leave the hall, and when the grand master of the ceremonies came to enforce the king's order, they formed a new assembly to fulfill their duty towards their constituents, and that force alone should disperse them. On the 26th part of the deputies of the nobility joined the third estate, and the name of national assembly was publicly recognized. The events that followed were no less extraordinary than they had been since the 17th, and were not known to be inserted in this article. The national assembly, by the constitution it formed, changed the old French monarchy into a representative republic, with a single chamber, and an hereditary magistrature, with the name of people's代表大会. In the meanwhile the country was in a state of political and social fragmentary. They suppressed not only the feudal jurisdictions, but also the manorial dues and fees; the titles of nobility; the tithes, convents, and the corporations of traders; they confiscated the property of the church; they abolished the old division of the kingdom by provinces and created a new one by departments: they changed entirely the social relations of the country, so that even Mirabeau was startled at the rapidity with which they were legislating, and began to think that the king was not the only one to legislate. These states have all the same consisted of the three orders, clergy, nobility, and the third estate, or commons. Every order formed a separate house, in which it discussed the measures proposed by the government, and decided by a majority vote, and all such propositions as were not to pass the two houses were defeated, and so was the last. Necker, to obviate this difficulty, proposed to give to the third estate a double vote, so as to balance the votes of the other two houses in the event of the assembly choosing to vote the third estate, and this was in fact the beginning of the Revolution. It is remarkable that Monsieur, the king's brother, after the Louis XVIII, was one of those who supported this organic change. On the 3rd of June, the three estates having assembled in the common hall, the king opened the session by a temperate speech, which was much applauded, after which the clergy and nobility withdrew to their separate rooms to deliberate among themselves. The third estate remained in the common hall; the clergy and nobility withdrew to their separate rooms to deliberate among themselves. The third estate remained in the common hall; the clergy andnobility withdrew to their separate rooms to deliberate among themselves. The third estate remained in the common hall; the clergy and nobility withdrew to their separate rooms to deliberate among themselves.
few moments’ popularity; and the assembly, having stated that the object for which it had met was completed, closed its sitting on the 30th September. The assembly consisted of the 12 senators, 272 deputies, 90 judges and other magistrates, 208 belonged to the parochial clergy, 241 were gentlemen of noble birth, 48 archbishops and bishops, 35 abbots and canons, 176 merchants and landed proprietors, and the rest physicians and men of letters. In consequence of errors, they were errors of judgment, for the majority were certainly sincere in wishing to maintain the kingly office, which they thought compatible with democratic institutions. Through a mistaken delicacy however they committed a very serious blunder before they parted; for they resolved that no member of that assembly should be eligible to the next assembly of the representatives of the nation, which became known by the name of the legislative assembly, and which was composed of much worse materials. The majority in the legislative assembly were men hostile to the monarchical principle altogether; they were divided between Girondins and Jacobins. [GironDins.]

They began by sequestering the property of the emigrants; they issued intolerant decrees against the priests who would not swear to the constitution, and by those means obliged them to run away from France; they treated the king with marked disrespect, dismissed his guards, provoked the war against Austria and Prussia, encouraged republican manifestations in various parts of the country, and even in the army. The king finally judged in his own court prisoners sentenced by the revolution. The Girondins and other people disaffected to the new order of things (the word ‘incivisme’ was invented to designate this new offence), and issued an enormous quantity of paper money, which quickly becoming depreciated, added to the general distress.

The king endeavoured, by the use of his ‘veto,’ to check this headlong career. An insurrection in June, 1792, was the consequence; the palace of the Tuileries was assailed and entered by the mob, which treated the royal family with the greatest insolence, threatened their lives, and obliged the king to put on a red cap and show himself at the window to the crowds below. A second insurrection, better organized, with the avowed object of abolishing the kingly office, was supported by a party in the legislative assembly. The king fled from the Tuileries on the 10th of August, and after a desperate defence by the Swiss guards, entered it and massacred all the inmates. The king and royal family had time to escape and take refuge in the hall of the legislative assembly. The assembly deposed the king, sent him and his family to the Temple, and the mob, being joined by a republique named after the Geneva, and one of the Jacobins, convoked a national convention to exercise the sovereignty in the name of the people. In September the massacres of the political prisoners began; the cry of ‘aristocrat’ became a sentence of death against any obnoxious person. On the 21st of October the mob had broken into the Temple, and shortly after prepared to bring the king to trial. The principal heads of accusation were, his attempt to dissolve the states-general in 1789, his escape to Varennes, and other acts previous to his accepting the constitution of 1791. Since his acceptance of it there was no charge that could be substantiated against him, except the exercise of the prerogatives given to him by the constitution, such as the ‘veto,’ and changing his ministers. The rest were mere malcontents and surmises of an orden despotic, discredited with the constitutional party. & The trial was opened on 13th December, 1792. The Girondins and the Jacobins united against Louis, and no was found guilty of treason and conspiring against the nation. The sentence was pronounced on the 16th January, 1793. 232 members present voted in the convention, 366 voted for death unconditionally, 288 voted for imprisonment and banishment, and the rest voted for death, but with a repulse, hoping thereby to save his life. The majority which sent Louis to the scaffold was only five.

On the 18th January, 1793, Louis was taken by coach to the Place Louis XV., where the guillotine was fixed. He appeared silent and resigned, and embossed by religious thoughts. Having ascended the scaffold, he attempted to address the people, but Berruyer, the commander of the national guards, ordered the dragoon to Louis then gave up the attempt, took off his coat and cravat, and laid his head on the block. He was beheaded at ten o’clock in the morning. His consort Marie Antoinette was tried, condemned, and beheaded in the following October. The character of that unfortunate princess has been rescued from unmerited obloquy and the malignity of her enemies by Madame Campan in her Mémoires sur la Vie privée de Marie Antoinette, London, 1823. Louis left one son, the famous future Louis XVI, who was then just fourteen years old. He had been styled Louis XVII by the royalists after his father’s death.

LOUIS XVIII., Stanislas Xavier, count of Providence born in 1755, was also styled ‘Monseigneur’ during the life of the brother Louis XVI, who, just before his death, wrote to him, appointing him regent of France. After the fall of the Jacobin, Louis XVII, in 1795, he assumed the title of king of France and of Navarre, although he was then an exile, and he was acknowledged as king by the Royalist emigrants, who composed a small court around his person. He had shown his liberal disposition in favour of rational reforms in France in the first period of the Revolution, but the violence of the Jacobins obliged him to emigrate in 1791. He lived for some time at Verona, in the Venetian territories, which he was obliged to quit when Bonaparte invaded Italy in 1796. He then settled at Venice, and at last settled at Warsaw, but in 1803 removed to Mittau in Courland, under the protection of Russia. By the peace of Tilsit, 1807, he was obliged to leave the Continent, and he repaired to England, where he fixed his residence in London in 1811. He was the last joint king, the last supreme monarch, and the last constitution of France. Louis XVIII became the fundamental law of the kingdom, and such remain to this day, with a few alterations introduced in 1830.

Louis was sincere in his professions, but he was surrounded by disappointed emigrants and old royalists, whose unhappy lot he shared, and who found in him a refuge and a resource. He was the protector of the Jacobin, the abettor of the Secretary of State, and the inspirer of the Chamber of Deputies, which was elected under the excitement of this second restoration, proved ultra-royalist, and went further than the sovereign. To banish all those who had voted in the convention for him, to make the rule of his life obedience to the will of the people, was an object of his, and he gave to the ministry of Napoleon after his return from Elba. Mean sanguinary reactions took place in various parts of France, especially in the south, where the old animosities of the Catholics against the Protestants was revived by popular feelings. At last Louis himself saw the day when the violence of his pretended friends exposed him, and he dissolved the chamber, which was styled ‘Chambre Introuvable.’ In the new elections the Jacobins constitutional party regained the ascendancy, and the king in 1815 was deprived of all power. Louis was Count Decazes. But the assassination of his nephew, the Duke of Berry, by a fanatical republican, in February 1820, again alarmed the court, and restored the ultra-royalist Decazes was dismissed, and the king was placed at the head of the government. When the constitution was altered, the newspapers were placed under a censorship, and other measures of a retrograde nature were adopted. No open violation of the constitution however was committed. In 1833 Louis, in concert with the Northern provinces, a
an army into Spain under his nephew the duke of Angouleme, to rescue Ferdinand from his state of. throne. [Ferdinand VII.]

The expedition was successful; it rescued Ferdinand to the plenitude of his power; but it did not secure a defensive and permanent

In September, 1824, Louis XVIII. died, having been a long time ill and unable to walk: he returned to the last mental faculties and his self-possession. He

left no issue, and was succeeded by his brother Charles X. Louis had a cultivated mind, considerable abilities, and a pleasing address: his ideas were enlightened and liberal, and in ordinary and settled times he would have proved an excellent constitutional king; as it was, he managed to steer tolerably well between extreme opposite parties, and in a critical period. In 1823, the account of his emigration. 'Relation d'un Voyage de Paris à Bruxelles et Coblenz,' is curious. (See also Mémoires de Louis XVIII. par le Duc D. an assumed title, Paris, 1823.)

LOUIS, or Louis d'Or, a gold coin in the old system of France, first struck under Louis XIII. in 1614. Kelly says, 'the Louis d'ors coined before 1726, which passed then for 20 livres, were coined at the rate of 36½ per French mark of gold; 23 carats fine; the remedy in the weight was 11 gousset per mark; the weight: the former change, 12 carats: these ceased to be legal coin in France as far back as 1726; but they still continued to circulate through many parts of Germany and Switzerland, where they had a fixed value, and were known by the name of 'the old Louis d'Or.' Places rises 21 carats fine; and in some books on exchange printed before 1786.

'From the year 1726 till 1785 Louis d'Ors were coined at the rate of 30 to the mark of gold 23 carats fine, and with a remedy of 15 gousset in the weight, and 11 gousset per mark; thus at 39½ per piece were coined from a mark 21½ carats fine. These ceased to be current in France in 1786. In Holland, Germany, &c., they were called 'new Louis d'Or,' to distinguish them from those last mentioned. In 1786 and 1787 all the gold coin lost its value, and the gousset, as far as 39½ pieces could be melted down; and a new coinage then took place at the rate of 32 Louis d'ors to the mark, of the same degree of fineness, with the same allowances for remedy as above; thus at least 39½ pieces were coined from a mark of gold 21½ carats fine. The intrinsic value of this new Louis d'or (allowance being made for the remedy) was 18s. 9d. sterling; and 1½ sterl. = 23 livres 10 sous Tournous in gold. Louis d'Ors were considered as a current coin in most parts of the Continent; though in England they were sold only as merce. No part of the coinage was ever travelled; and according to the demand, their price fluctuated from 18s. 6d. to 21s. sterling. Upon the return of the Bourbon family, the twenty-four pieces struck by Louis XVIII., in imitation of the Napoleon, received the name of 'Louis d'or'; but the name is likely to be occasionally to the same coin struck by King Louis Philippe, but which are more ordi-

narily called twenty-four pieces.
The old coin, before 1726, were called Louis-

burgus, and Louis D'Orment (Fernandis, Dict. Universelle; Kelly's Universal Cumbist, ed. 1811, vol. i., pp. 146, 147; ii., 202.)

LOUIS, ST. [Missouri.]

LOUISBOURG. [Cape Breton.]

La Maine, or Maine in 1604, was the name of an extensive group of islands situated in the Pacific, south-east of the great island of Papua, or New Guinea, between 8° and 12° lat. and 150° and 155° E. long. It is generally supposed that this group was discovered by Bougainville in 1766, but it is more probable that it was published by Louis d'Or after having traversed the strait between Australia and New Guinea, which still bears his name.

Few islands of the Pacific have been less visited by European vessels than New Guinea and Louisiand, and our information respecting the latter is more meagre. We do not even know the number of the islands which belong to the last-mentioned group, but it is certain that they are very numerous. They occupy a space of more than 300 miles from north-west to south-east, and none of them appear to be of any considerable size. There is not one that exceeds forty miles in length. Some of them rise to a considerable ele-

Inhabitants belong to the race of the warlike Papuans, and are

very averse to any intercourse with foreign vessels which visit the dangerous sea that washes the southern coast of these islands. It is supposed that they are cannibals. The inhabitants make large pigroges, or canoes, and use shields and arrows in their defensive and offensive

Louinville, 'Voyage round the World;' D'Entrecasteaux, 'Voyage round the World.'

LOUISIANA, the most south-western of the United States of North America, comprehends the countries on both sides of the Mississippi between 26° 56' and 32° N. lat., and 89° 20' and 94° 30' W. long. The Gulf of Mexico washes its shores on the south for about 400 miles. The Sabine river separates it on the west from the Mexican province of Texas. This river constitutes the western boundary-line for about 390 miles; the remainder of the line, about 60 miles, runs along the meridian of 94° 30' to 33° N. lat. On the north the parallel of 33° N. lat. constitutes the boundary-line between Louisiana and Arkansas for 172 miles. Between 33° and 31° N. lat. the Missis-

sipi separates Louisiana from the state of Mississippi, the course of the river between these parallels being 255 miles. The remainder of the boundary between these states lies along 31° N. lat., between the Mississippi and Pearl rivers, and then along the last-mentioned river to its confluence with the Sabine at 106° 40' W. long., and 30 miles. The area of Louisiana is calculated at 48,220 square miles, or about 2000 miles less than that of England.

Surface and Soil.—Louisiana presents a great variety of surface, though it is a plain country, and only in a very few districts of its modern development, is it formed. The p nutritious and soil is on the plains are on different levels, a circumstance which causes a great variety in soil, climate, and agriculture, and gives to the different regions entirely different features.

The delta of the Mississippi extends along the shores of the Gulf of Mexico, and is divided into three parts, (91° 40' W. long.) to the Pass de Marne (89° 15' W. long.) and Lake Borgne on the east, and comprehends a coast-line of above 250 miles. From Lake Borgne its boundary runs westward through the lakes Pontchartrain and Maurepas, an area of about 100 square miles. It then crosses the Mississippi westward, and continues along the course of Red River to the neighbourhood of the rapids. At this place begins the western boundary of the delta, which follows the course of the Bayou Boufau up to its union with the Mississippi on Crocodile river, and thence upwards, being an influx into the Atchafalya branch of the Mississippi may be considered as the boundary line, and afterwards the Atchafala to its mouth in Atchafalya Bay. The whole country contained by these boundary-lines, and comprehen-

ing the area of the state, is divided into 717 square miles, is for six months of the year either covered with water or a swamp. The swamps extend along the sea, and are called the marshes; the inundated region lies north and west of the marshes.

The marshes are a level on the sea at high tide. They are destitute of trees and shrubs, but covered with grass, which however is quite useless, as the swamps can only be traversed in boats by following the numerous watercourses which intersect them. Between the mouth of the Mississippi on the east, and the Pointe aux Chenes on the west, the swamps extend only about twenty miles inland, and terminate on the southern border of the elevated tract called Terre Bonne, the only part of the delta which exhibits any considerable extent of surface not subject to inundation: the part of the delta described as marshy, is confined to the very narrow banks of the watercourses, and even these elements are only formed on the northern borders of the marshes, on account of the great unhealthiness of this region.

The inundated region comprehends more than two-thirds of the delta. It may be divided into two portions, to
deeply inundated, and the less deeply inundated tract. All that part of the delta which is west of the Mississippi and of the Bayou la Fourche, as tract west of Baton Rouge, is deeply inundated from February to August, during which period it forms an immense lake. Not even the banks of the Atchafalaya are free from inundation. The common depth of the water is six feet, but in many parts it is eight feet. In the Red River delta it is much more. During the remainder of the year it is dry and the soil firm. The whole region is covered with high and valuable forest-trees, but no settlements have been formed in this country. It may be compared with the immense inundated plains on the southern banks of the Amazon river.

The country east of the Mississippi and of the Bayou la Fourche, as well as the tract of higher ground west of Baton Rouge, is only inundated to the depth of three or four feet, and the inundations do not exceed a month. The banks of the rivers also are several feet higher than in the country farther back, so that they are at most only slightly inundated. The greatest part of this country is indeed covered with trees, but there are also tracts without wood. As the elevated banks of the rivers extend in width from a quarter of a mile to a mile, numerous settlements have been formed on them. The most valuable are those along the Bayou la Fourche and the Mississippi Proper. On the former, the vicinity of the mouth of the sea, and on the latter at Fort St. Philip, about 50 miles from the mouth of the river. To protect the cultivated ground from the annual inundation a bank of earth, called lève, has been formed on each side of the Mississippi. It begins at Fort St. Philip and extends to the new grounds of Baton Rouge (30° 30'), a distance of 130 miles. In some places above New Orleans this embankment is fifteen feet high and thirty wide at the base, but generally it does not exceed twelve feet at the base and five in height.

If we compare the delta of the Mississippi with that of the Ganges, the marshes correspond to the Sunderbunds, except that they are not covered with trees. The inundated portion of the American delta has however this disadvantage: the rivers do not extend so far off as to be deflected by the high grounds along the prairies of Opelousas and Attakapas, and farther on by the high land of the Terre Bonne. This circumstance retards their efflux, which is still further retarded by the extremely small slope of the inundated tract. The tide of the Mexican Gulf, though it does not rise above three feet, unless it is impelled by southerly winds, ascends the Atchafalaya to the influx of the Courtableau, a distance of more than 100 miles. Thus the water becomes more stagnant in the greater part of the delta, and produces great dangers to navigation. This circumstance, added to the difference of climate, renders it very doubtful if the delta of the Mississippi ever could acquire a population and a degree of cultivation appropriate to that of England.

The country west of the delta to the Sabine river is like a wide belt of marshes along the sea. They extend hardly ten miles inland along Cote Blanche Bay and Vermilion Bay, but from 20 to 30 miles inland west of Vermilion Bay. These marshes however are not quite destitute of trees: several clumps of live oak occur in them, especially on both sides of Mermentou river. North of these marshes the country rises considerably, and extends in open prairies, which are generally destitute of trees, but covered with a number of small bushes, and the prairies are intersected by numerous sluggish rivers, whose narrow bottoms are overgrown with trees, and contain fertile tracts. A few settlements have been made on these bottoms, but the prairies themselves are almost entirely inhabited by the tribes of the Attakapas and Opelousas. The whole country between these prairies is covered with the prairies. The prairie of the Attakapas extends in a narrow strip south-eastward between the marshes along Vermilion and Cote Blanche Bay and the river Teche. The banks of the last-mentioned river form the western boundary of the inundated country, but they are above the line of the inundation, and contain many rich cultivated tracts. To the west and north-west of the prairies of Opelousas lies an extensive wooded region, which on the Sabine extends to an almost uninterrupted line of high land from the marshes. It occupies the country about the north-western half of the course of the Calesius river, and approaches the inundated country of the delta on the Bayou Boeuf, a branch on the Courta.

The whole of this extensive tract is covered with pine-forests, and the soil is of very indifferent quality. It is an undulating plain, except at the most south-eastern point of Louisiana, between the upper course of the Sabine river and the Red river, where it rises into high hills.

Red River may be considered as the boundary of the wooded region. Where it enters Louisiana, high grounds are mixed with deep and extensive marshes. On either side the river it divides into numerous branches, presenting a most intricate maze of islands, inlets, channels, and lakes, of every size from one to thirty miles in length. Lake Bistineau is 40 miles long and from one to three wide, and Lake Baca is a shallow lake on one side of the river. The low region is inundated from one to twenty feet during the months of February, March, and April, but in summer the lakes and low grounds are nearly dry, and in October and November they become marshes covered with a carpet of green and succulent herbage. There are yet no settlements in this country, though it seems better adapted to them than the lower part of the delta. Below Grand Ecor, the inundation of Red River appears not to extend beyond its limits, as the banks are covered with trees, chiefly pines, which skirt it as far as the rapids near Alexandria have rather a fertile soil; numerous settlements have been formed below Natchitoches.

The country extending from Red River to the west to the Sabine river is the most extensive and important part of the delta. This tract consists mostly of excellent forest-land, especially that portion which lies west of the Washita or Ouachita river. In this region, east of Lake Bistineau, is the highest land of Louisiana. It consists of numerous hills rising from 100 to 200 feet above their base, and covered with trees. These hills are interspersed with ash, hickory, and dogwood, and produce a luxuriant herbage in summer and spring. Further east these hills sink into a plain, which extends to the Washita and river Boeuf, a confluent of the former. This plain is covered with stunted pine-forests and sometimes more cultivated land; but the river bottoms are wide, and have a fertile soil. The settlements are still few, and do not extend beyond the bottoms. Where however the rivers Washita and Boeuf approach one another, an extensive tract of fertile land occurs, on which the settlements increase rapidly.

The country on both sides of the Black River, which is formed by the junction of the river Boeuf with the Washita, resembles in every respect the less inundated part of the delta. But between the river Boeuf and the Mississippi, the country extends as far as 10 or 20 miles from the banks, and is entirely covered with woods, chiefly pines, and in many places with mixed forests. On the other side of the Mississippi, which is likewise inundated by the water which issues from the Mississippi in the first half of the year. Narrow swamps along the river become quite dry in the second half of the year, and in other parts of the country, produces fine timber-trees, especially cypress. From these forests New Orleans is supplied with lumber and fuel.

Along the east bank of the Mississippi extends an extensive region, broken by numerous streams. Its projections are away from the action of the river, and are known by the name of Bluffs. They rise more than 100 feet above the alluvial plains near the Mississippi. These hills continue eastward for 10 or 20 miles from the banks, and are intersected by numerous sluggish rivers, some of which are mingled with oak, sweet gum, poplar, tule trees, hickory, and pine, and have an almost uniformly productive soil. The degree of this hillocky region increases, and are followed by a plain which is considerably elevated above the delta. This plain is entirely covered with pines, and perpendicular cliffs bordering the bottom are covered with dense forest of pine. On the south it does not extend to the lakes of Miss., Repas, and Pontchartrain, but begins imperceptibly to lose itself at a distance of about ten miles, until it advances to the river Amite and the lakes, where it terminates in narrow swamps, which line the banks of the river. This declivity of the more elevated plain the number of settlements is greater than in any other part of Louisiana of equal extent. The soil, though light, is well adapted to the cultivation of cotton, and the extensive pine-forest is well adapted to the cultivation of cotton, and the extensive pine-forest.
acrossion of water from the right until it has attained 31° N. lat., where it is joined by the united waters of Red and Black rivers, which together probably drain a tract of 100,000 square miles. In February and March, the great fund, or countenance, or cuss of water during the spring months. A mile and a half below the mouth of Red River the Mississippi sends off its first great branch, the Atchafalaya, which, flowing in a southern and south-eastern direction, traverses the lowest part of the delta of the river, and by passing through the marshes into Atchafalaya Bay, [Atchafalaya.] Lake Chicotimahes, or Grand Lake, is about 40 miles long and from two to five wide; at its southern extremity it is 40 feet deep. It is connected with the Atchafalaya by an estuary, or canal, of 30 miles, which traverses the intervening country, and divides it into many islands, making a kind of network.

From the Atchafalaya the Mississippi flows in a general south-eastern direction, but with many great bends. About 30° N. lat. the river is 22 miles long and great bends. The Iberville, which runs eastward, and joins the Amite river. The united stream, preserving the latter name, falls into Lake Maurepas, a circular sheet of water about 8 miles in diameter. This lake is united to the lake of Pontchartrain, [Pontchartrain.] Lake Pontchartrain, as it is called by the inhabitants, is at the point of the river, and by a causeway united with it by the Pass des Chaleurs. The Iberville river, before its union with the Amite, has but three feet water, and that only during three months of the highest overflow. A few miles below the influx of the Iberville, the Mississippi has a split half-fow through the land, which is only six miles long, and joins the Atchafalaya. Though it has only water during the high flood, it is important for the internal navigation. Farther down occurs the last great efflux of the Mississippi, the La Fourche (the Fourche de terre.) Below New Orleans this river is shallow from between 18 and 20 feet deep. From the mouth of the La Fourche the Mississippi flows east to the town of New Orleans, and thence to the sea in a south-eastern direction. Shortly before it reaches the Gulf of Mexico it divides into six branches, called the West, South, East, the East of Northern, and the Other. The most frequent is the East Pass, with 12 feet water at ordinary tides; the South-West Pass is nearly as deep as the East Pass. The other passes have from 3 to 8 feet water, but they are rarely frequented. The depth of the water increases rapidly, and there are many rapids and falls, as sometimes rises to 20 and 22 feet, and remains for several days on the ground. It seems that frost occurs there every winter, and even sometimes in April and September, so that at Natchitoches it does great injury to the cotton and tender plants. In July there are very heavy rains in Arkansas, Louisiana, and Mississippi; the canes blow from the south, which cause great damage by forcing the water of the Mississippi into the adjacent level country. In winter the north-western gales, which are very cold, produce great and sudden changes in the temperature of the soil.

The Sabine, which divides the country from Texas, rises in the last-mentioned country. Its general course is nearly south, with an elliptical curve to the east; it flows upwards of 300 miles. Before the sea it flows into a shallow lake 30 miles in length, and from three to five wide. In ordinary tides there is not above three feet water on its bar. East of the Sabine is the Calcasieu, which rises in the angle between the Red River and Sabine, flows parallel to the last-mentioned river at a distance of about 53 miles, expands near the mouth likewise into a large but shallow lake, and has also only three feet water on its bar. Its course is upwards of 200 miles. The Vermilion, which goes to the Gulf of Mexico, is properly only the channel by which Lake Pontchartrain discharges its waters into the Gulf of Mexico. This lake is of considerable extent, and receives most of the waters which originate on the prairies of Opelousas, but the different streams unite before they meet in one river, and the only name by which the bay, and the mouth of the Mermentou, and soon afterwards falls in the lake. It is not better adapted for navigation than the Sabine and Calcasieu. Sixty miles east of the mouth of the Mermentou are two large bays, Vermilion Bay and Cote des Cheneaux Bay, which are united by the island of Adam, and discharge its waters into the Gulf of Mexico. The bays have twelve feet of water, but the passes only five or six feet. Vermilion Bay receives the river of the same name, which runs on the prairies of Opelousas, 30° 20' N. lat., and runs in a general southern course about 80 miles for vessels of five feet draught to a considerable distance.

Climate.—The opinion of Volney, that the countries along the Mississippi have a much milder climate than those along the Atlantic, is now known to be incorrect. On the contrary, it has fallen to a depth of 11 inches and the mean temperature of the latter, under the same parallel, is from two to three degrees higher than that of places west of the Appalachian Mountains. It is found that the seasons are milder at Charleston, South Carolina, 32° 42' N. lat., than at New Orleans, 30° 12' N. lat. The difference is observed between the climate of the low and high lands of Louisiana. In the low lands it seldom snows, and frost is not frequent, but in the winter of 1814 the ponds and lagoons near New Orleans were frozen so as to allow the horse to walk upon them. According to Darby, does not exceed 63°, or about 13° above that of London, which is 21 degrees nearer the pole. On the higher grounds, especially on the open prairies of Opelousas, the climate is much more severe. In 30° N. lat. the snow falls to a depth of 11 inches and remains for several days on the ground. It seems that frost occurs there every winter, and even sometimes in April and September, so that at Natchitoches it does great injury to the cotton and tender plants. In July there are very heavy rains in Arkansas, Louisiana, and Mississippi; the canes blow from the south, which cause great damage by forcing the water of the Mississippi into the adjacent level country. In winter the north-western gales, which are very cold, produce great and sudden changes in the temperature of the soil.

Productions.—The species of grain chiefly cultivated for food are rice and Indian corn. The rice forms an article of export. Wheat, rye, barley, and oats are more cultivated towards the north than in the southern districts, but nowhere to any great extent. Sugar succeeds very well south of 31°; farther north it becomes less advantageous and more expensive, as the plants are destroyed by the cold, and must annually be replaced. Cotton, which is the staple article, succeeds everywhere, and is extensively cultivated, with the exception of the sweet potato. The orange-tree and the purple fig do not succeed farther than 30° N. lat. The pomegranate-tree, the peach, and vine, succeed wherever they are cultivated, but the apples only in the northern districts.
ast of oak, sweet-gum, poplar, tulip-tree, and hickory, of various species; the same trees occur on the broken country east of the Mississippi; the chincapec grows on the borders of the inundated lands.

In the northern states are raised on the natural meadows of Opelousas and Atakapas, as likewise horses and mules. The bison or buffalo is at present only met with towards the northern and western border, especially between the Sabine and Red River, where wild horses are found. Deer is only plentiful in the prairies of Opelousas and the Atakapas. Bears are present, the American panther, and beavers are rare, but wolves are numerous. Locust infest the prairies, and numerous serpents the woods and lowlands. The alligator occurs in all the rivers, but is most numerous in the lakes and lakes of stagnant water: it is not dangerous, except when attacked or wounded. The Mississippi and its branches abound in fish. The forests swarm with birds, among which are the wild turkey, the parobet, the pelican, the flamingo, and the humming-bird. Swans, geese, and ducks are numerous on the lakes and stagnant waters along Red River.

Clay occurs in the alluvial soil of the delta, at a depth of from ten to thirty feet along the Mississippi. There are salt springs in the northern districts, on the high grounds from the Mississippi to Sabine river, and several of them are turned to advantage. Coal exists in the same places, and iron-ore is found in the north-western corner, between the Sabine and Red River.

The inhabitants of European and African origin amounted in 1830 to 153,407 individuals, of whom 73,387 were whites, 10,476 free coloured persons, and 60,646 slaves. A considerable part of the population are the descendants of French settlers; and some newspapers were a few years ago published in Spanish as well as in French and English languages. According to the census of 1830 the number of free people was 106,130, and that of the slaves 109,639. The great increase of the slave population is to be ascribed to the increased cultivation of cotton and sugar plantations.

The native tribes are not comprehended in this census; but their number probably does not exceed a thousand individuals. On the prairies are the Attakapas and Opelousas, but these tribes are far from being numerous; they have no fixed habitations, and live mostly from the produce of the chase. The Chickasaws, on the Washita and Red River, are more numerous. They have adopted agriculture, and their villages are not much inferior to those of the other inhabitants; they chiefly cultivate Indian corn and the potato. The Tejas, between Deaf and Texas river, towards the northern boundary of Louisiana, are few in number.

Political Geography.—For political and civil purposes Louisiana is divided into thirty-one parishes. The present capital is New Orleans, the former capital, the city of Baton Rouge, situated at the mouth of the Teche, became the capital of the Mississippi, East Parishes, and the state of Louisiana, in 1812. New Orleans is the largest town in Louisiana, situated at the mouth of the Mississippi, it has much increased since the seat of government was removed to it. The largest town of Louisiana, and one of the most commercial towns of the United States, is New Orleans. It stands on the Mississippi, miles above its mouth. All the other places are inconsiderable.

Baton Rouge, on the Mississippi, contains only 1200 inhabitants; and Alexandria, on the Red River, 1400. Lake Charles, on the lake of the same name, has not 2000 inhabitants: it is at the head of the steam-boat navigation on Red River, and the centre of the trade to Mexico.

The United States granted to Louisiana 40,000 acres of land for the maintenance of a college and 10,000 acres for the support of schools; the State annually appropriate 40,000 dollars for the support of parish schools. The college of Louisiana, which has an annual allowance of 7000 dollars from the state, is at Jackson; and a college has been established at Opelousas.

Commerce.—Besides the valuable produce of its own soil, the productions of all the states and settlements within the extensive basin of the Mississippi river which are destined for a foreign market must pass through this state, because the streams are not navigable above the mouth of the Teche with the exception of that which runs along the Mississippi on the Levee. Boats from 10 to 60 tons are conveyed from New Orleans by the Piqueree into the Atchafalaya. Those destined for the lower part of Atchafalaya, which is its natural destination by the Teche. Those bound to the central parts of Atakapas descend the Atchafalaya about 20 miles, and are thence transported by an outlet and Lake Chitimacha to the Pecos Point landing. Here is a portage of 10 or 12 miles to S. Martinville and westward to the Teche. S. Martinville or Upper Atakapas. Vessels for the higher central parts of Opelousas ascend the Atchafalaya to the mouth of the Courtablanc and thence by the latter stream to St. Landry's landing, six miles, or by Bayou Caron, four miles from the village of St. Landry. (Daily.) The settlements on the Lower Teche communicate with Donaldsville and New Orleans by the lakes of Palourde and Verret, and by the inlets which connect with the Atchafalaya and La Fourche branches of the Mississippi.

History.—The Mississippi river was discovered by land. The Spaniards navigated the Gulf of Mexico for centuries without being aware that one of the largest rivers of the globe falls into it. This fact may be explained from the circumstance that a low, flat, and dangerous coast extends on both sides of its mouth to a great distance. The French, after their establishment in Canada, got some information as to this river about 1660, but did not find its mouth before 1699, when M. de l'Iberville founded the first settlement. On the 24th of Nov. 1698, the founder of New Orleans was established, by which time the colony began to be of some importance. The French remained in possession of Louisiana up to 1762, when they ceded it to Spain. The colony was much neglected by the Spaniards, and improved very slowly. Understanding its numerous natural advantages, the Spanish government re-ceded Louisiana to France, but the French government fearing that Louisiana would be taken from them, during the war that followed the peace of Amiens, by the superior naval force of England, sold it to the United States in 1803. At the time of sale the inhabitants were chiefly French and descendants of French, with a few Spanish creoles. Americans, English, and Germans; the whole population is not exceeding 50,000 inhabitants, of whom about 40,000 are slaves.

Louisiana comprehended all the country included in the present state of Louisiana, with the exception of that tract which extends on the northern shores of the river Amite, and the lakes of Maurepas and Pontchartrain, and in addition the islands and barrier of the lake of the Mississippi river and the Rocky Mountains. The country was then divided into several territories, of which Louisiana rose to a state. In 1811 its population had increased to 350,000, and it was numbered by the federal constitution, and Louisiana was formed into a state in 1812. The constitution is vested in a house of representatives and a senate. The members of both houses are elected by all free white citizens who have attained the age of twenty-one years. The senate consists of seventeen members, elected for four years; the number of representatives is at present fifty, who are elected for two years. The executive power is vested in a governor. Louisiana sends two senators and three representatives to Congress.

At the time of the union of Louisiana with the United States, the system of laws of Spain remained in force, as the Roman law to some extent, were in force. Some changes were immediately introduced for the purpose of bringing the condition of its inhabitants nearer to that of the other United States. Accordingly juries and the habeas corpus were introduced; but the civil law was retained in force. Their defects were however so evident that the legislature formed a new civil code, which was published in 1814. At the same time Mr. Edward Livingston was entrusted with the preparation of a new penal code, of which the first part was published in 1824, and the code was promulgated in 1833.

LOUISVILLE. [KENTUCKY.]

LOULE, a town of Algiers, in a broad and fertile valley, 8 miles north of Paris, which is on the coast. [Atchafalaya.] It has numerous houses and numerous churches and monasteries, one of which is for poor ladies good families, in which they manufacture very neat baskets with the fibres of the aloe (Alcama americana), picturesque
and dyed for the purpose, and which are sent all over Portugal, as well as artificial flowers and other similar articles. The soil of Loué is good and well-tended, and it produces corn, wine, oil, and fruits. A number of fine cereals grow in the neighbourhoud. Loué has the title of a Marquise, which is borne by the representative of a Protestant family, allied to a marriage to the present royal family. (Mifano. Link.)

LORDS. [PRENSES SUPERIERS.]

LUSSE. [PERSECUS.]

LOUTH, a maritime county of the province of Leinster in Ireland; bounded on the north by the county of Armagh, and Bay of Carlingford, which separates it from the county of Down; on the east by the Irish Channel; on the south and south-west by the county of Meath; and on the west by the county of Louth, and the town, which stands on the extreme west of the plain, at the head of a creek formed by the estuary of the Castle-town river. The surrounding country is in a high state of cultivation: the level lands towards the sea, in particular, are laid out with great regularity and on an even level.

Beyond the Castle-town river, which runs out of the county of Armagh in a direction from north of west to south of east, the surface is of quite a different character. A group of mountains, ranging from 1400 to 1500 feet in height, and extending for fifteen miles length, and five miles breadth, stretches across the Armagh, and extends eastward into a great peninsula forming the northern boundary of the Bay of Dunderalk and the southern limit of the Lough of Carlingford and basin of the estuary of the Castle-town river.

The general direction of these mountains is from north-west to south-east; the group is divided into two nearly equal portions by a ravine traversing it from north to south, and forming a direct line of communication between Dunderalk and Newry. Through this defile the main road is carried at a considerable height above the bed of a mountain-stream, which has been taken advantage of in the formation of a pretty sheet of water in the demesne of Ravensdale, a romantic seat of the late Sir Harry Gollerick. The steep declivity of the mountain, above the level of the glen in which the mountain stream is, clothed with wood to a height of several hundred feet; and this hanging screen of foliage is prolonged on the south by a succession of similar plantations extending as far as the bay of Dunderalk.

The cliffs or mountains lying to the west of this ravine are situated chiefly in the county of Armagh, and consist of the Sieve Gullion and Tollyhough groups, and lie immediately outside the northern boundary of Louth, and are distinguished by the extreme ruggedness of their outline, a feature more or less characteristic of all the heights of the range. The Kilcarney river, descending from the southern declivities, joins the Castle-town river a short distance above the bridge of Dunderalk.

The glens and vales which lie along this border of the mountain-region possess much picturesque beauty. On the eastern side of the pass of Ravensdale the chief heights are Clermont, 1400 feet; Carlingford, 1600 feet; and Tollyhough, 1000 feet. The chief heights here are Corneake, 1600 feet, and Carlingford mountain, immediately above the town of Carlingford, 1932 feet. Towards the extremity of the peninsula and along that side boundary of the Bay of Dunderalk the mountains leave no shelter from the inroads of the sea and the sea. This open tract is several miles in width at the extremity of the peninsula, where it terminates in the low point of Balligan, forming the southern boundary of the bay of Carlingford. A considerable number of streams and Little Rivers, penetrates the mountain-region on this side, running up between the heights of Bannavathe, 1142 feet, on the east, and Sieve Nangloch, 1024 feet, on the west. On the north the plain
contracted to a narrow strip along the shore of Carlingford Loch and valley of the Newry river by the mountain-group above mentioned. The town of Carlingford, a place of considerable antiquity and historical interest, stands on one extremity of this tract, and the castle of Narrow-water at the other. The latter however, being built on the opposite side of the river of Newry, is in the county of Down. The harbor of Carlingford is described under the article Down. The only other harbour, with the exception of a shallow creek at Anagassan, and a small fishing-pier at Clogher-head, is that of Dundalk. Clogher-head is the only bold feature of the coast between Dundalk and the mouth of Boyne. A broad sand beach occurs in some places extending at low-water to a distance of two miles, skirts this part of the coast at every point. The danger of these great sandy shoals is however much diminished by the prevalent direction of the wind, which for nine months of the year is off towards the west. Geology.—The level portion of the county south of the river of Dundalk belongs generally to the extensive clay-slate formation, which follows the northern margin of the limestone plain from the Irish channel to the verge of the Upper Shannon on the west. One considerable patch of carboniferous limestone, skirted with a narrow belt of yellow sandstone and conglomerate, is included within the county boundary to the west of Ardee, and minor deposits occur often to the north and south of the county. Other extensive deposits occur through the west and north-west of the southern division; but the greatest extent of this formation within the county is in the district north of Dundalk, where the level space between the declivities of the mountains and the shores of the lakes and bays is much increased. In this portion the limestone westward on both sides of the Castletown river to its junction with the Killycurry, is occupied by a limestone formation, which, as it is surrounded on the landward side by transition and primitive rocks, may probably be in connection with that part of the Carboniferous limestone that is known to be overlaid by the waters of the Irish Channel farther south. The structure of the mountainous region is similar to that of the group of Mourne, consisting of a nucleus of granite supporting the clay-slate and limestone of the surrounding hills on its flanks; the clay-slate near the line of contact being altered, and passing into greenstone slate. A great protraction of crystalline greenstone trap occurs at the eastern extremity of the range, constituting the central mass of the mountains between the Boyne and Carlingford. On the northern declivities of these hills the clay-slate re-appears, skirted the southern shore of the bay of Carlingford. Iron and lead ore are the only minerals which have been observed, but nowhere in sufficient quantity to form a mining corporation.

Solf, &c.—The soil of the southern division of the county, although not so rich as that of the limestone plain of Meath, is well calculated for every kind of grain-crop. Wheat is grown in large quantities in the district round Ardee; oats and barley are cultivated on the hills, on its flanks; the clay-slate near the line of contact being altered, and passing into greenstone slate. A great protraction of crystalline greenstone trap occurs at the eastern extremity of the range, constituting the central mass of the mountains between the Boyne and Carlingford. On the northern declivities of these hills the clay-slate re-appears, skirted the southern shore of the bay of Carlingford. Iron and lead ore are the only minerals which have been observed, but nowhere in sufficient quantity to form a mining corporation.

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Bruce's invasion of Ireland in 1315, Dunblane was among the first places that fell into his hands, and here in the succeeding year he caused himself to be crowned king of Ireland. Bruce, after ravaging the south of Ireland with various fortune, returned to the neighbourhood of Dunblane in the latter end of the year 1318. Here he was encountered at the Pughart, a height on the northern side of the Castletown river, by Lord John Beverningham. In this battle Bruce was slain, and his predatory army entirely dispersed. Beverningham for his services was created earl of Louth, and had the manor of Ardee bestowed on him. During the rebellion of Shane O'Neill, in the reign of Elizabeth, Dunblane was besieged by the insurgents, but without success. On the breaking out of the rebellion of 1641, Sir Phelim O'Neill took it without opposition, the garrison having surrendered on the first summons. On the 20th of March, 1642, Lord Moor and Sir Henry Tichborne, after having driven the Irish from before Drogheda, and taken Ardee, advanced against Dunblane, and with some resistance they carried by storm, having broken open the main gate with pickaxes. After the capture of Drogheda by Cromwell in 1649, Dunblane surrendered to the parliamentarians. In the war of the Revolution it was evacuated by James II. on the advance of the army of King William, who took possession of it before he proceeded to the Boyne.

The main street of Dunblane is built along the line of the great northern road, and runs nearly north and south: the other roads run out from the centre of the main street, and parallel to one another, occupying the extreme verge of the plain along the southern bank of the creek, where the Castletown river expands into the sea. At the northern extremity of the main street is the bridge, and south from it the little hall and church. The market-house, a decent brick building, and the county-court house, a very handsome edifice of cut stone, are situated nearly in the middle of the main street. The county infirmary, a brick building in the Tudor style, is in the centre of the town. The domestic residence of Dunblane-house, the residence of the earl of Roden, skirts the western side of the main street through its entire length. An extensive cavalry barrack terminates the town eastward. The general appearance of Dunblane is highly respectable. The provisions of the lighting and watering act were put in force here in 1832. The amount of the assessment for lighting, paving, and watching for the year 1836 was 696s. 5s. 11d.

The corn-trade is very extensively carried on. In the town are a stone-power mill for grinding wheat, a large distillery, and two breweries. Dunblane is the chief point of export for the counties of Cavan, Monaghan, and Fermangh. The exports of agricultural produce in 1835 consisted of

<table>
<thead>
<tr>
<th>Crop</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>142,097</td>
</tr>
<tr>
<td>Wheat, meal, and flour</td>
<td>16,280</td>
</tr>
<tr>
<td>Barley</td>
<td>56,280</td>
</tr>
<tr>
<td>Malt</td>
<td>53,876</td>
</tr>
<tr>
<td>Oats</td>
<td>25,192</td>
</tr>
<tr>
<td>Oatmeal</td>
<td>129,260</td>
</tr>
</tbody>
</table>

There is also a large export of butter and eggs, collected principally from the counties of Monaghan, Cavan, and the northern parts of Longford. The butter and eggs exported is about 266 tons for the season: the number of eggs exported in 1835 was 2,410,860; of yards of linen 60,000; of lbs. of wool 15,680; of heads of cows and oxen 3932; of horses 100; of sheep 7266; and of beeves 48,163. Total value of the exports amounted to 107,653l., of which the chief items were for coal, culm, and cinders 19,021l.; cotton manufactures 13,804l.; woollen manufactures 10,504l.; haberdashery 660l.; iron 896l. 6d.; fish (herring) 700l.; oak- bark for tanners 4,600l.; sugar 216l.; and teas 1400l. Two steam-vessels, each of 200 tons register, the property of a Dunblane company, ply regularly between the port and Liverpool. Since the establishment of these, there has been a considerable increase in the amount of imports. The port, although as much depth of water, is considered a safe one. A freight will be taken for it in an English port at a less charge than for either of the ports of Newry or Drogheda. There are no harbour dues.

Dundalk is the head of an excise district, embracing Newry and Warrenpoint in the county of Down, and Ardee in Louth, and the entire county of Monaghan. The amount of excise paid in the district in 1833 was 112,189l. 18s. 7d. The customs paid for the port of Dundalk, in the same year, amounted to 3596s. 5s. 7d. A branch of the bank of Ireland is established here.

Ardee is an ancient corporation, at present governed by charter of the 23rd of February, 1712. The corporation consists of a portcove, burgesses, and freemen. The governing body is the common-council. There is no criminal jurisdiction in the port, except by the peace of the county, which is under the care of the peace ex officio within the borough. The civil court of the recorder is now disused. It is asserted by the inhabitants that corporate estates to the value of 1000l. per annum have been spoiled. The present income of the corporation is 12s. 4d. (Annu.)

Dunleer is incorporated by charter of the 3rd of August, 1678. The corporation is virtually extinct. The town itself is inconceivable.

Carlingford is an ancient corporation, having been, during the existence of the English pale, a place of considerable importance, as commanding the only pass that time practicable between Dundalk and Newry. The governing charter is dated 19th of August, 1619. The corporation is usually extinct.

Prior to the Union, Louth returned two county members and two for each of the above boroughs. The representation is now limited to two county members, and one for Dunblane. The county constituency, at the end of 1836, consisted of 1194 voters. On the 1st of January, 1836, the police force of the county consisted of 4 chief constables, 22 constables, 107 subconstables, and 5 horses of the constabulary, supported at a cost of 512l. 13s. 6d., of which 246l. 16s. 8d. was chargeable against the county; and of the superintendence, 21 constables, 27 subconstables, and 2 horses of the peace-preservation police, the cost of supporting which establishment was 440l. 16s. 5d. In the same year the total number of persons charged with criminal offences who were committed to the county gaol was 321, of whom 296 were males and 25 females. Of these 91 males and 4 females could read and write at the time of their committal, 137 males and 20 females could read only, and 60 males and 9 females could neither read nor write. The assessors for the county are held at Dunblane, and general quarter sessions at Dunblane, Drogheda (a county in itself), and Ardee, in which last place is a court-house and bridewell. The district lunatic asylum is at Dublin. This asylum was originally built in the year 1815, by parliamentary grant, for admission of all pauper lunatics throughout Ireland. It was created a district asylum by act of 11 Geo. IV., c. 22, and is now annexed to the district formed by the counties of Wicklow, Dublin, Meath, Louth, and the counties of the city of Dublin and of the town of Drogheda. The county lunatic asylum is a vestry establishment and cost.

Population.

<table>
<thead>
<tr>
<th>Year</th>
<th>Date</th>
<th>Householders</th>
<th>Families</th>
<th>Families chiefly employed in agriculture</th>
<th>Families chiefly employed in trade, manufactures, &amp; handicrafts</th>
<th>Families not included in preceding classes</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1792</td>
<td>Estimated by Dr. Beaufort</td>
<td>11,545</td>
<td>11,545</td>
<td>11,545</td>
<td>11,545</td>
<td>11,545</td>
<td>11,545</td>
</tr>
<tr>
<td>1821</td>
<td>Under Act 55 Geo. III., c. 120</td>
<td>18,138</td>
<td>19,691</td>
<td>19,691</td>
<td>19,691</td>
<td>19,691</td>
<td>19,691</td>
</tr>
<tr>
<td>1831</td>
<td>Under Act 1 Will. IV., c. 19</td>
<td>18,834</td>
<td>19,611</td>
<td>19,611</td>
<td>19,611</td>
<td>19,611</td>
<td>19,611</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Total Males</th>
<th>Total Females</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1821</td>
<td>49,063</td>
<td>57,638</td>
<td>106,691</td>
</tr>
<tr>
<td>1831</td>
<td>52,439</td>
<td>55,042</td>
<td>107,481</td>
</tr>
</tbody>
</table>
LOUTH

Louth, at the coming of the English, formed a portion of the territory of Orgil or Oriel, by which name it afterwards came to be known in contradistinction to the more western parts of the territory. The native families of chief authority in the territory at this time were the O’Kovrales, or O’Carrols, and the MacMahons. Donnelagh’s O’Kervall, prince of Orgil, was the founder of several religious houses in the present county of Louth, about the middle of the twelfth century. Among these was the church of Mullafort, the consecration of which, in A.D. 1157, was attended by a great assemblage of the Irish nobility. Among those who bestowed gifts on the new establishment on that occasion was Desorgilla, wife of O’Rourke, whose eloquence with nearly the centenary of the town was extend ed to the English invaders. The eastern part of Orgil, constituting the present Louth, having been conquered by De Courcy between 1179 and 1180, was erected into a county by King John, A.D. 1210. Being at the time accounted a portion of Ulster, it formed part of the grant to De Courcy, and after time to De Lacy, by whom it was divided among inferior barons. The families of De Verdon, Pippard, Taaffe, Bel and Geron were among those introduced at this period. During the decay of the English authority, in the fourteenth century, it became a natural province of the government. The preservation of the county from the general spirit of defection then abroad was owing, in a great measure, to the institution, by act of the 12th Edw. IV., of the chapel royal, and an endowment, which preserved it from falling into the hands of the enemy and grant to the government.

Louth, which was not considered a portion of Leinster until the reign of Elizabeth, is in great measure that of Drogheda and Dundalk. (Drogheda.) The forfeitures consequent on the rebellion of 1641 and the ensuing civil war extended over nearly the entire county. The war of the Revolution of 1688 embraced 22,508 acres, of an estimated value, at that time, of 82,310/., 3s.

The numerous antiquities which occur throughout Louth have been made the subject of a volume entitled ‘Louthiana,’ published in 1748. But perhaps the most marked are the tumulus and rampart tracts. Many of the tumuli are of very frequent occurrence. The most remarkable are that of Castle-Guard at Ardee. Its perpendicular height is nearly 90 feet, the depth of the main trench between 30 and 40 feet, the circumference at the top 400 feet. On the base upon which it stands, a mound and building called Faugh na Eige, or ‘ the one night’s work,’ near Dundalk, is a curious combination of the earthen raths with the stone cromlech, and is probably coeval with the Dunges of the Irish hero romances. Stone cromlech remains are also numerous in Louth and Drogheda, and two are still remaining at Drogha and Monasterboyece. The last is one of the finest specimens in the kingdom: it is 110 feet high, but has lost the greater part of its conical covering. In the churchyard near the tower stand two beautifully sculptured stone crosses. The larger, called St. Boyne’s Cross, is 18 feet high. On the base of the smaller, which is 16 feet in height, is an inscription, on which ‘Pray for Muredagh’ is legible in very ancient Irish characters. The arms of these crosses are on the sides, and the surface of the annals is covered with rich tracery and allegorical sculpture. St. Boyne is probably a corruption of the name of St. Baas, the donor, who died A.D. 521. Muredagh, by whom the other cross was probably erected, died A.D. 520. The ruins of the abbey of Mellfont occur on a beautiful site on the Mattack river, near the Boyne. They consist of a gate-tower, part of a chapel, and the lower story of an octagonal chapter house. The ornamental part of the doorways and arches are formed of a rough building stone and marl, and have been highly gilt. There are some very ancient ruins on the hill of Faughart, where Edward Bruce is said to have been buried, connected with the old cell of St. Bruigl. Of the various feudal buildings throughout the county, chief are the castle of Carlingford, erected by King John, Rohan’s Castle, north-west of Dundalk, Torrach or Terronfeckin Castle, a residence of the archbishops of Armagh, inhabited last by Primate Usher, and Castletown, still kept in habitable order, on the south bank of the Castletown river near Dundalk.

Louth lay partly in the diocese of Clonmin, but chiefly that of Armagh, which extends into the counties of Armagh, Londonderry, Tyrone, Louth, and Meath. The number of parishes in this diocese is 98, constituting 88 benefices, and having 88 churches of the Establishment. The expenses of the Diocesan Board are met by 68 Presbyterian meeting-houses, 44 meeting-houses belonging to other Protestant Dissenters, and 120 Roman Catholic chapels. In 1834 the total population of the diocese was 295,626, of whom there were 166,512 modern Protestants, 33,710 adherents of other Protestant Dissenters, and 309,477 Roman Catholics, being in the proportion of 3 Roman Catholics to 1 Protestant, of whatever denomination. In the same year there were in this diocese 623 daily schools, in which 9,964 young persons received instruction; being in the proportion of 8·1 per cent. of the entire population under daily tuition, in which respect Armagh stands fourteenth among the 32 dioceses of Ireland. Of the above schools, in 1834, there were sixty-seven in connection with the National Board.

The county expenses are defrayed by grand jury presentations. The amount levied for the year 1835 was 11,247 l. 2s. 8d., of which 27,495 l. 14s. 6d. was for roads and churches, 12,396 l. 9s. for buildings, salaries, charities, &c., and 3898 l. 13s. 6d. for police.

(Wright’s Louthiana; Report of the Railw. Commissioners for Ireland; Cox’s History of Ireland; Parliamentary Reports and Papers, &c.)

LOUGHBURGH, PHILIP JAMES DE., a distinguished landscape painter, born at Stranburg, October 27, 1740, was the son of a miniature painter who died in 1768. He at first studied under Tischbein, afterwards under Casanova under whom he gained the character of a painter, and was then in great vogue. While his peculiar forte lay landscape, he was enabled by his education to give to this branch of the art a greater compass and range of subject than usual, as in his various battle and hunting pieces, and generally differs from his contemporaries in subject; for instance, his ‘Storming of Valencia.’

‘Lor’s Victory in June, 1794.’ His works are stately by great vigour and mastery of pencil, and by excellent management in regard to composition. After having exhibited much at Rome in 1773, and to the extent of 600 feet, a painting of which he exhibited at the Louvre, and having been admitted member of the Academy there in 1788, Loughburgh came over to England (where he was afterwards elected a royal academian in 1771, and was engaged by the Duke of Cumberland. Hisvigorous style of execution, his poetical imagination, and his perfect knowledge of scenic effect, well qualified him for a department of art which demands them all, and which is held to be a subordinate order of art, and is not found much in the hands of artists of the present day. Thus his ‘Storming of Valencia’ is a small and unimportant picture, and entirely forgotten. Soon after his settling in this country, Loughburgh got up, under the name of the ‘Eifflephante’ a novel and highly ingenious exhibition, displaying the changes of the elements and their phenomena, in a calm moonlight, and a sunset and storm at sea. Of this there is an interesting pictorial contrivance, which may be said only to have anticipated, but in some respects to have surpassed our present dioramas, although upon a smaller scale, a tolerably full account is given in Pyne’s ‘Voyages’ and in a more complete form in Dr. Dibdin’s ‘Lake.’

Loughburgh etched several of his own compositions. He died at his residence at Hammersmith-terrace, March 11, 1812.

LOUVAIN (the French name of Louvain), a very ancient town of South Brabant, in 50° 54’ N. lat. and 4° 39’ E. long. It stands on the Dyle, 6 miles east from Brussels, and at the same distance south-east from Mechlin, or Malines, at the north-west from Tirlemont. The system of railroads from Ostend, Bruges, Ghant, Antwerp, and Brussels to Malines, is continued thus to Louvain and Tirlemont. Liege, and will be further continued through Aix-la-Chapelle to Cologne, and eventually to Bonn, where its further progress will be impeded by natural difficulties. Louvain was taken by order of the dukes of Brabant. In those times Louvain was the largest, the richest, and the most commercial city
the country. Its principal trade consisted in woollen manufacture, which are said to have been prosecuted to such an extent at the beginning of the fourteenth century as to give employment to 150,000 workmen; but this number appears to be exaggerated. The weavers, in 1382, revolted against the duke of Brabant, and for a time desolated the province, but were, however, in the end, put down. The great part of them came to England, where they introduced the manufacture of broad-cloth. The walls of Louvain are nearly seven miles in circumference; but a great part of the space enclosed is no longer occupied by buildings, which have been succeeded by gardens and vineyards. The population is now about 27,000, or only one-sixth of what it was 500 years ago.

The manufacture of woollens and lace is now carried on in Louvain, as a small extent. There are several breweries in the town, and the townsmen are distinguished for their skill in glass and crystal manufacture, and have a great sale in other parts of Belgium. There is also a trade in some extent in agricultural produce.

The university of Louvain was established in 1428 by John, the fourth duke of Brabant, and long enjoyed a high repute. In the sixteenth century the townsmen embraced the party of the League, and afforded an asylum to the parliament of Rouen, when driven out of the city by the Protestants; but they submitted to Henri IV. after the battle of Ivry. The town is handsomely built, and situated in a fertile plain: it has a circumference of 50 miles, and its inhabitants number about 25,000. The naves round the site of the ramparts. The population in 1831 was 8627 town, or 9885 for the whole commune; in 1836 it was 9927 for the commune. The chief manufacture of the town is the weaving of woollen cloths and kerseymeres, first introduced in 1681, and now the most important in the country in France: there are upwards of forty factories. Other woollen goods are also made. There are mills for spinning woolen, linen, and cotton yarn, moved by water; there are also dye-houses for cotton and wool, linen-bleaching establishments, and works for tanning and finishing leather. There are several workshops for making the machinery employed in the various factories and mills. There are a subordinate court of justice, several government offices, a public library, and a theatre. There are four yearly fairs, of which three are for staves and wool, and the other for collier. The weekly market is chiefly bought from Spain. The arrangements of Louviers contain 302 square miles, and is divided into five cantons and 118 communes. It had a population of 68,942 in 1831; and 68,402 in 1836.

LOUVRE. [Paris.]

LOVE-APPLE, a fruit-bearing annual, also called Tomato, is the Solanum Lycopersicon of botanists, a plant much cultivated for the sake of its berries, from which are derived the common vegetable in speaking of it. It is a native of Peru and Brazil, whence it has been carried into North America and the Old World; and it has become, as it were, naturalized in some parts of India. The common love-apple has depressed round lobed irregular berries, varying in size, color from dull red to yellow. When raw they have a singular flavor, not unlike that of cooked meat, but they are never brought to table except stewed or in the form of sauce. The only directions for the cultivation of the Tomato which it is necessary to give are as follows: sow the seeds in a flower pot or small box, plant out when partly developed, and when planted out have a southern bank or wall, or some trellis, over which the branches may be disposed. In this climate the summers are too short to ripen the fruit unless assisted by reflected heat. Many varieties of the Tomato are grown, but they principally differ in the form, colour, and size of their fruit. They all are in accordance with the usual character of the genus Solanum, in having a fruit with an irregular

number and arrangement of its cells, on which account they have been collected by Dunal into a particular genus, to which he gives the name of Lycopectens, distinguishing eleven species, and calling the common garden love-apple L. esculentum.

LOW COUNTRIES, or NETHERLANDS, a district lying to the north of Europe, lying between 50° 40' and 55° 40' N. lat., and between 2° 40' and 7° 10' E. long., comprising the kingdoms of Holland and Belgium, and grand-duchy of Luxemburg. It is bounded on the east by the Rhenish provinces of Prussia and the kingdom of Hanover, on the north and west by the North Sea, and on the south by the kingdom of France.

LOWER GREEN-SAND. [Creataceous Group.]

LOWTH, WILLIAM, born 1661, died 1732, the elder of two divines of the Church of England, father and son, both distinguished by eminence in their respective professions, and by their useful publications. The elder is the less eminent, though he is supposed to have been the profounder scholar; but he lived less in the public eye, and attained to none of the dignities which were bestowed on the son.

Early in life he was made an almoner to the Duke of Bedford, and a preacher at St. John's College, Oxford. If we should form an idea of the extent of his labors as a reader, we must look rather to the works of other persons of his own, and particularly to Potter's edition of the New Testament, and Clarke's edition of the works of Josephus. To both these editors he contributed valuable notes. Of his own writings, those which are now most read are his 'Directions for the Profitable Reading the Holy Scriptures,' which was first published in 1726, and has been often reprinted, and his 'Commentary on the four greater Prophets.' This last-named work usually accompanies Bishop Patrick's Commentary on the other books of Scripture, to which it was prepared as a supplement.

LOWTH, ROBERT, born 1710, died 1767, a prelate of the English Church, son of the Lowth last named, and, like his father, distinguished by his knowledge of the books of Scripture and his valuable writings in the illustration of them. He was also an elegant scholar, and an inquirer into minute and curious learning. The principal subject of his criticism, his chiefly in the nature of academical exercises, which in their day were greatly admired.

He was educated in the school of Winchester founded by William of Wickham, from whence he passed to New College, Oxford, with a small fortune bequeathed to him by his father. He was an intelligent student of the literary language of the Bible, and, chief of all, of the Greek. He was, in more ways than one, a promoter of the study of the original language of the Bible. He first made himself familiar with the Greek. In 1741 he was elected professor of Hebrew, and in 1752 was made bishop of Chester. In 1762 he was made archbishop of Canterbury. The last-named office was declined, and he settled in the rectory of East-Woodhay in that diocese; in 1766 he became bishop of St. David's; in the same year he was translated to Oxford; and in 1777 was made bishop of London.
strict and proper sense of the word, though presented to the
English reader in a mere prose version, and as if there was
no difference between them and the parts of those Scrip-
tures which we do not, and prose. They were received, when
published, with great respect by the learned, not of England
only, but of the Continent, where they were reprinted, with
a large body of valuable notes by the learned biblical scholar
J. D. Michaelis. These lectures in their English translation
were published posthumously by Lord Bute, under the title
in which they were delivered, but there is an English trans-
atation of them by Dr. Gregory, published in 1757. In
1778, the year after he was promoted to the bishopric of
London, he published a 'Translation of the Prophet Isaiah,' distinguishing in the poetical form of the parts and phrasing and exhibiting the various forms of
Hebrew parallelisms which occur in that prophet, and
which he had explained and illustrated in his lectures. He
gave a large body of valuable notes. These were his
greater works; 'Introduction to the English Grammar,'
which was thought valuable at the
and was often reprinted, but is now nearly superseded
and forgotten.

A volume containing memoirs of his life and writings was
published after his death;
LOXIA, or LOJA, a town of Spain, in the province of
Granada, 30 miles west of Granada and 40 north-east of
Malaga, at the north base of a ridge of hills and in a valley
watered by the river Genil. It has manufactures of pri-
cord, lace, and porcelain; parishian, a medical college, two
hospitals, and 13,000 inhabitants. The territory is fertile
and well watered, and produces corn, maize, pulse, oil, and
abounds in oak-trees. (Mentioned.)

LOXIA'DE, Mr. Vigors's name for a family of birds
placing the extreme of the tribe of Comorostae,
which is the third tribe of his Insectores, or perching birds,
and interchanges between the Dentirostae and Scansorial
tribes in his system.

Mr. Vigors remarks, that notwithstanding their inferiority
of some of the members of the family may be observed to equal
even the Horbilli, allowance being made for their
relative proportions, in the extreme largeness of the bill.
'The curved and serrated bill of the latter family' (Hor-
billi), says Mr. Vigors, 'by perceiving itself the most
powerful in a Momentus, is still carried to a
coresponding in the present, the Phytotona, Gmelin,
where these characters are preserved, though the curve
is slighter and the serration less strong. United to this genus by some intermediate but uncharacterised species, the
Cocothraustes, Brist., conducts us to several groups, among
which Ptilopsis, Cuv., Strobilopaga, Vieill., the true Loxia
of authors, and Ptilostloom, Temm., may be distinguished;
from whence we pass to the shorter-billed groups, among
which Cacatua and Cacatoo, may be particularly
noticed. These are but few of the natural genera which
abound in this extensive family. Many intervening species,
possessing strong genuine distinctions, may be introduced
among these groups, which at length terminate in some
of the shorter-billed species of the Linnean
Tangarae. This, it will be remembered, commenced the
present tribe (Comorostae) by their union with the
Fringillidae: and thus here also the circular succession of affinities
extends uninterrupted through the whole subfamily
(‘Natural Affinities that connect the Orders and Families of
Birds,’ Linn. Trans., vol. xiv.)

Mr. Swainson (Classification of Birds) appears to reject the
family altogether; for we find Phytotoma among the
Phytotoma, a subfamily of Muscophagidae; Cocothraustinae
under the subfamily Cocothraustinae; Ptilopsis under the
subfamily Tangarae; Strobilopaga under the General
names not adopted; Loxia and Ptilostround in the
subfamily Ptilostrophiidae; Colius in the subfamily Coliae
(family Muscophagidae, describing under the
Tangarae under the subfamily Tangarae; the subfami-
lies, with the exception of the two placed under the Muso-
phagidae, being arranged under the family Fringillidae.

Mr. Swainson’s Classification (this second tribe of Insectores)
consists of the families Corvinae, Starlingidae, Fringillidae,
Muscophagidae, with their subfamilies, and Buceridae.

Having given the reader a sketch of the views of the
ornithologists above quoted, we shall confine ourselves
in this article to Brisson’s genus Loxia only, of which M. Tem-
minck remarks that its characters explain all other species,
being proper to the Crossbills only. Illiger, he observes,
in his Prodromus is also of this opinion.

LOXIA. (Crosthall.)

Geographic Character.—Bill moderate, strong, very much
compressed; the two mandibles equally curved, hooked,
and the elongated points crossing each other. The
mandibles, concave by hairs directed laterally.
‘Wings moderate, the first quill longest. Tail
forked.’

Mr. Temminck, who gives the above generic character,
records two species, Loxia Pygmaea and L. curvirostra,
in his second edition (1820), and L. leucoptera, in his third
part of that edition (1835). The same three species, the first
under the name of L. pinetorum, are recorded by Mr.
Swainson.

Geographic Distribution of the Genus.—The north
both of Europe and America. One species however, L.
curvirostra, is found in Japan as well as in Europe.

Example, L. curvirostra, the common Crossbill.

Before attempting to describe the history of this bird, it will be
well to call the reader’s attention to the curious organiza-
tion of the bill in this genus. Buffon, who, as we have to
often been obliged to repeat, frequently deformed
where all was harmony and symmetrical adaptation, de-
noted this organ as a proof of the care of nature endear-
clearly understand. He speaks of the bill in these birds
as an error and defect in nature—a deformity. If he had
ever kept these birds in a cage, he would have soon found
that no instrument could have been better adapted to the
work they perform, and so he would have been convinced to its
efficiency in splitting fruits for the purpose of getting at the
kernels.

Mr. Yarrell has well illustrated the structure and moving
power of this organ, which, joined with the peculiar
tongue, will be found a most perfect and beautiful piece of
mechanism for attaining the end in view.

The beak of the Crossbill, * writes the author last men-
tioned, * is altogether unique in its form; the mandibles are
not lined and turned to each other with increasing
opposition, as in other birds, but curve to the right and left,
and always in opposite directions to each other. In some
species the upper mandible is turned to the right, the lower
mandible curved to the left; in others, the position of the
mandibles is reversed as to their direction. In the spec-
imen I examined the upper mandible curved downwards
and to the left, the under portion turned upwards and to the
right. When holding the head of this bird in my fingers.
I found I could bring the point of the bill up and touching
the point of the upper, but not beyond it towards the left side;
while on its own side the point passed with ease to the distance of 3-6ths of an
inch. The upper mandible has a limited degree of move-
ment on the surface of the skull, the superior maxillary
bone being united to the frontal by flexible bony laminas.
Mr. Yarrell then proceeds to the details of the anatomy,
which he illustrates by the seven copies figured below.
He first notices the peculiarity of the form, as well as of the
magnitude of the processes of the anterior of the head in this bird, and points out that the pterygoid processes of the palate bones are considerably elongated downwards
(fig. 3, b) to afford space for the insertion of the large ptery-
goid muscles. The os omoideum (fig. 3, b) is strongly
aroused this os quadratum, which is the terminal point
of the movable portion of the upper mandible. The
jugal bone (fig. 3, d, d) is united to the superior maxillary
bone in front, and firmly attached by its posterior extremity:
to the outer side of the os quadratum. Thus, when the os
quadratum is pulled upwards and forwards by its own

* Buffon, after noticing the deformity, remarks that it is "cette espee de
la deformite qui seule distingue est celle du crochat". etc. 'La queue est pas
plus droite, mais tout porte a croire que c'est un crochat.' etc. 'The opera-
tion is performed, and as de fine.

† Loxia curvirostra.
per muscles, the upper mandible is elevated by the forward pressure of that bone. In the lower jaw, in the interior projecting process of the os quadratum, to which the lower jaw is articulated, is somewhat linear from before backwards, and compressed at the sides, permitting vertical motion only upwards and downwards; but in the crossbill these processes are spherical (Fig. 2, a), and the lower jaw destined to receive the process is a circular cup (Fig. 5, a) from these two portions there results an articulation with all the motion and flexibility of the mechanical ball and socket joint.

The lower jaw is very strong and the sides or plates are elevated; the coronoid processes (Fig. 5, b, c) are prominent, and to these, as well as to the whole outer side of the plate, the temporal muscle is attached. In a head of this bird which had been dissected of all the soft parts, Mr. Yarrell found that, as the elongation of the jaw had extended the anterior as performed by the bird, before the coronoid process is brought into contact with the pterygoid process on its own side, the extreme points of the mandibles were separated laterally to the extent above-mentioned (3-1/2ths of an inch).

The small flat plate, arising from the lower jaw inclined in the specimen examined by Mr. Yarrell, and on that side the temporal and pyramidal muscles were considerably larger than those on the left (Figs. 1, 2, 4, a, b), inserting by their bulk the great lateral power which the bird is capable of exerting. The pterygoid muscles (Fig. 2, c, d, e) on each side were unusually large, the great distance to which the articulated extremities of the lower jaw were removed affording ample space for them, and as the food of the bird consists of small seeds, a narrow pharynx is sufficient for the purposes of deglutition. For depressing the lower mandible three muscles are called into action; but only one of these, the great pyramidal (Figs. 1, 2, 4, a), which covers two other small ones, the triangular and more muscles, is visible. All three have their origin on the occipital portion of the cranium, and are inserted by strong tendons on the under and back part of each extremity of the lower jaw, behind the centre of motion; they consequently, by their simultaneous contraction, raise the jaw, which is depressed, and depress the lateral part of the mandible. The lower parts of the oss quadrate are pushed rather forwards by this compression, with the help of two small muscles (not figured), but whose position may be explained by a reference to Fig. 3. One of these, arising from the temporal muscle from the orbit behind the small aperture in the septum, and passes downwards for insertion upon the projecting styloid process of the os quadratum; the second is a small pyramidal muscle, arising also from the septum, anterior to the other muscle; and, passing downwards and backwards, is inserted upon the os osseum: both these, when they contract, pull the quadratum forwards, and so elevate the other mandible.

Thus the depressors of the lower jaw, and the elevators of the upper jaw, act together to separate the mandibles, the temporal muscles elevate the lower jaw, assisted by the slender slips (Fig. 2, d, d), which, extending forwards to the superior maxillary bones, act in concert by bringing them down. To work the lateral motion, the great pyramidal muscle on the right, to which it is attached, backwards, the pterygoid muscles of the left side at the same time powerfully assisting by carrying that side of the lower jaw inwards.

Mr. Yarrell then quotes Mr. Townsend, to show the adaptation of the bones of the bird in feeding. 'The great pine-forests, such as the Hartz in Germany,' says Mr. Townsend, 'are the natural places of residence of the Crossbills, and the seed of the cones of these trees their food; and it is to pull out the seeds from between the scales, or scales of the cones, that this structure is given to them. Their mode of operation is thus: they first fix themselves across the cone, then bring the points of the maxillae from their crossed or lateral position, to be immediately over each other. In this released position they insinuate their beaks between the scales, and then opening them, not in the usual manner, but by drawing the inferior maxilla sideways, force open the scales or squamae. It is at this stage of the proceeding observes Mr. Yarrell, that the aid of the tongue becomes necessary; and here again we have another instance of beautiful adaptation. There is articulated to the anterior extremity of the os osseum, or bone of the tongue, an additional portion, formed partly of bone, with a horny covering (Figs. 6, 7, a). This is narrow and about 1/2ths of an inch in length, extending forwards and downwards, with the sides curved upwards, and the distal extremity shaped like a scoop somewhat pointed and thin on both edges, the proximal extremity ending in two small processes elongated upwards and backwards above the articulation with the bone of the tongue, each process having inserted upon it a slender muscle (Figs. 6, 7, b) extending backwards to the glottis and attached to the os osseum; and these muscles, by their contraction, extend and raise the scoop-like point. Underneath the articulation of this horned grooved appendix continues Mr. Yarrell, is another small muscle (c, Fig. 7), which is attached at one extremity to the os osseum, at the other to the movable piece, and by its action, as an antagonist to the upper muscles, bends the point downwards and backwards; whilst there therefore the points of the beak press the shell from the body of the cone, the tongue, brought forward by its own muscle (genio-hyoides) is enabled, by the additional muscles described, to direct and insert its cutting scoop beneath the seed, and the food thus disengaged is transferred to the mouth; it will be seen by a reference to the first figure, that when the mandibles are separated laterally in this operation, the bird has an uninterrupted view of the seed in the cavity.
with the eye on that side to which the under mandible is curvèd. So much for Buffon's 'error and defect of nature, and deformity.'

**Description of Loxia curvirostra.**—Adult and Old Male.—Principal colours of the plumage ashstrongly
tinged with greenish; front, cheeks, and eyebrows grey, with yellowish and whitish spots; back, small coverts of the wings, and scapulars, greenish; rump yellow; lower parts yellowish-green; abdomen grey, with deeper spots; wing and tail-feathers blackish, bordered with greenish-yellow; greater coverts bordered with yellowish white; iris and feet brown; bill horn-colour. Length, about 6 inches.

**Mute from its first moult to the age of one year.**—All the upper and lower parts of the body brick-red, more or less tinged with greenish-yellow, and sometimes with a small black spot in the back, black, bordered with reddish-green; lower coverts of the tail white, with a great brown spot in the centre.

**Young of the year.**—Upper parts grey-brown, clouded with greenish; rump yellowish; lower parts whitish, with longitudinal brown and black spots.

**Female.**—In all ages, differing but little from the young; the plumage is clouded with greenish and yellowish tints. Neither in this species nor in *L. Pyrrhocorax* does the female ever assume the red livery, which is only peculiar to the male. Even in its first moult strong evidences of the new plumage are apparent.

Such is M. Temminck's description in the second edition of his 'Manuel' (1820); but in the third part (1835), he states that the principal tints under which the male presents itself are more or less of a brick-red or reddish-green, and sometimes with a small black spot in the back, being being more or less tinged with greenish-yellow. The males of a year are of a tarnished red, of a yellowish-red, of a greenish-yellow, or tarnished yellow clouded with reddish. The old females have the upper part of the body deep grey, the rump and the whole lower parts yellow clouded with reddish. The young females have a red plumage; the young male a reddish plumage, reddish-yellow, or yellow; the females a yellowish-green, and the young a grey or yellowish plumage.

Mr. Gould ("Birds of Europe") observes that in the minds of ornithologists some doubt is entertained, and that they existed till lately in his own, as to whether the rich rosy-red colouring assumed by this bird is characteristic of the breeding season, or the permanent livery of the adult male. He states that during his recent visit to Vienna he had an opportunity of observing both sexes in every stage of their plumage, and the animation of which afforded him abundant proofs that the red plumage is acquired during the first autumn, for he saw many lately fledged that had their plumage thickly spotted; others had lost the red, and had partly assumed the red colouring; and others that had their feathers entirely tinted of this colour; while the adults, as most ornithologists have stated, were characterised by a plumage of olive green, which appears to be permanent.

This bird is *Loxia curvirostra* of Linnæus; *Perceva croce, Croatone et Croateri of the Italians; Bec croiz and Bec croi in the French; Forten Kreuzchnebel et Kreutzehnel and Mitterer Gebers et Kreutzehnel of the Germans; Krenwink of the Netherlands; female, Common Crossbill of the modern British, and Gyungfinge of the ancient British.

**Habits, Reproduction, &c.**—Willoughby, who notices its change of colour, says that it is a most voracious bird; much addicted to feeding very early in the morning, and also, he adds, 'loves fir-kernels. They say, that with one stroke of its bill it will in a trice divide an apple in halves, that it may feed upon the kernels, by that means doing a great deal of mischief. In the West Indies, Mr. Townson, who kept some, states that the degree of the lateral power of these birds is surprising, that they are fond of exercising it for mere amusement, and are therefore not a little mischievous. My pets,' says the last-mentioned author, "would often come to my table whilst I was writing, and carry off my pencils, little chip-boxes in which I occasionally kept insects, and other similar objects, and tear them to pieces in a minute. Their mode of operation is by b</p>
the end of that year). Many of the females killed by Mr. Selby showed plainly, from the denuded state of their breasts, that they had been engaged in incubation some time previous to their arrival; which circumstance, he observes, agrees with the account given of the early period at which they breed in higher latitudes. They continued in Britain till towards the autumn, but kept moving northward, for Mr. Selby found them in September particularly abundant in all the fructs of Scotland after they had nearly disappeared south of the Tweed. Since that time (the writer in 1825) none had come under his observation. He alludes to the great havoc they commit in the apple and pear orchards in their occasional visits to the south, by splitting the fruit in halves for the sake of the enclosed juice. Mr. Hoy, of Stoke Nayland, in Suffolk, who gives an interesting account of the habits of these birds, says that from 1821 to the middle of May, 1822, Crossbills flew from north-west to south-east, and, when belied, extended their flights into many parts of England. (London's Magazine of Nat. Hist., January, 1831.) Mr. Knapp notices their occasional visits in small parties, and the damage it does to the orchard. He says that a pair was brought to him very early in August, and the breast of the female being nearly bare of feathers, as is observed in sitting birds, he thinks it is probable that she had a nest in the neighbourhood.

There are a few instances recorded of its breeding on the borders of the Tweed.

Utility to Man.—The flesh of the Common Crossbill is well flavoured. Mr. Gould saw in the bird-market of Veurne multitudes of Crossbills exposed for sale with swal- lows, martins, and many others of the smaller birds, for the purposes of the table; of these the Crossbill appears to be especially in request from its superior size and its sweet and well-tasted flesh, to the good qualities of which Mr. Gould bears testimony. The same author notices it as seeming to be of all the small birds the least distrustful of man, and states that when flocks arrive in this country numbers are taken by a bird-line, tied to a post at the end of a fishing-rod.

Loxia curvirostra, male: upper figure, young of the year; lower, adult.

LOXODROMIC SPIRAL (gugio, oblique, gégé, course), the curve on which a ship sails when her course is always on one point of the compass. It is called in English works the Rhumb Line.

LOYOLA. [Jesuits.]

LOZERE, a department in the south of France, bounded on the north-east by the department of Haute-Loire, on the east by that of Ardèche, on the south-east and south by that of Gard, on the south-west and west by that of Aveyron, and on the north-west by that of Cantal. The form of the department is nearly oval; its greatest length is from the banks of the little river Bès, which separates this department from that of Cantal, to the neighbourhood of St. Jean de Gard [GARO], 64 miles; its greatest breadth is, from the banks of the Borne, which separates this department from that of Ar- drèche, to the junction of the Jonte and the Tarn, 57 miles. The area of the department may be estimated at 1992 square miles, being considerably under the average size of the French departments, and rather less than the English county of Norfolk. The population in 1831 was 140,347; in 1836 it was 141,733, showing an increase in five years of 1836, or less than one per cent, and giving 71 inhabitants to a square mile, less than one-half the average density of population in France, and about equal to the density of population in Westphalia, the most thinly peopled of the English counties. Mende, the capital, is in 45° 8' lat. and 3° 29' long., 302 miles in a direct line south by east of Paris, or 335 miles by the road through Montargis, Nevers, Moulins, Clermont, and St. Flour.

The department is a large one in extent of surface, and of mountainous character. The Cévennes cross it in the south-western part; Mont Lozère, one of the loftiest mountains of this range, is 4885 feet high (Malté Brunn), and gives name to the department: the Roc de Malpertuis in the immediate neighbourhood of Lozère and Aveyron stands 1476 feet high. The chain of La Margeride, which branches off from the Cévennes at Mont Lozère, and unites that mountain-range with the volcanic group of Auvergne, extends through the department in the direction of its length; and the mountains of La Combe, from the confined valley of the Cévennes, belongs to the basin of the Rhône; the rest of the department is divided by the mountains of La Margeride, between the basin of the Loire in the north and that of the Garonne in the west: the part comprehended in the basin of the Garonne is considerably larger than either of the others.

The department is chiefly occupied by the primitive rocks which constitute the mass of the Cévennes and the connected mountains. On the south-eastern slopes the Cévennes, towards the basin of the Rhône, the sandstone and other primitive rocks are covered with the strata of later formation which intervene between the chalk and the saliferous sandstone. The same strata overlie a considerable portion of the western slopes of the Cévennes, but the banks of the Tarn and the Lot, and in the country between them. One or two extinct volcanoes have been observed within the limits of this department; but they are not so numerous as in the adjacent departments of Haute-Loire and Cantal.

The mineral wealth of the department is not great: lead, silver, antimony, copper, and iron ore are procured. There is not however any coal, nor are there any works for smelt- ing or working iron. Marble, freestone for building, and gypsum, are quarried; and there are some mineral springs, of which the most frequented are those of Bagnoles les Bains near Mende.

The rivers are all small in that part of their course which lies within the department. To the basin of the Rhône belong the Cèze, which rises in Mont Lozère, and down particles of gold; the Gardon d'Alais, the Gardon de Miallet, and the Gazizan, which unite their streams in the adjacent department of the Gard, on the eastern border of which all these rivers join the Rhône. The Chiasse, and the Borne water the same basin, and flow by the Ardèche into the Rhône. To the basin of the Loire belong the Allier, which rises in the north-eastern slopes of La Margeride, and for some distance separates this department from that of Aveyron, and that of the great river of Cantal, the Chasseaux and the Caveau to the north of the department, and the banks of the Tarn and the Lot, and in the country between them. One or two extinct volcanoes have been observed within the limits of this department; but they are not so numerous as in the adjacent departments of Haute-Loire and Cantal.

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the departments of Lozère and Cantal: it rises in that of Lozère, on the western side of Mont Lozère and flows westward to Sainte Enimie, and then south-west into the department of Aveyron. In one part of its course (the Pas-de-Souci) the Tarn passes between two precipitous rocks which nearly meet overhead and form a magnificent bridge. It receives the Génier from the Jonte, which separates the department of Lozère from that of Aveyron, and several smaller streams: about 45 or 48 miles of its course belong to this department.

Entirely destitute of inland navigation, the department is very irregular and dissected with hills. There are fine government roads, having an aggregate length of 239 miles; but of these only 88 miles were in 1837 in repair, 23 miles were out of repair, and 128 were unfinished. The principal road is that from Paris by Moulins and Clermont to Narbonne and Perpignan. It enters the department from that of Cantal on the north, and runs by St. Chély, Aumont, Marvejols, and Chirac into the department of Aveyron. The road from Paris to Mende branches off from this at St. Chély, and a road from Mende to Pont-le-Font-Gard near the Rhône; and by Ispahanac and Florac to Nimes (Gard). A considerable road from Langogne leads by Villefort to Alais (Gard) and Nimes (Gard).

The departmental roads are 21 in number, with an aggregate length of 370 to 380 miles; but more than two-thirds of the whole length are out of repair; the bye-roads and paths belong to the hundred, with an aggregate length of more than 2000 miles.

The general elevation of the soil renders the climate colder than from the latitude would be otherwise expected. The mountains are covered with snow during a great part of the year. The western slope of the mountains and plains of Lozère and the north-eastern slopes of the latter have a moist rainy atmosphere: on the south-eastern slope of the Cévennes there is less rain; and droughts of such length as to injure vegetation are not uncommon. The heat of summer in the department is rarely great; and tempests are frequent at that season. In the mountainous districts little grain is grown; and indeed throughout the department the quantity of arable land is less than usual in France, and the corn grown is insufficient for the consumption of the department. Chestnuts and potatoes, both which are much cultivated, form the principal food of the peasantry. Flax, hemp, and hay are grown. Many plants used in medicine, in tanning, or in dyeing, are found; among them is mullein. The stephane of the Cévennes and mountains of the Cévennes the industry of some of the cultivators has succeeded in raising the olive, the vine, and the mulberry. The vineyards occupy from 2000 to 2500 acres. Woods occupy about a twelfth part of the surface; the beech is the common tree. The woods of the Cévennes are wolves. The meadow lands occupy about a fifth of the department; but the heaths and open wastes are very extensive, and serve for the pasturage of cattle, and of numerous flocks of sheep. Many miles are rented for carrying goods across the mountains; or for exportation to other parts of the south of France or to Spain. Game is abundant; and trouts and eels are numerous in the rivers and ponds. The department is divided into three arrondissements, as follows:—

<table>
<thead>
<tr>
<th>Area in</th>
<th>Population</th>
<th>Com.</th>
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<tbody>
<tr>
<td>1831</td>
<td>1858</td>
<td>muns.</td>
</tr>
<tr>
<td>Mende</td>
<td>45,199</td>
<td>44,199</td>
</tr>
<tr>
<td>Florac</td>
<td>6,166</td>
<td>6,125</td>
</tr>
<tr>
<td>Marvejols</td>
<td>53,392</td>
<td>54,102</td>
</tr>
</tbody>
</table>

1892 140,347 141,733 188

It is divided into 27 cantons, or districts under a justice of peace.

In the arrondissement of Mende are Mende and Le Bley- mard on the Lot; Villefort near Mont Lozère; Langogne on the Ailier; Châteauneuf de Randon on the Chapeaucours, and Grangier on a small river of the same name which empties into the Cézou. Mende was formerly the capital of the province of Gavaudan. It is in a dreary and mountainous district; but the immediate neighbourhood of the town, which is in a valley watered by the Lot, is pleasant, being studded with gardens, meadows, and orchards, in which are apple and pear trees, producing excellent fruit, and many fine walnut-trees. The town occupies a site nearly triangular, and is at an elevation of about 1800 feet above the level of the sea. It is surrounded by a small boulevard. The streets are ill laid out, narrow, crooked, and dirty; the houses, which are roofed with slate, are generally ill built. The situation is very inferior building, though its steeples are praised by some writers for the lightness and boldness of their architecture. The former episcopal palace, now the prefecture's house, has a handsome gallery and salon with some curious paintings. Around the town are many small and country-houses. The population of Mende was, in 1831, 3559 for the town, or 5822 for the whole commune: in 1836 it was 5909 for the commune. A considerable quantity of serge is manufactured here, and coarse cuttus, and cutta, and for woolens, and there are several foreign lands; there are two considerable yearly fairs. There is a high school, a public library, a theatre, and an agricultural society. There is in the immediate neighbourhood of Mende a mountain which rises: the mountain, more than halfway up, is the hamlet, or dwelling of St. Prisca, bawn in the rock. About five miles east of the town are the warm sulphurous springs of Bu- nos, which are in high repute for rheumatic and cutaneous complaints, and for wounds. The water of these springs is a valid resort to them yearly. There is also at Langogne, or Eu-Nu, near Mende, an ancient tomb, erroneously supposed by some to be that of Mathias Plancus, who built Lyon. Pope Urban V. was born near Mende.

The cloth of Mende and the woollens and other woollens are carried on. Villefort is the centre of a district in which wine and chestnuts are grown. Lead and copper mines are worked in the neighbourhood, and trade is carried on in horses and cattle. At Langogne (pop. 2309 in 1831) are iron works, and there is a place where the copper is manufactured, and there are copper-works. Châteauneuf de Randon is a small town of perhaps 500 inhabitants: it has a good market. It was in besieging this little town, in 1426 (A.D. 1383 in the pope's calendar) that Charles the Good was slain. The governor of this place, who had agreed, if not succoured, to surrender to him, laid the keys of the place on Du Guesclin's coffin.

In the arrondissement of Florac are Florac, on the Tarn; a feeder of the Tarn; Pont de Montjouquet, and Sainte Enimie on the Tarn; Meyrueis on the Jonte and Barré and St. Germain near the highest ridge of the Cévennes. Florac is in a narrow valley, and consists chiefly of one street on the road which runs from Mende to Nimes. It is an important manufacturing place; there is a large factory for the manufacture of woolens, and there are copper-works. At Sainte Enimie there is a small town. There is little trade, but the neighbourhood of the town is fertile. Ispahanac, or Espagnacq, is delightfully situated: it is a pleasant valley. Some cotton manufactures are carried on at Sainte Enimie, and hemp is manufactured. Near Meyrueis are some curious caves, and some beds of coal, which are not worked.

In the arrondissement of Marvejols is Marvejols and Chirac, on the Coulanges; Balsages and on La Caumaz near the Lézot; Servette and Mont Lozère on the Tarn; St. Alban on the Limian, a small feeder of the Truyer; St. Chely d'Aupilhac, on another small feeder of the Truyer; and Aumont between St. Chely and Marvejols. Marvejols was taken in A.D. 1383, by the duke of Joyeuse, who commanded the troops of Henri III, and in violation of the capitulation the town was pillaged and burnt, and the walls were razed to the ground. Six years afterwards Henri IV. sided the inhabitants in re-conquering the place; it is now a small town. It had before the Revolution several monastic establishments. The population in 1831 was 3756 for the town, and 3885 for the whole commune; in 1836 it was 3828 for the commune. There are several mills on the Cézou, which some of the inhabitants are manufacturing. The woolen manufactures are manufactured at Balsages, La Canourgue, Serreters, Malzeneix, St. Alban, and St. Chely. Red granite quarries are near St. Alban; there is in the town a château on the sound of an height for insane females. At St. Chely (pop. 1555 in 1831) are 1621 whole commerce; there are wine-markets, at which a good deal of business is done in coarse-considerable trade is also carried on in woolen stuffs. The chief manufacture of the department is that of serge and other woollen stuffs; spinning cotton-wool is also
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placed themselves under the protection of the emperor
Frederick II., who confirmed all their privileges, and made
Lübeck a free imperial city.

The citizens had many contests to maintain with their
neighbours and powerful enemies, but their valour and dip-
tinct triumphed on every occasion. The wealth and power
of Lübeck increased, and it joined the Hanseatic League,
of which it became the head. [HANSE TOWNS.] Its fleets
commanded the Baltic; Gustavus Vasa found an asylum
there; and it was more or less influential in European
affairs, until the latter part of the 18th century.

As an evidence of the prosperity of Lübeck during the
flourishing period of the Hanseatic League, it may be stated
that Lübeck was known as the "black death" and is
said to have carried off in five months 80,000 and 90,000
persons, without depriving the city of more than half of its population. This number is presumed
however by some writers to be far above the truth; yet it
seems probable that, between 1580, between 50,000
and 60,000 citizens able to bear arms were there, which
would certainly imply a population of 200,000 souls.

After the dissolution of the Hanze in 1630 to the present
day, Lübeck has passed through numerous vicissitudes. The
state of the Hanze was 45 and 46.

The occupation of the city by Blücher after his retreat from the
battle of Jena, and his brave but unsuccessful defence
against 70,000 French soldiers, led to the plunder of the
town during three days, when many of the defences
were destroyed. The whole of the town was carried off or wantonly destroyed. Lübeck, like Hamburg,
was incorporated with the French empire in 1810, and
so remained till it recovered its freedom after the battle
of Leipzig in 1813.

Lübeck, in its present state, is no longer a fortified
town; the old ramparts are converted into public walks, and the
city, being on a moderate eminence between the Trave and
the Wakenitz, is very pleasantly situated, and is very
clean and cheerful. The interior is more regular than in most
of the old German towns, and has numerous squares,
street, and straight streets. The streets are built of stone.
A great number of the houses are in the old-fashioned style,
with the gable ends towards the street, but the modern
are in better taste. Besides the cathedral, which contains
valuable paintings and remains of ancient art, there are five
parish churches, of that of St. Mary is one of the finest Gothic churches in northern Germany.
It is 340 feet long, and the middle nave 152 feet high (so
said by Zetz). The church contains valuable paintings by Holbein, Vandyck, Perugino, Alderfer,
and other masters, a very curious astronomical clock, a 'Dance of Death,' a fine organ, and a remarkable altar by Guillmès
of Antwerp, &c. The other churches are much inferior to
St. Mary's. Lübeck is the centre of the Hanseatic
servations, which are numerous and admirably conducted.
The public establishments and buildings are the gymnasium,
the commercial institution, the patriotic society, the
mechanics' school of design, the Roman Catholic church,
and Calvinist church, to name others. The senate-house,
an antient Gothic building, contains the hall where the
deputies of the Hanze formerly met.

The territory which we have already described, including the
detached district and those which it possesses in common
with Hamburg and Lübeck is about 139 square miles in
extent, with a population which may now be estimated at
46,500, that of the city being 26,000 at the most, that of
Travemünde 1100, and of Bergedorf and its district 3300.
The manufactures are of various kinds, but none on a
large scale.

The commerce of the city is beginning to be of consider-
able importance. It has 80 ships of its own, and the
arrivals are above 900 annually. At the moment that
this is written, the Hanseatic League is in being.
Between Hamburg and Lübeck there has always been a
great transit trade; the route is partly through the Danish
lands, and has hitherto been free from all tolls. But
in defiance of ancient and still subsisting treaties,
Denmark and the two cities, the Danish government
recently imposed a very heavy duty on all goods going from
Hamburg to Lübeck, and vice versa. It is singular that
the duty on the first is fixed at double that on the second.
It almost seems as if this were a tax on the land, as the
British colonial produce and manufactured articles, sent from Hamburg to Lübeck,
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amount to above a million sterling annually, while the Russian and Swedish goods from Libeck to Hamburg do not exceed 200,000/. The two cities have appealed to the diet of the German confederation, whose decision is anxiously expected. For some years past there seems to be a regular traffic between Libeck and St. Petersburg: the voyage is generally made in three and a half or four days. (Hassel, Geogr. vol. v.; Stein, Geogr.; Zeit. Anzichten von Libeck.)

Lubeck (Principality). [Oldenburg.]

Lubienietski (Latinized Lubieniecki). There is a family of this name (see A List, two Christopher, and two Stanislaus), all distinguished in the Polish-Saxon controversy. A list of several writings may be found in Sardinia, Bibl. Antiquarum, Freiburg, 1684. The subject of the present article is Stanislaus Lubienietzki, who was born at Cneuw, August 23, 1623, and died in exile at Hamburg, May 18, 1678. He was minister of a church at Lublin, until driven out by the arm of power for his opinions. He died, as is stated, by poison; a fact borne out by the death of his wife, after eating of the same dish, and by the neglect of the Hamburg magistracy to institute the investigation usual in cases of sudden death.

The theological works of Lubienietzki are numerous, and may be found in Sardinia, with the exception of the ‘Historia Poloniae’, published in 1685, at Freiburg, with a Life prefixed. But the work which makes his reputation, and entitles him to a place here, is his ‘Theatrum Cometicum’. This work was published at Amsterdam in 1660 (this is a single edition); but a copy in the possession of a Leyden title-page, and the date 1681. This change of titles in different parts of the same edition was formerly not uncommon, and has caused much confusion. A pictorial frontispiece has the following annotation: Stanslaus Lubienietzki: ‘Satis in ulna Jesu lucebat.’

The ‘Theatrum Cometicum’ consists of three parts. The first contains the correspondence of the author with men of science throughout Europe on the subject of the comet, which was in its communications from Vossius, Oldenburgh, Hevelius, Kircher, Boullaud, Von Guericke, &c. &c. The second part contains an elaborate account of all the comets (413 in number) recorded in history down to the year 1665. It is written in support of the hypothesis that comets portend both good and evil, in opposition to the prevailing notion that they were harbingers of misfortune only; and this opinion is supported by history, it being clearly shown that public events of both characters usually followed close on their comets. The third part points out that the comet of 323 strengthened the heresy of Arius, it also brought about the council of Nice; and this, from Lubienietzki, was not a little satirical.

We are in doubt whether to conclude that the author maintained his hypothesis in order to service his own ends, or chose his line of argument as the best practical mode of attacking the prevailing terrors. And our doubt becomes stronger when we see that in the third part, called ‘Theatrum Cometicum exitus,’ he rather widens his hypothesis; and whereas he had before maintained that comets foretell both good and evil, he now asserts the dilemma that they predict both or neither, but still cautiously.

In the late discussions about Halley’s comet this work of Lubienietzki was freely cited in favor of a foretold appearance, of that memorable body. It seems to have been taken for granted that the mere mention of a comet by this author is sufficient evidence of its having really appeared. It may be useful therefore on future occasions between this and a supposed appearance of the comet, to first examine the authority on which the fact rests. Lubienietzki has collected every instance, and gives his own solution; but that the mass of research which appears wonderful is that even happens that the original historian of one of Lubienietzki’s comets was born many hundred years after the phenomenon for the appearance of which he is made sufficient evidence.

Lublin, a woiwodschaft, or province, of the kingdom of Poland, is composed of the circles of Lublin, Chełm, Józefów, and Zamojski, which formerly belonged to Galicia, and are ceiled by the province of Lithuania. It lies between 50° 17' and 51° 45' N. lat., and 21° 34' and 24° 7' E. long., comprising an area of 6650 square miles, with a population of 300,000 inhabitants. It is bounded on the north by Podlasie, on the south by Galicia, and on the west by Samson. The Ustria separates it from Samson, the R. from Russia, and the Wieprz (which flows through it) for some distance from Podlasie. This province has extensive forests, and in some parts moorish, but likewise common lands, and is covered with a fine breed of small cattle. There are no metals except copper. It is divided into four circles (in Polish województwo), viz. Lublin, Zamojski, Hrubieszowskie, and Krasinski. The principal towns in the circle of Lublin, besides the capital, are Jaroslaw, Lubaw, the Wieprz, three counties, three churches, a Capuchin convent, and 3390 inhabitants. Kurov, on the Kurowka, has a fine palace of Count Potocki, two churches, and 1920 inhabitants. In 1563 mineral springs were discovered, which, on the Ustria, was near the residence of Prince Czartoryski, whose splendid palace, with its library of 60,000 volumes, many MSS., a collection of rare Polish antiquities, and countless treasures of art, was celebrated throughout Europe. The possession of the Sibba, the country-seats of Marynow and Parchecka, and the Dairy-farm in an island of the Ustria, the banks of which were covered with pretty country-houses. Such estates in Poland, it fell to the share of Austria. In the Poles took it; and in 1813 the Russians. In 1592 the Polish state bought the town and environs of Count Stanislaus Zamoyski, who received for it above fifty thousand pounds. In 1660, the Zamoyski, after his victory over the archduke Maximilian of Austria. The houses were built in the Italian style; and a high school with a considerable library, which was long celebrated, was founded in 1600, and called the Cassember school. The town stands on a hill, and is walled and bridged; it has a palace, for the residence of the Polish bishop, and several churches and convents; this last contains the school of the Ex-Jesuits, the Visitandines, the Dominicans, and the Carmelites, are of worth. There are twelve mens’ and six nuns’ convents (some of which have been suppressed), a Marias, a gymnasium, an academy of sciences, and a Walter’s hospital and charitable institutions. The town has three annual fairs, which are frequented by great numbers of German, Greek, Russian, Armenian, and Turkish merchants, and it has a great trade in woollen cloth, corn, and Hungarian wines; but the late events have not less an injurious effect on the trade of the town, as
they have had on the manufacture of woollen cloths, which was carried on in the Levant and Persia. The population is 12,500.

LUCA'S DE. [De Luc.]

LUCA NUS, MARCUS ANNUS, was born at Corduba (Cordova), in the province of Buitca, in Spain, a.d. 33. He was the son of M. Annuus Mela, who was the brother of certain some several times long in the imperial favour. Mero was ambitious of being considered the best poet of his age; and Lucan was foolish enough to enter into competition with his imperial master, and to receive the prize for the best poem in a literary contest with the emperor. The composition of any more poems; and simply, as it appears, on account of this prohibition he entered into a conspiracy with Piso and many others to assassinate Nero. (Tac., Ann. xv. 43.)

This conspiracy was detected, and Lucan, being condemned to death, was executed in consequence of the death of his own verses, which described the death of a wounded soldier in consequence of loss of blood. (Tac., Ann. xv. 70.)

He died a.d. 65, in the twenty-seventh year of his age.

Lucan wrote many poems, which have not come down to us. The best, however, is his pastoral for the death of Caesar, entitled 'Cataulogus Hercudum,' 'Hector Lysia,' 'Orpheus,' 'Saturumia,' 'Sylvarum libri x.,' 'Medea,' an unfinished tragedy, 'Satiricae Fabulae viii.,' etc. The only work extant as a poem on the civil war between Caesar and Pompey, entided 'The Civil War,' is a work at the time of his death. The first book opens with the most extravagant adulation of Nero, in which the poet even exceeds the base subserviency of the poets of the age of Augustus. The 'Pharsalia' contains many errors; but it is also of useful merit, because it is characterized by considerable rhetorical merits, but the language is often inflated, and the expressions extremely laboured and artificial; the poem is also deficient in that truth to nature, and in those appeals to the feelings and the imagination, which are the sympathy of every reader. Still great allowance must be made for the youth of the author, who, if he had lived longer, would probably have discovered himself of those faults and defects which are so conspicuous in his poem.

The essays on Roman proverbs are by Burman (1740), Bentley (1760), Weber (1831), and Weise (1853). Among the numerous translations of the 'Pharsalia' those most deserving of notice are—in French, by Marmontel (1766), and Beaufour (1799); in English, by Rowe (1718), and by May (1780); in Italian, by Torriani (1740); and in Latin verse (1640); and in Italian, by Cis- tolo Boccella (1804).

LUCA, PAUL, born at Rouen in 1664, first travelled as a jeweller, after which he entered the Venetian service against the Turks. In 1692 he returned to France, bringing with him a collection of antient coins, engraved stones, and other curiosities which were purchased for the king's cabinet of medals. In 1699 he went to Egypt, and continued the civil description of the country. He afterwards visited Cyprus, Syria, Armenia, and Persia, but was at last plundered at Bagdad of most of the objects of curiosity which he had collected in his journey. He returned to Paris in 1703, and published the narrative of his journey. 'Voyage au Levant,' 1744, which contains numerous exaggerations and absurd stories. Lucan was not deficient in observation, but he did not always tell the truth; perhaps he thought that a dash of the marvellous would enhance his narrative, or perhaps he listened credulously to the stories of others. In 1703 he was sent by Louis XIV. to the Levant again, for the purpose of making collections, and he visited Asia Minor, Macedonia, Syria, and Barbary, and returned to France in 1708. He published the narrative of this second journey in 1716. 'Voyage en Turquie, l'Asie, Scyrie, Egypte, etc.,' which is the best of the three, though it also contains numerous exaggerations and absurd stories. Lucan died in the Levant, and is supposed to have been coldly received as a worshipper of old Constantine, and is often mentioned in the monasteries of the Levant, and at last died in Spain, in 1737, having gone thither for the purpose of examining the antiquities of that country.

LUCIA, DUCHY OF, a small state in Italy, south of the Apennines of Molena, and between them and the sea, is bounded on the north by the territories of Modena, on the east and south by the grand-duchy of Tuscany, and on the west by the sea. It is watered by the river Serchio, which rises in the Apennines of Garfagnana and enters the Medi-terranean on the north of the Arno. Its area is about 320 Italian square miles of 60 to one degree of latitude. (Serristrati, Saggio Statistico.) Its population is 152,000, being the most densely inhabited state of Italy.

The territory of Lucania is naturally divided into three provinces: 1st, the mountains; 2nd, the valley of the Arno; and 3rd, the coast. The mountains extend from the Apennines to the Tiber, and are divided into several lesser districts. The coast is divided into three districts: the Ionian, the Adriatic, and the Levantine. The Ionian coast is the most fertile and productive, and is divided into the two districts of the Tiber and the Arno. The Adriatic coast is the least fertile and productive, and is divided into the two districts of the Tiber and the Arno. The Levantine coast is the most fertile and productive, and is divided into the two districts of the Tiber and the Arno.

The country is divided for administrative purposes into eleven 'Comuni,' namely, Lucera, Viareggio, Campanor, Villa Basilea, Cossano, Montepopoli, Borgo, Loregna, Bagni, Gallico, Minuciano. At the head of each of these comuni is a civil officer called Gonfaloniere, and likewise a judge called Consi- missario Giudicente. In the town of Lucania the civil, criminal, and commercial tribunals for the whole duchy, as well as the metropolitan court of appeal, are held. There are about 180 students, and with a library of 16,000 volumes, two clerical seminaries, and a college for 60 boarders, besides 16 grammar-schools, in the whole duchy, attended by 427 pupils, and 106 elementary schools, 39 of which are gra- dual, attended by altogether 29110 students. In Lucania education there are the Institution of Maria Luisa, the Conservatorio, and an Opera for the poorer class, the whole of which board about 524 girls. The clerical establishment consists of one archbishop (of Lucera), 4 chapters, 245 chalciemies, 625 priests, and 433 clerks. The minor orders only. There are also 12 convents of men with 391 inmates, and 11 convents for females having altogether 453 nuns. The military consists of one battalion of infantry, one company of artillery, and a body of gendarmes, in all 700 men, besides 1,9000 Italian livres, or francs. The chief heads of the expenditure are, 396,000 livres for the duke's civil list; 281,000 for the military; 1,223,000 for the expense of the administration. The communities tax themselves for their local expenditure, which amounts to about 150,000 livres altogether.

There are nearly 40,000 landed proprietors in the whole duchy, or about one to every four individuals; 6300 persons employed in trade and manufactures; 1270 employed in the civil departments of the government, and 20,000 in the minor orders only. There are also 12 convents of men with 391 inmates, and 11 convents for females having altogether 453 nuns. The military consists of one battalion of infantry, one company of artillery, and a body of gendarmes, in all 700 men, besides 1,9000 Italian livres, or francs. The chief heads of the expenditure are, 396,000 livres for the duke's civil list; 281,000 for the military; 1,223,000 for the expense of the administration. The communities tax themselves for their local expenditure, which amounts to about 150,000 livres altogether.

The present duke of Lucania is Carlo Ludovico, son of Ludovic, prince of Parma, and of Maria Luisa of Spain. Carlo Ludovico was born in 1799, and he succeeded to the sovereignty after the death of his father. He then reduced his own civil list by one third, namely, 198,000 Italian livres, and has since made other useful reforms and improvements in his little state.
LUCCA, the capital of the duchy, is situated in a rich plain watered by the Serchio, and surrounded by mountains: it is eleven miles from the sea, and about ten miles north-east of Pisa; its circumference is a little more than three miles, and it contains 22,000 inhabitants. Lucca is surrounded by ramparts, which are planted with trees, and form a very pleasant promenade. The town is well-built, and is supplied with good water, and the streets are well paved and clean.

Lucca, like most other Italian cities, is rich in churches; the cathedral, which belongs to the eleventh century, is adorned with several good paintings, and still more with statues and monuments by the native sculptor Cipriani. The archiepiscopal archives and those of the chapter contain a vast mass of historical documents, parchments, and MSS., some of which were written in the last part of the ninth century and the first of the tenth. The other remarkable churches of Lucca are St. Frediano, which has some fine Roman columns; St. Francescotto, with the tomb, indicated by a simple inscription on the wall, of the greatest that Lucca has produced, Castruccio Castracani; St. Cristoforo, with the tomb of the sculptor Cipriani; St. Michele; St. Paulino; St. Giovanni, with its baptistry; St. Maria in Corte Landini, which contains several good paintings; the annexe convent belongs to the 'Chierici Regolari della Miseria' of the sixteenth century founded by Giovanni Leonardi, a native of Lucca, who has produced many learned men. It has a library of 20,000 volumes. The ducal palace is vast, but unfinished; it has a gallery of valuable pictures, the most notable of which belong to the collection of the grand master of the time, and a library of about 25,000 volumes. The palazzo Pretorio, or town-house, which belongs to the fifteenth century, is a massive sombre building. The palace Guidicconi, where the public archives are kept, and that of the Marquis Bernadini, are also worthy of notice.

The academy of letters and sciences of Lucca, instituted in 1817, which consists of thirty-six members, holds its meetings once a month in a hall of the Lyceum, and has published several volumes of 'Atti,' or memoirs. The duke is present at all these meetings.

Lucca ('Lucca') is mentioned in ancient history as a town belonging to the Etruscans after they had conquered the country between the Arno and the Mastra and taken it from the Ligurians. It afterwards became a Roman colony. There are still remains of a Roman theatre, and of an amphitheatre.

Lucca in the middle ages was a republic, often at war with Pisa and Florence. It was at one time with Pisa at the head of the Guelfic party (Castruccio Castracani) against Guelph Florence, and under the rule of the Medici, Milan, was restored to its liberty by the emperor Charles IV, in 1370; but it was subject successively to several tyrants, and at last settled gradually into a narrow aristocracy. One of its citizens, Burlamacchi, about 1546, being made gonfaloniere, attempted to put down the popular party for the purpose of restoring the popular government, not only at Lucca, but in all the other Tuscan cities. Being discovered, he was arrested and given up to the imperial governor of Milan, who put him to death.

In 1556 a law was passed at Lucca, on the proposal of the gonfaloniere Martin Bernadini, by which certain numbers of families were eligible to office: by this law, which was called 'Martinnian,' established a close aristocracy like that of Venice. In 1660 the privileged families were 160; in 1727 the number was 89, the others having become extinct. From among those families was elected a 'Signoria,' or executive of nine. In 1724, the office of 'Avvocato,' or elder, and a gonfaloniere, a senate of 36 members, and a great council of 90. In this manner Lucca was surrounded by a circle of more than one thousand families in rank and obscurity. In 1799 the French, under General Séronier, entered Lucca, placed a garrison in it, ejected the arsenal, carried away all the brass cannon from the ramparts, and exacted two millions of francs, besides supplies of provisions, for having to have the greatest regard for the ancient republic of Lucca. Meantime the democratic party, supported by the French, demanded a change in the form of government; the Martinnian law was abolished, and a constitution after the then prevalent fashion, with two councils, was proclaimed. In 1810, having re-established monarchy both in France and Italy, gave Lucca to his sister Eliza as a principality, with new constitutional laws.

In 1811 the Congress of Vienna gave Lucca to Maria Luisa of Spain and her son, the child of the Prince of Parma; the latter duchy being given to Maria Luisa of Austria, Napoleon's consort, for her life. It was also stipulated that after the death of Maria Luisa, the present duchess of Parma, the duke of Lucca should have sign of his territorial duchy, and Lucca should be united to the grand-duchy of Tuscany. So, in the year 1815, the state of Lucca was annexed to the Grand-duchy of Tuscany.
season it may be cut four or five times. After each cutting it is useful to draw heavy harrows over the land, or an instrument made up purposely resembling harrows, the teeth of which are flat, and cutting the soil like small curlers. It Lucerne makes a splendid crop, it divides the crown of the root, but it will destroy grass and weeds. Liquid manure, which consists of the urine of cattle and drainings of dunghills is often spewed over the lucerne immediately after it has been mown, and much invigorates the new plant and, by increasing the size of the leaves, makes the root much heavier. It also, by supplying the minerals necessary, promotes the rapid growth of the lucerne. All of this is of great importance, and the lucerne will not thrive unless this is done. A careful course of regular tillage should succeed. The same land should not be sown with lucerne again in less than ten or twelve years, after a regular course of cropping and manuring.

The best fed upon lucerne thrive better than a great many others. Horses, in particular, can work hard upon it without any corn, provided it be slow work. Cows give plenty of good milk when fed with it. In spring it is apt to purge cattle, which, with a little attention, is conducive to the cattle being in a better fettle by the end of May in the wet, or moist with dew, they run the risk of being hove. These inconveniences are avoided by giving it sparingly at first, and always keeping it twenty-four hours after it is cut, during which time the grass undergoes absolute fermentation, and the juice is partially evaporated: instead of being less nutritious in this state, it is rather more so.

An acre of good lucerne will keep four or five horses from May to October, when cut just as the flower opens. If it should be cut before the shoots have a chance to develop, it cannot be consumed, it should be made into hay; but this is not the most profitable way of using it, and the plant, being very succulent, takes a long time in drying. The rain also is very injurious to it in a half-dry state; for the seeds, though the French effects fruiting on English land and in England in 1664 by the English, but was evacuated by them in 1666, when the French immediately returned, but were in turn driven out by the Caribes. In 1716 the French again succeeded in forming a settlement, and its possession was again disputed by the English in 1727, but was taken once more in 1804 by the English, and has since remained subject to the British crown.

The government is administered by a lieutenant-governor and an executive council. The French laws are nominally in force, but being dispensed by English functionaries, are made to give place to the English practice whenever an adherence to the French code would be contrary thereto.

LUCIAN (Athenius), a celebrated Greek writer, was born at Samosata, a city on the west bank of the Euphrates, in the eastern province of Commodes. He proposes no particulars respecting his life on which any reliance can be placed, except a few scattered notices in his own writings. From these it appears that he was born about the latter end of Trajan's reign, that he lived during both the civil wars in the reign of Aurelius Commodus, or shortly afterwards. His parents, who were in humble circumstances, placed him with his maternal uncle, a sculptor, in order to learn statuary; but he soon quitted this trade, and applied himself to the study of the law. He obtained a great name in the bar in Syria and Greece; but not meeting with success in this profession, he resolved to settle in Gaul as a teacher of rhetoric, where he soon acquired great celebrity and a numerous school. He appears to have remained in Gaul till he was about forty, when he gave up the profession of rhetoric, after having acquired considerable wealth.

The greater part, if not all, of his dialogues appear to have been written after this time; but most of his other pieces, such as his "Heroides," "Hercules and Cacus," "Bacchus, the Daphnians," &c., were probably written during the time that he taught rhetoric in Gaul. During the
remainder of his life we find him travelling about from place to place, and visiting successively Macedonia, Cappadocia, Paphlagonia, and Bithynia. The greater part of his time however was passed in Athens, where he lived on terms of the greatest intimacy with Demonax, a philosopher of great celebrity, and where most of his works were probably written. Towards the latter part of his life he held a lucrative public office in Egypt, which was bestowed upon him by the emperor Commodus after the amount of his having torn to death by dogs, for having attacked the Christian religion, rested on no credible authority, and was probably invented either by Suidas or some other Christian writer of similar character.

The Dialogues of Lucian are written in remarkably pure and elegant Greek, and are free from the false ornaments and artificial rhetoric which characterise most of the writings of his contemporaries. Modern critics have usually given him his full meed of praise for these excellencies, and have also almost entirely passed over his great talent as a writer, and the inimitable ease and flow of his dialogue; but they have seldom done him the justice he deserves. They have either represented him as merely a witty and amusing writer, but without any further merit; or as a sophist, respecting to whom the charge of theocrasy, fanaticism, and imposture; the quackery and impositions of the priests, the folly and absurdity of the superstitious, and especially the solemn nonsense, the prating insistence, and the pretensions of the philosophers of his age. (See his Alexander.) Lucian may, in fact, be regarded as the Aristophanes of his age, and, like the great comic poet, he had recourse to raillery and satire to accomplish the great objects he had in view. His study was human characters, situations, and the manner in which he furnished ample materials for his observation. Many of his pictures, though drawn from the circumstances of his own times, are true for every age and country. As an instance of this we mention the essay entitled 'On those who serve the Gods for Hire.' If he mentions the follies and vices of mankind too freely, and occasionally uses expressions which are revolting to our ideas of morality, it should be recollected that every author ought to be judged of by the age in which he lived, and not by a standard of religious opinions unknown to his own age. The character of Lucian's mind was decidedly practical; he was not disposed to believe anything without sufficient evidence of its truth; and nothing that was ridiculous or absurd escaped his raillery and sarcasm. The tales he relates respecting the acts and exploits of the gods, which were still firmly believed by the common people of his age, were especially the objects of his satire and ridicule in his dialogues between the gods and in many other ways. That he should have attacked the Christians in common with the false systems of the Pagan religion will not appear surprising to any one who considers that Lucian probably never took the trouble to inquire into the doctrines of a religion which was almost universally despised, in his time, by the higher orders of society. Lucian's statements have sometimes had an historical value assigned to them which he does not appear to have intended: the story of Herodatus reading his history at the Olympic games is one of these. (Herodotus.) Lucian has been treated with all respect by his contemporaries, in his 'Action,' 'Zeuxis,' 'Eikonios,' &c. The best editions of Lucian's works are by Hemsterhuis, who only edited part of the first volume, and Reitz (4 vols. 8vo.), by Lehmann (3 vols. 8vo.), and the edition published by Schott (2 vols. 12mo.). The best modern translation of Lucian in German is by Wieland (6 vols. 8vo.). There is an English translation by Troke (London, 2 vols. 4to., 1820).

LUCIAN, SAINT, presbyter of Antioch, is said by some writers, but without sufficient authority, to have been born at Samosata: he suffered martyrdom during the reign of Diocletian, A.D. 312, and was buried at Helenopolis in Bithynia. He is frequently mentioned by ecclesiastical writers as a man of great learning and piety. Eusebius calls him a 'person of unblemished character throughout his whole life.' (Hist. Eccl., vol. 1, 311) and Chrysostom, on the anniversary of Lucian's martyrdom, pronounced a panegyric upon him which is still extant. Jerome informs us, in his 'Catalogue of Ecclesiastical Writers' (c. 77), that 'Lucian was so laborious in the study of the Scriptures, that in his own time the works were known by the name of Lucian; and we learn from some part of his works (Proef. in Parad., vol. 1, p. 1023), that the Lucian's revision of the Septuagint version of the Old Testament was generally used by the churches from Consolation to the end of the New Testament, which Jerome considered inferior to the edition of the Septuagint. There were extant in Jerome's time some treatises of Lucian concerning faith, and also some short epistles; but none of them have come down to us, with the exception of a few fragments.

There has been considerable dispute among critics respecting Lucian's belief in the Trinity. From the manner in which he is spoken of by most of the Trinitarian Fathers, and in his own treatises and letters, it is evident that Jerome and Athanasius, it has been maintained by some, that he must have been a believer in the Catholic doctrine of the Trinity; but on the other hand Epiphanius, in his 'Anchorety' (xxvi., vol. 1, p. 40), speaks of the Lucians and Athalians as a distinct sect under the name of A.D. 425, and wrote an account of the Arián controversy, which considerable extracts are preserved by Photius. Photius expressly says that Eusebius of Nicomedia and many of the principal Arians of the fourth century were disciples of Lucian, and that his views are quite orthodox, since he is said by Alexander (in Theodoret, Hist. Eccl., c. 4, p. 13, B) to have been excluded from the Catholic Church by three bishops in succession, for adherence to the views of Paul of Samosata. It is however usually supposed that he retired to the Catholic Church before his death.

LUCIDA, a name formerly given to the brightest star in any constellation: thus we have Lucida Hydræ, Lucida Lyrae, Lucida Centauri.

LUCIFER, bishop of Cagliari in Sardinia, is principally known in ecclesiastical history for refusing to hold an communion with the clergy who had, during the reign of Constantius, conformed to the Arian dogmas, although he was not at first himself disposed to adhere to the errors of those bishops. A.D. 352, he received again into the church all the Arian clergy who openly acknowledged their errors. In consequence of the decision of the synod at Alexandria, Lucifer eventually left the Catholic church, and his followers are spoken of by Eusebius under the name of Luciferians. The number of this sect was always considerable: Theodoret says that it was extensive in his time (Hist. Eccl., iii, c. 5, p. 126, D). Their opinions have been considered as of considerable attention at the time when they were admitted to communion, and this opinion is still entertained by several authors, among others by Faustus, Marcellinus, and Hilarius. Jerome wrote a work in refutation of their dogmas which is still extant.

Compare this work with his work on Heresies (c. ix.), where he describes the Luciferians held erroneous opinions concerning human soul, which they considered to be of a carnal nature, and to be transmuted from parents to children.

Lucifer is acknowledged by Jerome and Athanasius to have been well acquainted with the Scriptures, and to have been exemplary in private life; but he appears to have been a man of violent temper and great bigotry. Being banished from Sardinia by Constantius, in consequence of his opposition to the Arian dogmas, he resided for many years in the island of Sardinia. On the death of this emperor he returned to his diocese, where he died.

The writings of Lucifer are published by Tillet, Paris, 1658; they consist of:—Two books addressed to the Emperor Constantius in defence of Arianism; 'On the Author of having no communion with Heretics.' 'On the Duty of dying for the Son of God.' 'On the Duty of showing no mercy to those who sin against God'; and a short Epistle to Florentius.

LUCILIUS, CAIUS, was born at Sessa Aurunca (near Rome), in the north-western part of Campania, B.C. 148. He belonged to the Italian than a Roman, on the female side, was grand-uncle to Pompey the Great. In his sixteenth year Lucilius served, together with Marcus and Jugurtha, under Scipio Africanus at the siege of Nain (Veius, iv. 8, 4.) He is said to have died B.C. 103, in his forty-sixth year; but the expression of
Lucius (Sat. ii. 1, 34), in which Lucilius is called old (senex), seems to imply, as Mr. Clinton has remarked (Inst. Holt, vol. iii. p. 151), that he lived to a later date.

Lucilius is expressly said by Horace (Sat. i. 1, 61) to be the first writer of Roman satire; by which we must understand the writer who, after any satirical compositions before him, since the satires of Ennius and others are frequently mentioned by ancient authors; but that Lucilius was the first who constructed it on those principles of art which were considered in the time of Horace as essential requisities in a satirical poem. The satires of Lucilius were very popular even in the Augustan age; and to his writings some of the most eminent satirists of antiquity, Horace, Juvenal, and Persius, appear to have been indebted in no small degree for many of their most original and effective passages.

In addition to his satires, which were divided into thirty books, Lucilius also wrote a comedy entitled 'Numularius,' epistles, and hymns, none of which are extant, with the exception of a few fragments from his satires, which were collected and arranged according to their natural order by Varro. It is said that his versification was more flexible and more skilful, and his style more Sallustian in the spirit of his rebukes. He did not however confine his satires to the vices of mankind in general, but attacked private individuals, like the writers of the old comedy among the Greeks, and among the Romans, contemporary with his time, the enemies of the followers of Ennius, Cæcilius, Paquius, and Lucius. (Cic. Orat. ii. 16; i. 6, and Gall. N. A. xiv. 9), also speak in high terms of the style of Lucilius. Juvenal (i. 20) calls him magnus Auruncus alumnus. Lucilius attacked vice with such severity, that Juvenal (i. 20) describes his laughter as a scheme for the destruction of the vices of his rebukes. He did not however confine his satires to the vices of mankind in general, but attacked private individuals, like the writers of the old comedy among the Greeks, and among the Romans, contemporary with his time, the enemies of the followers of Ennius, Cæcilius, Paquius, and Lucius. (Cic. Orat. ii. 16; i. 6, and Gall. N. A. xiv. 9), also speak in high terms of the style of Lucilius. Juvenal (i. 20) calls him magnus Auruncus alumnus.

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The poet of Lucilius, entitled 'De Rerum Natura' (On the Nature of Things), contains a development of the physical and ethical doctrines of Epicurus. Notwithstanding the nature of the subject, which gave the poet an opportunity of describing many of the feelings which generally form the chief charm in poetry, Lucilius has succeeded in imparting to his didactic and philosophical work much of the real spirit of poetry; and if he had chosen a subject which would have afforded him the same opportunity for description and display of diction, will bear a comparison with the best efforts of the poets of any age and country. In no writer does the Latin language display its majesty and stately grandeur so effectively as in Lucilius. There is a power and an energy in his descriptions which we rarely meet with in the Latin poets, and no one who has read his invocation to Venus, at the beginning of the poem, or his beautiful picture of the busy pursuits of men, at the commencement of the second book, or the progress of the arts and sciences in the fifth, or his description of the creative spirit which devastates the Peloponnesian war, at the close of the sixth, can refuse to allow Lucilius a high rank among the poets of antiquity.

The object of Lucilius was to inculcate the great doctrine of Epicurus, so frequently misunderstood and misrepresented, that to the utmost of his power, and being wounded by a stone thrown at him in an affray of the people of Rome, died shortly after, and was succeeded by Lucius III.

Lucius III. Carded, Urbanus, a native of Lucera, was elected a candidate after the death of Alexander III. in 1181, and was consecrated at Veltremet, the people of Rome being opposed to him. He died in 1185, shortly after having an interview with the emperor Frederic Bar- larozzo at Astona. He was succeeded by Urban III.

Lucius III. was elected as cardinal at the time of the council of Trent, and stands on the south bank of the Gozzy river, in 26° 51' N. lat. and 80° 50' E. long. It was a large and populous place in the time of Abul Fazl, but was not made the residence of the court until the accession of Anas ud Dowlah in 1775, upon which event it was considerably enlarged, and after a few years became one of the wealthiest cities of Hindustan.

LUCON. [VENDRE.]

LUCON. [PHILIPPINE ISLANDS.]

LUCRETIA. [BRUTUS, M. J.]

LUCRETIUS CARUS, was born b.c. 95, and died b.c. 52, in the forty-fourth year of his age. We possess no particulars respecting his life, but he appears to have been born at Rome, was probably of equestrian rank, and is said to have put an end to his own life.

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LUCKNOW consists of three distinct quarters: the first, or oldest part, is made up of narrow and dirty streets, and is about 1000 yards in length. The second quarter consists of one handsome street, with a well-built market-place in the centre, and with smaller streets branching from it at right angles. The greater part of the houses are built of brick and wood, and are occupied by branches of the family or persons attached to the court. A space between this street and the river contains the royal palace and gardens, furnished and laid out in imitation of European fashions. The dwelling of the British resident adjoins the palace. The remaining quarter of the city is built in a purely Oriental style, for which reason it has the most interest for European visitors; it contains many splendid houses and religious edifices, erected by Asaph ud Dowlah, and an unfinished palace begun by his father he is not the only such in the city which has been left in an unfinished state through a prejudice universally felt by the Mohommedans in India against completing any unfinished undertaking of a deceased person. The English have cantonments to the east of the Goomty, and a few miles distant within Lucknow. Besides the persons connected with the British residency there are many English and other Europeans and their descendants living in the city, who in the pay of the king of Oude. Lucknow is distant from Benares 189 miles, from Agra 202 miles, from Delhi 40 miles, and from Calcutta 650 miles, all travelling distances.
manifested for speculations like those of Lucretius, may perhaps account for his poetry being estimated below its real merits.

In modern times the De Rerum Natura has been frequently attacked on account of its philosophical doctrines; and among the works that have been written against it is a long Latin poem, not without considerable merit, by the Cardinal Poligna, entitled Anti-Lucretius, sive de Deo et Nature, in which the author attacks Quintus, an abbot.

The best editions of Lucretius are, by Lambinus; whose commentary is very useful, 1563, 1570; Hoevearpax, 1725; Wakefield, 1796-97; Eichstädt, 1801; and Forbiger, 1828. The De Rerum Natura has been translated into most European languages; the translations of the most worth of notice are, the English by Crouch (frequently printed), and by Mason Good, with the Latin text, and numerous notes of little value, in 2 vols. 1805; the French by Lagrange, with the Latin text, 1799; the German by Meinecke, 1796, and by Nebel, 1811; and the Italian by Marchetti, 1714, frequently reprinted.

LUCRINE LAKE. [Avignon.]

Lucullus, a genus of the natural family of Rubiacees, subgenus Cinchonaeceae, tribe Cinchonaceae, and subtribe Eucinchanon, thus indicating the close affinity of this genus to that of the trees yielding Peruvian bark, or true Cinchona, in which indeed the only known species, L. gratissima, was placed by Dr. Wallis and figured in his "Treat. Pl. Nepal.," t. 1., 1800. Not surprizingly, nearly all the Neg-Uruguayan species are some of the other smaller hills in the Valley of Nepal; also at Bechicaco and Koolakan. It delights in exposed, rather naked situations, blossoming according to the situations where it is found, nearly the whole year round. It is cultivated in the Pandoon Hills, below, flowering in the month of September. As seen by Dr. Wallis it attains a height of sixteen feet, but he was informed of its growing to a larger size. It has been introduced into and has flourished in this country; but from the nature of the climate where it is so abundant, it is only suited to the greenhouses of England. Its locality and affinities are interesting, particularly when coupled with the prevalence in the same mountains of two other genera, Hymenodictyon and Hy- melepogon, belonging to the same subtribe Eucinchanon, and the further part of Mesopotamia, Sulla had a very high opinion of the talents and integrity of Lucullus, and employed him, though he was very young, in many important enterprises. Whilst Sulla was besieging Athens (b.c. 87), Lucullus was sent into Egypt and Africa to collect a fleet and army. In October of the following year, Sulla entered the city of Massilia, and Lucullus, who had left Asia to collect the money which Sulla had imposed upon the conquered states. So great was the sight that Sulla had for Lucullus, that he dedicated his Commentaries to him, and in his last will made him guardian to his son.

In b.c. 74, Lucullus was elected consul, and was appointed to the command in the war against Mithridates. During the following eight years he was entirely engaged in the destruction of this brilliant enemy, completely defeated Mithridates and his powerful son-in-law Tigranes. In b.c. 73 he defeated Mithridates at Cyzicus on the Propontis, and in the following year again conquered him at Cabiri, on the borders of Pontus and Armenia. In part of his march he encountered Tigranes, who had espoused the cause of his father-in-law: and completely defeated his forces near Tigranocerta in Armenia. He followed up his victory by the capture of Tigranocerta, and in the following year also took Nisibis in Mesopotamia; but was not able to derive all the advantages he might have done from his victories, in consequence of the mutinous disposition of his soldiers. Lucullus never appears to have been a favourite with his troops; and their dissatisfaction was increased by the avarice of Chlorides, the officer in command, and the frequent visits of popular women at home were not slow in attacking a general who had been the personal friend of Sulla, and who was known to be a powerful supporter of the patrician party. They accused him of promoting the war on account of the facilities it afforded him of acquiring wealth; and eventually he was put to death by his soldiers, in consequence of a message by which they had been informed of the command, and succeeded by Pompey. b.c. 66.

The senate, says Plutarch, had looked forward to Lucullus as likely to prove a most powerful supporter of the patrician order; but in this they were disappointed; for Lucullus, on his return to Rome took no part in public affairs, and passed the remainder of his life in retirement. The immense fortune which he had amassed during his command in Asia he employed in the erection of most magnificent villas near Naples and Tusculum; and he lived in a state which astonished even the wealthiest of our contemporaries. Lucullus was a man of refined taste and liberal education. He wrote in his youth the history of the Marsean war with the Greeks (Plutarch, Luc., c. 1. compare Cie. Ad Att., 8), and some derived from this source of learning in the art of poetry. His houses were decorated with the most costly paintings and statues, and his library, which he had collected at an immense expense, was open to all learned men. He lived on intimate terms with Atticus, who has left us one of his books with the name of his friend, namely, the fourth book of his "Acauleal Questions," in which he makes Lucullus defend the philosophical opinions of the Old Academy.

It is true that during the latter years of his life Lucullus lost his senses, and that his brother had the care of his estate.

(Plutarch's Life of Lucullus; Livy's Epitomes; Appian, Mithridatic Wars; Cicero's Acad. Quaest., iv.; Clodius' Fasti.)

LUDLOW, a corporate town and parliamentary borough of Shropshire, 138 miles north-west by west from London. It is locally within the hundred of Munslow, and is accurately situated on the eastern bank of the Teme, a branch of the Severn. It is, from its situation and the wide and magnificent view which extends from it over the country below and the bridge of three arches. The charters date from the first year of the reign of Edward IV. to the first of James II. The property of the corporation consists chiefly of houses and lands in Ludlow and its immediate vicinity. The body corporate consists of the town officers, which are five: viz., the mayor, the town clerk, the overseers of the poor, the bailiffs, and the burgesses. The town council consists of four aldermen and twelve councillors.

The streets of Ludlow are well paved, and lined with gas, and the houses are in general well built. The inhabitants are amply supplied with water, which is partly drawn from three springs situated about a mile and a half from the town, and thence conveyed in leaden-pipes, and partly from a spring situated near the town. The water is excellent for police, consisting merely of the chief constable and such other persons as are appointed by the vestry, to be said to be effective. The borough gaol, erected in 1764 at the expense of the corporation, is commodious, and contains separate wards for the classes of persons confined. The town is situated upon a large scale, but of late years it has declined, in consequence, it is said, of the competition of the manufacturing towns of Leicester and Nottinghamshire. The parish church, dedicated to St. Lawrence, is the diocease of Hereford, and the living, a rectory, and the patronage of the crown, is valued at 160 l. per annum.

The free grammar-school, founded by Edward VI., is conducted by a master and usher, whose salaries are respectively 30 l. and 25 l. a year. The school is placed within the borough, and able to read tolerably, or even upon application. The number of free scholars in 1828 was under thirty. Besides the grammar-school, there is a national school, connected with the church, which is supported, by ludlow, and consists of instruction to 100 girls and 150 boys. There are also two schools established by the Independents and Wesleyan Methodists, which are numerously attended. In 1831 the population of the borough was 2,453. Ludlow has returned two members to parliament continuously from the reign of Edward IV. (Boundary Reports: Municipal Corporation Reports, S. LUDLOW ROCKS. The upper part of the 'Silurian system' of Mr. Murchison is thus designated. They include the following three terms.

Upper Siltstone, a dark mass of laminated and porous sandstone, seldom acquiring considerable hardness and suggesting the notion of having been deposited in
a muddy sediment; from which circumstance it has also been called 'mudstone' by Mr. Murchison. Very rich in fossils.

A mystery Limestone.—A concretionary and polypliythritic limestone, of local occurrence and small thickness, merely separating the other terms. Many fossils.

Mythology: Bivalve, molluscous, shaly, and flaggy deposit, with a few calcareous nodules, yielding shells.

The limestone of Wenlock and Dudley lies below.

LUDLOW, EDMUND, was born at Maiden-Bradley in Wiltshire, 10th April, 1650. His father, Anthony Ludlow, a considerable landed proprietor in that county, and its representative in the Long Parliament, was an advocate of the democratic cause, which was likewise eagerly espoused by his son. Edmund Ludlow volunteered in Essex in 1642, and first engaged the king's forces at the battle of Edgehill (1642); from this time, with only occasional interruptions, he filled such stations, military or civil, as rendered him an important partisan. He denounced the misgovernment of the king, and sought the destruction of the court. He was one of the most active assistants in Col. Pride's purge, one of the foremost of the king's judges, and one of the most eager voters for the annihilation of the House of Peers. His independence rendered him obnoxious to Cromwell, who made him governor of Ire- land with a military command (1650), an expedition which must be acknowledged to have been most politic; for when Cromwell assumed the authority of Protector, Ludlow loudly protested against his elevation, and if he had been in England, she might have followed it. Consistently as a servant of an equal commonwealth, he refused, when he left Ireland, to yield Cromwell an unqualified submission. He was regarded with great jealousy on account of this refusal, and security was required, that he should not act in hostility to the government. His brother, Thomas Ludlow, privately furnished the security, and Ludlow retired into Essex, where he resided until Oliver Cromwell's death. He then resumed his public course; was active in parliament in the Com- missioners, and first printed his copy of the command of troops in Ireland. Accusations were afterwards brought against him by the council of officers; he was called an opponent of the interests of the army, and charged with high treason. In consequence of these charges he travelled to London, resumed his seat in parliament, and was offered to enter on his defence; but such was the state of confusion at this time, Monk and his forces being daily expected in London, that he was neither heard nor were the proceedings against him advanced any further. When the king was crowned at Oxford, Ludlow fled the country; and after narrowly escaping capture, landed at Dieppe, in September, 1660. From Dieppe he went to Switzerland, and having visited Geneva and Berne, resided principally at Vevey. In 1665, weary with exile, he returned to England, but, contrary to expectation, the publican were either forgotten or forgiven; but he was disappointed; an arrest was threatened, and he was compelled again to fly to Vevey, where he died in 1693, aged seventy-three years. His memoirs were written in Swit- zerland, and first printed two volumes on 1688.

LUDWIG, JOHANN (the Latinized form of his real name Leutholf), was born at Erfurt, the 15th June, 1624, and was educated at the university of Leyden, where he received his Ph.D. in 1653, on Oriental languages. After leaving Leyden, he remained for some time in Paris as tutor to the sons of the Swedish ambassador. In 1653 he removed to the court of the duke of Saxe-Gotha, in order to superintend the education of the Duke's children. During the latter part of his life he resided at Frankfort-on-the-Main, where he died on the 8th April, 1704.

Ludolph was one of the most eminent Oriental scholars of his age, and appears to have been the first European who acquired a knowledge of Abyssinian; namely, the Ethiopian language, of which he published a dictionary and grammar in 1698.

The most important of Ludolph's other works are: Historia Ethiopicæ, sive Descriptio Regni Habessiniarum, quod est Arabice 'Malee' Precyrii Johannes vocatur; Frankfort, 1681; 'Ad Historiam Asiaticam Commentarius,' Frankfort, 1695; (there is an English edition of the 'History of Ethiopia'); 'Relatio Nova de hodierno Habessinio statu ex India naper aliata,' Frankfort, 1693; 'Appendix Secunda ad Historiam Asiaticam,' Frankfort, 1694; 'Epistolae Ethiope ad urbem Edhabessiniam gentem scripta,' Frankfort, 1683; 'Epistola Samari- tanae Sichemitarum ad Ludolphum,' with a Latin translation and notes, 1698; and a translation of the Psalms into Ethiopic, Frankfort, 1699.

LUGANO. [TICINO.]

LUGO. [GALICIA.]

LUKE, ST., the Evangelist. Respecting the birth and early life of this evangelist we have no certain information; it is from the later history we learn something from his own work, the Acts of the Apostles. [APOSTLES, APTS. OF.] A know- ledge of the Greek language is displayed in his writings, especially in the introduction to his Gospel, which is written in elegant Greek. On the other hand, his lan- guage is filled with the religious expressions of the Jews, and he acquainted with the religious rites of the Jews, whose mode of computing time he follows. (Luke, xii ii; Acts, ii 1; Acts, xii 3, 4; xvi 6, 16, 52.) Hence it has been much disputed whether he was a Jew or a Gentile before he embraced Christianity. According to the later tradition of the Chaldean Church, he was a disciple of St. John, and from the dictation of the Apostle, he wrote the fourteenth book of the New Testament, the Acts of the Apostles, which is a narrative of the apostles, and of the origin and progress of the Christian religion, from the ascension of the Lord to the rise of the Church. (Luke, xxi 17, 18, and the ac- cussion which would have regarded him also, if he had not been, as a Jew or a Greek, as a Christian.) The passage from which Paul distinguishes Luke from other individuals 'who are of the circumcision,' which seems to show that Luke was not a Jew by birth; unless indeed the Luke here mentioned be another individual, which we have no reason to think the case. Of the date of the writing of this book, we know nothing. Cave and Mill have supposed that he was converted by Paul at Antioch; but they are not supported by any antient writer; nor is it likely that Luke would have passed over such an event in writing the Acts.

From the passage quoted above (Luke, xxi 17, 18), and from the testimony of Eusebius, Jerome, and other early writers, it appears that Luke was a physician. Another tradition makes him a painter, but this statement is generally allowable to deserve no credit; and the opinion of Grotius and some moderns, that he was a slave during part of his life, seems equally unfounded.

Luke's native country is unknown. Eusebius and Jerome say that he was a native of Antioch; but this statement is not found in Irenæus, Clement, Tertullian, or Origen, nor by any writer before the sixth century. Paul conjectured that this tradition arose from confounding the Evangelist with Lucian of Cyrene, who is mentioned as living at Antioch, in Acts, xiii. 1. Many writers however entertain the opinion, which is as old as the time of Origen, that this Lucian and the evangelist Luke were the same person. This conjecture is ably maintained by Mr. Charles Taylor, the editor of Calmet.

Some early writers, but of no very high authority, affirm that Luke was one of the seventy apostles of Christ, whose names are given in the Evangelists records. (Luke, x.) Others mention him as the companion of Cleopas in the journey to Emmaus, recorded in Luke, xxiv. 13. It is alleged that the mention of Cleopas, while his companion's name is without, is without any other evidence. But this narrative, and especially the notice of minute circumstances which none but an eye-witness could record, prove that the traveller was the Evangelist himself. Other reasons are adduced for believing him to have been in Jerusalem at this time. During the early part of his Gospel and the earlier chapters of the Acts we have every mark of being written by an eye-witness of the facts he narrates, and that all the appearances of Christ after his resurrection mentioned by him took place in the new disciples. To this it may be observed that we can only understand the preface to his Gospel (i. 1-4) as a distinct assertion that St. Luke was not an eye-witness himself, but that he derived his information from others who were eye-witnesses.
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In Acts, xi. 28, the Cambridge MS. has a various reading, 'and when we were gathered together, there stood up,' which if so read, would prove that Luke was connected with the Church at Antioch about a.d. 42; but this reading is not usually accounted of any great authority.

The first distinct mention of Luke in the New Testament is in Acts, xvi. 10, 11, where, in relating the vision which Paul saw at Troas, the writer suddenly begins to use the first person plural, whence it is inferred that Luke here joined the Apostle (about a.d. 53), whom he accompanied to Troas. It is sometimes surmised that Luke assisted Paul during Paul's journey to Athens and Corinth; for he drops the first person at ver. 17, and does not resume it till he relates Paul's return to Philippi (xv. 6). From this time it appears from the Acts that Luke was Paul's constant companion till his arrival at Rome (about a.d. 61 or 63), where he remained with the Apostle for some time, probably during Paul's first imprisonment. He is mentioned more than once in Paul's Epistles written during this period. (Col. iv. 14; 2 Tim. iv. 2; Philem. v. 24.)

Summarily he is brought up to the conclusion to whom praise is given in the churches,' mentioned in the Epistle to the Corinthians (viii. 18; xii. 18). Besides his intimacy with Paul, he is said by Irenaeus, Eusebius, Jerome, and other early writers, to have had a considerable acquaintance with the rest of the New Testament writers. They only mention Luke and Mark as disciples of the Apostles, as distinguished from John and Matthew, who were disciples of Christ.

Respecting the end of Luke's life, the tradition is, that after Paul's liberation from his first imprisonment, he retired to his home in Samaria, and there composed the Gospel and the Acts of the Apostles, and died at an advanced age (some say 80, others 84 years), probably by a natural death, as we have no mention of his martyrdom.

LUKE, ST. THE GOSPEL OF, is a narrative of the life of Jesus Christ, written by the evangelist Luke, and one of the canonical books of the New Testament.

The genuineness and authenticity of this Gospel are attested by the unanimous voice of the early Christian writers, and by other external evidences. Indeed the parallelism of Acts, i. 1, compared with this Gospel, l. 4. Michaelis has indeed objected to its canonical authority, and to that of St. Mark's Gospel also, chiefly on the ground that these books are not the production of Apostles. But such an argument cannot be admitted in opposition to the universal opinion of all the primitive Christians, nor have we any proof that inspiration was confined to the Apostles. The genuineness of parts of the Gospel has been called in question, especially of the 1st and 2nd chapters. But these chapters, being in all existing copies attended with a variety of external evidence which no internal difficulties can overthrow.

Many of the early writers state that St. Luke composed his Gospel under the superintendence of St. Paul. Irenaeus says that Luke put down in a book, as he was commanded, all that he had been allowed to hear of St. Paul. In all probability St. Luke would not neglect St. Paul's assistance in so important a work, but the idea that the Gospel is really St. Paul's, and that St. Luke was but little more than his amanuensis, is not sustained by any striking argument in the style of the two writers.

The most probable date of St. Luke's Gospel is about a.d. 63 or 64. It is closely connected with the Acts of the Apostles, and was probably written not long before that book. The Evangelist's writer was a physician; the phylact asserts that it was written fifteen years after Christ's ascension.

With respect to the place of its composition the common tradition is that it was written in Greece; Jerome says in Acts, iii. 22, that he wrote his Gospel to the Thessalonians, After a long residence in Achaia, where he resided some few years, wrote the Acts of the Apostles, and was probably written not long before that book. The Evangelist's writer was a physician; the phylact asserts that it was written fifteen years after Christ's ascension.

1. The interval preceding the public life of Jesus, chap. i. 1 to iv. 2.
3. Similar narratives, relating mostly to a journey of Christ to Jerusalem. The exact end of this division is doubtful.
4. The last days of Christ, his sufferings and death, and his resurrection and ascension.

The qualifications of St. Luke for the task he undertook were very high. He was an eye-witness of many of the events he relates; and assuredly he had excellent opportunities of gathering information from eye-witnesses. He assures us that he had 'accurately examined all matters from the very first,' being himself an eye-witness of many events in the first ten years after the ascension. The writer is borne out by many marks of care and accuracy which appear in his narrative. In both his works he is scrupulously minute with respect to dates and numbers (see for example Luke, iii. 1); and he has taken the trouble to import into his narratives with precision and accuracy the speeches. The examples of the latter are very numerous; of the former we have a striking instance in the letter of Lylias to Felix. ( Acts, xxix. 26.) It will not indeed appear improbable to an attentive reader of the evangelists, writing with the same eye-witness, that St. Luke's finger was not removed from those events at Rome, that he was in the habit of keeping a journal of events, which he used in composing his histories.

The controversy concerning the sources of this Gospel and that of St. Matthew and St. Mark, to which we shall refer under Gospels, l. 4, will largely affect the conclusions of this subject, and will be framed on the subject will be found in the Appendix to the fourth volume of Horne's 'Introduction.'


LULBA-ELF. [Bothnia.]

LULLY, RAYMUND, assumed the Enlightened Doctor, an enthusiastic and remarkable character of the thirteenth century, was born at Palma, in the island of Majorca, in 1234. In early life he followed his paternal profession of arms in the service of the king of Aragon, and abandoned himself to all the licentious of a soldier's life. Passing from extreme to extreme, Lully subsequently retired to a desert, where both the was to lead a life of solitude and meditation. Here he pretended to have had visions, and, among others, a manifestation of Christ on the cross, who called him to his service and the conversion of the Mahometans. Hereupon he divided all his property among the poor; and—after the death of the king of Aragon—entered upon a holy study, for the labours and duties of a missionary. Learning Arabic from a slave, he read in that language several philosophical works, the perusal of which, in all probability, suggested those new views of grammar and dialectic by means of which he hoped to reform and improve the language itself. Full of this idea he had a second vision of St. Saviour in the semblance of a fiery scrab, by whom he was expressly enjoined to commit to writing and to publish these views. The result was the controversial work, alphabetical in form, and consisting of 503 reasoning, but which his followers and admirers dignified by the title of the 'Great Art' ( Ars Magna). Having besought James of Aragon to establish a monastery in Majorca for the education of thirteen monks in the Arabic language and the duties of missionaries, he wrote his aupe of Pope Honorius IV. for similar institutions as his own mission. Receiving however little encouragement, he visited Paris and Genoa with the same design, and with similar success. From Genoa he crossed to Flanders, and there published the sequence of his dispute with a Mohammedan whom he sought to convert, but was saved by the intercession of an Arabian mfnfa, on the condition of quitting Africa for ever. This promise however he subsequently considered null and void upon him, and in vain seeking to excite sympathy and cooperation in his designs, he reassumed, unassisted, his enthusiastic enterprise. Proceeding first to Cyprus and thence to Africa,
he was nearly stoned to death; and being cast into prison, owed his liberty to the generosity of some Genoese merchants who paid the fine. Shortly after he returned a third time to Africa, where his zeal for conversion entailed upon him dreadful torments, from which he was a second time rescued by the generosity of the Genoese. The sufferings however to which he had been exposed were so great, that Lully died on his passage home, which he was just within sight of his native country, in the year 1315.

The 'Ars Magna Lulli, or the Lullian Art,' which found a few admirers, who styled themselves Lullists, after its inventor, and was subsequently revived and improved by the celebrated Cordeliers at Paris, is an attempt to give a formal arrangement of all ideas, with a view as well to facilitate instruction as to systematise knowledge. The means which this logical machine employs are:—1, letters (alphabetum artes), which stand for certain general terms common to all science;—2, figures, viz. triangles, squares, and circles, which indicate the relations of those general terms; and 3, sections (camera), in which the combinations of these ideas or terms are formed by the adjustment of the figures. In the circle, all the predicates are inscribed, and in the square and triangle the predicates are inscribed, and certain subjects on the circles. On the circle of subjects, the triangles of the predicates being so fixed as to move freely, every possible combination of ideas is supposed to be produced by the revolution, according to the number of the predicates inscribed, and the order in which they are placed. The choice of the letters inscribed on the margin of the circle. Hence arise definitions, axioms, and propositions, which vary infinitely according to the different application of general or particular predicates to particular or general subjects. As however the ideas which are selected for the fundamental nations of this mechanical logic are purely arbitrary, the knowledge to which it professes to lead must be narrow and limited, and at best it does but furnish a few laws of universal and necessary truths, which are not accepted as the invention, weak as it is, was founded on a feeling of the inadequacy of the dialectic of the schools, and as it furnished a weapon for its opponents, the name of Raymund Lully has been gratefully placed on the list of the reformers of science. In fact, one need not describe the manner in which his teaching modified the course of musical composition in desolate of all discouragements and disappointments.

The works of Lully have been edited by Salzinger, 'Raymond Lullii opera omnia,' in 10 vols. fol., Mayence, 1712; and LULLY (or LULLI), JEAN-BAPTISTE, the father of French dramatic music, was the son of a miller, and born at Florence in 1632. Showing in his infant years a strong propensity for music, a kind-hearted monk taught him the use of the guitar, an instrument then as common in Italy as it is now in Spain. Having attracted the notice of the Chevalier Guise, he was by that nobleman recommended to Mademoiselle de Montespenser, niece of Louis XIV., as a page, and sent to Paris in his fourteenth year. But his ready wit and talent found no favour in the eyes of the prince and his court, and his introduction into the fashionable world was a pleasing countenance. Instead therefore of becoming the bearer of the lady's fan, or perhaps of her confidential communications, he was placed in the kitchen, and commenced his life of activity in the humble capacity of maître d'hôtel. This degradation however did not much discourage him. He had previously acquired some knowledge of the violin, and now dedicated every spare moment to it. His devotion and industry were crowned with success. The report of his skill quickly ascended to the apartments of the princess, who placed him under an able master, and he soon was numbered among the king's twenty-four violins. He now aspired to the rank of composer, and having produced some airs which with ravished ears the princess pronounced to be in the style of the royal presence, commanded to perform himself the compositions which had excited so much pleasure, and from that moment the road to promotion and honour was opened to him. He was immediately placed at the head of a new band of violins, formed by the Cardinal Mazarin, founded, in 1669, the Académie Royale de Musique, an institution which has ever since continued to flourish. At the head of this, Lully, who had been appointed Surréendant de la Musique de la Chambre du Roi, was soon able to assemble with himself the admirable lyric poet, carried into effect the king's wishes to their utmost extent. His abilities and exertions were not, as is too usual, suffered to remain unrewarded: besides the glory of complete success, he acquired a handsome fortune, and was established to the honourable rank of Sieur de l'Académie. The proud Sénéchaux hesitated at admitting a marmionto into their number. Lully complained to the king, 'I have honoured them, not you,' said the monarch, 'by putting a man of genius among them.'

The reformers from a severe operation, Lully composed a Te Deum, and during a rehearsal of it, while beating the time to the band with his cane, he struck his foot a violent blow, which was followed by serious consequences, and having put himself into the hands of a quack, and was raised to the higher echelons of the musical world, in 1687, where, in the church of St. Péters, his family erected a splendid monument to his memory. In his last illness he was attended by a priest, who refused him the consolations of the church, unless he composed a mass in his memory. Lully gave in: he composed a mass on the beautiful and simple theme of the maker of the world, and the anthropophagi of his soul. The priest was satisfied, and Lully recovered.

Lulli was a shrewd man, possessing a considerable fund of humour, and many pleasant anecdotes are related of him. His companionable qualities led him too much into company, which he did not enjoy in a temperate manner, and he brought an accusation of indolence, which was imputed to the bad state of body produced by his habitual indulgences. As a composer, he is to be ranked among the first in his art. To him music is indebted for some of its greatest improvements, and his works display genius of a high order tempered by the soundest judgment. Even Handel acknowledged that he modelled his overtures after those of Lully; and our illustrious Purcell did not hesitate to profit by many hints afforded by the nineteen operas composed by the favourite of Louis le Grand.

LUMBRICUS. The genus Lumbricus of Linnaeus consisted not only of the Earth-worm, properly so called, but of an Intestinal worm or Entozoon (var. Intestinalis γ), the Ascariis lumbricoïdes, which so often infests children, and the Phisuno ophelis, or Deer-worm, which is not unfrequently requested by fishermen as bait for sea-fish. The genus, as he left it, comprised only the two species terrestris and marinus, and is arranged under his Vermes (Intestina), between Ascariis and Lumbresia.

Iamack and Cuvier both place the genus Lumbricus among the Annelidz.

The former makes the Echiurtes or Lumbricriat the second family of his Apod Annelida. He observes that they have in truth projecting bristles (or retrorse), but the retractile, have no sheath, nor are they furnished with pediform mamilla, serving as a case for bundles of retractive bristles, as in all the Annelida of Lamarc's two following orders, the Ascopoda and the Sipuncula. He assigns to his family a habitat moist earth and the mud or sand (vase) of the sea, and states that their branches are not known. The three genera placed by him under this family are Lumbricus, Thalaisema, and Curriscus. To these the author adds his opinion that Savigny's genus Ophelis ought to be arranged near Curriscus.
Cuvier makes the *Abranchiata* (Les Abranches) the third order of the Annelids, and the *Seigereian Abranchiata* (Abranches Scigerids, ou Pourvues de soies) the first order of that family. The order consists of the genera *Lumbricus* and *Natica*. It is to the first of these genera that we are to call the attention of the reader, and it is characterized by a long cylindrical body divided by wrinkles into a great number of rings, and by a mouth without teeth. Cuvier remarks that the *Lumbrici* ought to be subdivided; and Savigny has accordingly divided the Genera *Entereor, Hypoagamon*, and *Citellio*. MM. Audouin and Milno Edwards distinguish also the genus *Troponia*.

Of these *Entereor* has upon each ring four pairs of small bristle-like processes, eight in all. To *Citellio* is stated to have two bristle-like processes only on each ring.

*Hypogamos* has, besides the other bristle-like processes, one on the back of each ring. (This form is noticed as being American only.)

Savigny described each ring four bundles of short bristle-like processes, and at the anterior extremity a great number of long and brilliant bristle-like processes which surround the mouth.

Savigny described upwards of twenty species, which he considers to be distinct, and to have been confounded previously under the name of *Lumbrici terrestres*. M. Morren, in his *Traite sur la Nature et l'Anatomie de Lumbrici*, (Brussels, 1829), appears to have given a table of the number of species described by Savigny and others, and inclines to the opinion that they are merely varieties. M. Milne Edwards (edit. of Lamarck's *Animaux sans Vertébres*, 1838) considers the characters on which Savigny relied as distinctions for dividing the group into the three genera as of little importance.

We take as an example the common *Earth-worm* (*Lumbrici terrestres de Linneus*).

**Organization.**

Eternally the Earth-worm presents a body composed of numerous narrow rings closely approximated to each other; at about one-third of their length may be seen, particularly at the season of reproduction, the *citellum*, which becomes at that time highly important and serves as the principal excretory organ. The colour of the body is reddish or bluish, and of a shining aspect, and the animal has the power of secreting a viscid substance, which forms a sort of protecting sheath to its body, and greatly facilitates its progress through the earth. The animal is viviparous and unprovided with any tentacles, branches, or cirri.

**Respiratory System.** The generally received opinion is that the blood of the Earth-worms is aerated by means of lateral series of small pyriform vesicles, analogous to the branchiæ of *Laece*. [Leech, vol. xiii, p. 382.] and opening externally by very minute pores.

**Digestive System.**—The mouth consists of two lips without tentacles or armature of any description; but the upper lip is elongated and probosciform. The oesophagus, which is a small membranous canal, is continued straight down for half an inch, and ends in a dilated bag or reservoir, to which succeeds a muscular stomach or gizzard, disposed in the form of a ring. The intestine is constricted at each segment of the animal by a series of ligaments or partitions, connecting it to the parietes of the body, and swells out the intermediate spaces, when distended by the particles of food.

(See the *Catalogue of the Physiological Series of Comparative Anatomy* in the *Museum of the Royal College of Surgeons*.)

**Nervous System.**—The nervous system of the Earth-worm consists of a series of small ganglions close to each other. In the Museum of the College of Surgeons is a preparation, No. 2029, of the *Nervous System*. It is an Earth-worm (*Lumbrici terrestres, Linne*), with the ventral parietes of the abdomen removed to show the nervous chords, their ganglions, and lateral branches. The divergence of the two main lateral chords, in order to pass to the dorsal aspect of the oesophagus, is clearly shown. (Cut., vol. xiii, part 1.)

**Generative System.**—All-tentacled, or with male organs so dissected as to fecundate the ov. of a different individual. (Owen.) Cuvier was of opinion that they were hermaphrodites, but that it was possible that their junction only served to excite each other to fecundate themselves. It has been doubted whether these animals are oviparous, oviparous, or viviparous. M. Montgèie and Sir Everard Home supposed them to be viviparous. M. Leou Dufour (1825 and 1831) asserts that they are oviparous, which opinion he is joined by M. Dugès (1829), who believes that the living hermaphrodite animals which M. Montgèie took for young *Lucernae* were intestinal worms only. M. Morren, in the work already alluded to (1829), states that the mode of reproduction is by means of the male appendages, and that the eggs are hatched by the male, as appears from the nests where they are hatched, according to Cuvier, in the year of their making their exit from the anus. M. Dufour, on the contrary, says that they produce eggs analogous to those of the leeches. In the Museum of the College of Surgeons (dial. No. 2294), the anterior bar of the *Earth-worm* (*Lumbrici terrestres, Linne*). is shown with the parietes of the body slit open along the back, and the two halves divaricated, so as to expose the alimentary canals, testes, and ovaries. Four portions of black blood intestine for the blood vessels, which are the small white globular bodies immediately exterior to the bristles, two on each side. Ovaries are the larger oval bodies, of a less pure white than the testes, in the interspace between the bristles. They are placed more laterally in the body, and the testes are placed more posteriorly. Each of these essential organs of reproduction has a separate external aperture, which is a minute; and impregnation takes place by the apposition of the genital outlets of one individual to those of another, without intromission, as in the leech. In this Earth-worms are preserved in a succeeding series (Owen, Cat., vol. iv.), Nos. 2295 and 2296 are also preparations illustrative of the organs of generation in these animals.

**Organs of Progression.**—Earth-worms creep at a good pace, by means of muscular contraction and distraction of the rings, on the rings, which carry on their underside the bristle-like processes above mentioned: these last operate as feet. The power of elongation is considerable, and the anterior part of the animal acts as a sort of sail in passing through the earth. The colour of the Earth-worm, as far as relates to an appearance above the surface of the ground, may be considered almost a nocturnal animal. In the night seasons and at early morning hundreds may be seen, though not one has been found dissected and disturbed in the act of pouring its liquids into its holes, is to be found moving about in the day. The power of reproducing parts after mutilation, as most must have noticed, very great in this animal.

**Utility to Man.**—The worm-casts, which so much annoys the gardener, is at the same time of great utility as a rich and ornamental fertilizer, and without injury to the roots of plants. The castings are rich, granulated, and of a good quality for manure. The latter is very necessary for all kind of gravelly country, where, although in a ploughed field a large proportion of the soil consists of small stones, yet an old pasture-land not a single pebble will be found with some inches of the surface. The author's attention was first directed to these Earth-worms by Mr. S. Waterhouse, of Maxey and Wisbech, who stated that in the fields above mentioned the land consisted of good pasture-land, which had been limed, without having been ploughed, about twelve years and a half before; the turf was about half an inch thick; and two inches and a half beneath it was a layer or some accumulated heaps of the lime, forming, at an equal depth,
that it is probable that every particle of earth in old pasture-land has passed through the intestines of worms, and hence that in some senses the term "animal mould" would be more appropriate than "true mould." The agriculturist, in ploughing the ground, follows a method as strictly natural; and he only imitates in a rude manner, without being able either to bury the pebbles or to sift the fine from the coarse soil, the work which nature is daily performing upon the field.

Since this paper was read Mr. Darwin has received from Staffordshire the following statements:—1. In the spring of 1833 a boggy field was so thickly covered with sand that the surface appeared of a red colour, but the sand was now overlaid by earth, and the farmers of the district no less than eighty years ago a field was mauvoured with marl, and it has been since ploughed, but it is not known at what exact period. An imperfect layer of the marl now exists at a depth, very carefully measured from the surface, of twelve inches in some places and fourteen in others, the difference corresponding to the top and hollows of the ridges or butts. It is certain that the marl was buried before the field was ploughed, because the fragments are not scattered through the marl, but constitute in a layer which is horizontal, and therefore not parallel to the undulations of the ploughed surface. No plough, moreover, could reach the marl in its present position, as the furrows in this neighbourhood are never more than eight inches in depth. In the above paper it is stated that a bed of marl eighteen inches thick accumulated in fifteen years; and in this case, within eighty years (that is, on the supposition, rendered probable from the agricultural state of this part of the country, that the field had never before been marl'd) the Earth-worms have worked a bed of earth averaging thirteen inches in thickness. (Proceedings of the Geological Society of London, vol. ii., 1837-8.)

LUNACY. Amongst the patents of utility there is perhaps the most accurate definition of the present legal meaning of this term that can be given. Formerly a distinction was made between lunatics and idiots: a lunatic being described as one who has a defect of the understanding, and an idiot, as one who has had no understanding from his nativity. The distinction between these two classes of persons of unsound mind also produced some important differences in the management of their property. These have now fallen into disuse, and it is thought will be sufficient for the purposes of this article to consider the consequences to the individual of unsoundness of mind generally. Strictly speaking, perhaps a lunatic is one who has lucid intervals, but this distinction may also at the present day be disregarded.

Persons of unsound mind may inherit or succeed to land or personal property either by representation, devise, or bequest, but they cannot be executors or administrators, or make a will, or bind themselves by contract. It is stated in the Encyclopaedia Britannica (art. Lunacy) that the "laws as to the management of the property of persons of unsound mind are voidable, but not actually void; this however perhaps needs some qualification, for a bargain and sale, or surrender, &c., and also personal contracts made or entered into by such persons, are actually void as against their heirs or other representatives, though it is true a feoffment with livery of seisin was voidable only. [Convynences]."

A person of unsound mind, though he afterwards be restored to reason, is not permitted to allege his own insanity for the purpose of lifting a charge of dethel on himself, or plead his own disability (1 Vesey, 590), unless he has been imposed upon in consequence of his mental incapacity (2 Carr. & P., 178; 3 Carr. & P., 1:30; and an action will lie against a lunatic upon his contract for a consideration of value. He is entitled to a jury for information upon this subject to 1 Blackst. Comm., 291; 1 Fosb. Eq., b. 1, c. 2; 2 Sugd. Pem., 299-6; 5 Barn. & C., 170; Moody & M., 105, 6. Acts done during a lucid interval are valid, but the burden of proving the lucid interval is on the party who was sane and conscious of his proceedings, lies upon the person ascertaining this fact. The marriage of a person of unsound mind, except it be solemnized during a lucid interval, is void. The duty of the party to the satisfaction of which persons of unsound mind are placed with respect to crimes committed by them, as well as the degree of unsoundness of mind which should be considered as depriving the party of that amount
of self-control which constitutes him a responsible agent, and in a painful state of uncertainty. As a general rule it may however be laid down that where unsoundness of mind, of such a nature as to render the party incompetent to exercise any self-control, is established, criminal punishment will not be inflicted, but that he will be kept in safe custody during the pleasure of the crown (39 & 40 Geo. III. c. 94, and 1 & 2 Vic. c. 14). On the subject of criminal responsibility, and what constitutes unsoundness of mind in a legal point of view, the reader is referred to the various treatises of jurists and jurisprudents. To Dr. Ray, lately published at Boston in the United States: and also generally to Dr. Haslam's "Observations on Madness and Maniacal," "Medical Jurisprudence as it relates to Insanity," 'Illustrations of Madness,' and his other works. In the latter must particularly be used in the language of the mind is consequently impaired. The decay of intellect at an old age is first manifested in the loss of memory of persons, things, and dates, and particularly with respect to recent impressions. But it is not the mere lapse of years but the sensations, and especially of the king himself. Since the dissolution of the Court of Wards, the lord chancellor has been specially appointed to exercise this power. [CHANCELLOR.] The method of proving a person to be of unsound mind, for the purpose of obtaining a mandate, is usually to lay the case before the king. In some cases upon a partial interview also with the alleged lunatic, when such a query is presented, he is called to be examined, and his liberality to the property. Confidence should not be placed in depositions or evidence founded on short and inattentive examinations.

Sometimes the madman conceals his disease, and with such remarkable cunning and dissimulation that the detection of it is very difficult: this is more particularly the case when the insanity consists in some hallucination; and here, unless the nature of the delusion be known, it will often be in vain to attempt to elucidate by questions any proof of unsoundness of mind. Those who are conscious of the existence of such delusions will reason correctly on ordinary and trivial points, provided these do not become associated with the prevailing notions which constitute their disease.

When insanity is urged as the ground of non-responsibility, it has been erroneously held that the main point to be ascertained is, whether the individual has or had 'a sense of good and evil,' or right and wrong. But this, though the doctrine of the English law, is found incapable of practical application; and the records of trials of this kind show that the guide to the decision has generally been the proof, or absence of proof, that insanity of some kind existed at the time of the act, although before and after it the power of reasoning and the knowledge of the law might be completely preserved. The judgment of Hatfield for shooting at George III, Erskine argued that the existence of a delusion in the mind absolves from criminal responsibility, if it be shown that the delusion and criminal act were connected; and on this principle Hatfield was acquitted. But could it be possible, however, who shot Mr. Percival under an equally powerful delusion, in consequence of the greater excitement in the public mind occasioned by the result of the insane act, was convicted and executed. In many instances homicide has been attempted or committed by an insane person, but by a method impalpable to kill. Here there is generally evidence of the feelings and propensities of the individual having been previously disorderly, of his being in fact the subject of moral insanity [INSANITY], and judgment in such cases is aided by the absence of proofs to the act. Where the general conduct of the prisoner has been such as to indicate unsoundness of mind, even though considerable contrivance has accompanied the act, or where there is evidence of his having been the subject of an irresistible impulse to kill, it is becoming now the practice to find a verdict of acquittal, in opposition to the former authorities, who confined the exemption from responsibility on the ground of insanity within very narrow limits.

A lunatic is, according to law, responsible for acts committed during lucid intervals, but by which he is sometime said to have stood; however, not mere remissions of the violence of the disease, but periods during which the mind remains as perfectly sane condition. In forming an opinion concerning such lucid intervals, it is to be remembered that the remissions of the disorders of the mind, and the duration before it can be thence concluded that the mind is perfectly sane; and that lunatics, when apparently convalescent, are subject to sudden and violent paroxysms.

One of the most difficult points to be determined as well as to take care that the patient is not usefully employed, the mind is confessedly impaired. The decay of intellect at an old age is first manifested in the loss of memory of persons, things, and dates, and particularly with respect to recent impressions. But it is not the mere lapse of years but the sensations, and especially of the king himself. Since the dissolution of the Court of Wards, the lord chancellor has been specially appointed to exercise this power. [CHANCELLOR.] The method of proving a person to be of unsound mind, for the purpose of obtaining a mandate, is usually to lay the case before the king. In some cases upon a partial interview also with the alleged lunatic, when such a query is presented, he is called to be examined, and his liberality to the property. Confidence should not be placed in depositions or evidence founded on short and inattentive examinations.

Sometimes the madman conceals his disease, and with such remarkable cunning and dissimulation that the detection of it is very difficult: this is more particularly the case when the insanity consists in some hallucination; and here, unless the nature of the delusion be known, it will often be in vain to attempt to elucidate by questions any proof of unsoundness of mind. Those who are conscious of the existence of such delusions will reason correctly on ordinary and trivial points, provided these do not become associated with the prevailing notions which constitute their disease.

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LUND

 powers of granting licences and appointing visitors are delegated to the justices in general or quarter sessions; but notices of all such licences are forwarded to the office of the metropolitan commissioners.

 The influence of these houses has been kept up by house kept for the reception of the insane without a certificate signed by two medical men not interested in the profits of the establishment, who must have separately visited and examined the patient within seven days before his admission into the asylum or, upon satisfactory reasons shown, the certificate may have the signature of one medical man only, but then it must be signed by a second within seven days after the patient’s admission.

 A variety of statutes have been passed for the management of lunatic asylum, for the protection of unwise and of unwise and of sound mind, and of county lunatic asylums for the maintenance of pauper and criminal lunatics, the last of which is 3 & 4 Will. IV. c. 44, continued by 1 & 2 Vict. c. 73.

 (For the treatment of lunacies see INSANITY.)

 LUND, TUNION, the time between two new moons.

 LUND, a town in Sweden, in the province of Scane and Land of Malmoth, in 55° 40’ N. lat. and 13° 10’ E. long, about seven miles from the Sound. It is situated in the centre of an extensive plain of beat length which produces richer crops of wheat than any other district of Sweden; tobacco and madder are also raised in it. The streets are straight and wide, and the houses commonly of two floors, and many of them surrounded by orchards and gardens. There is a magnificent and magnificent building of stone. Lund is the seat of a bishop, and has a semi-university. Between the cathedral and the university buildings is a space planted with lime-trees, and kept in good order. The university consists in 1663, constant of most of two extensive edifices, the old and new one. The former, which is the larger, is three stories high, and has a tower. In the ground-floor is the library, which has 40,000 volumes, among which are a few valuable manuscripts. In the third floor is the lecture-room for mathematics, and the collection of instruments. The observatory is in the tower. The new university building contains the meeting-rooms of the senate and of the faculties, and likewise the archives; in the second floor are the collections of natural history. The chemical laboratory is in a separate building. There is a botanical garden belonging to the university. In the building att. to the botany. In the upper floor the lecture-room for anatomy, with numerous preparations.

 Near the botanical garden is a plantation called Paradylekka, in which foreign forest-trees are grown for sale, and transplanted to other parts of the kingdom. The Wasa in Scane to Lund, was founded in 1683, according to the census of 1825, is nearly 4000, and it is supposed that it now exceeds 4500 souls. An active commerce in the produce of the adjacent country is carried on between Lund and Malmo. (Forster’s Statistics of Sweden; Schubert, Keine durch Schonen, Norwegen, &c.)

 LUNDIN, SIR ALAN, of Lundin, or Lundia, in the shire of Forfar, was son and heir of Thomas de Lundin, who held the office of king’s hostarius, or door-ward, and was lord of the manor of Lundin; during his life was lord of the manor of King Alexander II. with Joanna of England. Sir Alan early married the bastard daughter of this king Alexander, and before the year 1233 he had succeeded his father in the office of Durward. Before this time he also had made a marriage with his father’s munificence to the church, and in the spirit of the age had founded a Dominican convent at Montrose. He was a forward impetuous character, and for twelve years assumed without any authority the title of earl of Athol. In 1243 he was appointed lord-jusiciar of Scotland, and continued for about six years, when he was removed under circumstances which strongly mark his austerity and ambition. In 1249 he endeavoured to obstruct the coronation of the infant son of king Alexander II.; and the next year he resided on Robert, abbot of Dumfrieland, and chancellor of the kingdom, to make a motion in council to legitimate his wife, so that on failure of issue of the king’s body she and her heirs might succeed to the throne. For this act the king conceived so great a displeasure that he immediately turned the chancellor out of office, and soon after the justice likewise. The latter joined King Henry III. in France, and served in his army; and at length, in 1253, was named to the house of lord-justice, and so continued till 1257, when he was again removed for the powerful Conyn. He died in 1275, leaving three daughters, who carried his great possessions with his blood into other families. Forord calls him "vir dama et strenuum in armis, et regni et regno fidicissimus."

 LUNDY ISLAND. [Devonshire.] LUNE, LUNULE, the figure formed on a sphere or on a plane by two arcs of circles which enclose a space. [Norwichshire; Sussex.]

 LÜNEBURG is an ancient allodium of the house of Brunswick, which, in the year 1233, was raised, together with Brunswick, to the rank of a duchy, and was subsequently separated, and formed a distinct principality. Its boundaries are taking the more by the Elbe, which separates it from Holstein, Hamburg, and Lauenburg; on the north-east by Markenburger-Schwerin and the Prussian province of Brandenburg; on the south-west by the Rhine and Weser; on the south by Brunswick and Hildesheim; and on the west by Calenberg. The shape is near a square, and the area 4980 square miles. The population, according to the latest census, is 306,146. The country is on the whole an im-}

 LUNEBURG (River). [Lancashire.]

 i, the city of Lübeck, which was ceded to Prussia, but was indemnified by the inclusion of that part of Lauenburg which was retained by Hanover. It is now a landdrostei, or province, of the kingdom of Hanover; situated between the Elbe and the Weser, and magnificent building of stone. Lund is the seat of a bishop, and has a university. Between the cathedral and the university buildings is a space planted with lime-trees, and kept in good order. The university consists in 1663, constant of most of two extensive edifices, the old and new one. The former, which is the larger, is three stories high, and has a tower. In the ground-floor is the library, which has 40,000 volumes, among which are a few valuable manuscripts. In the third floor is the lecture-room for mathematics, and the collection of instruments. The observatory is in the tower. The new university building contains the meeting-rooms of the senate and of the faculties, and likewise the archives; in the second floor are the collections of natural history. The chemical laboratory is in a separate building. There is a botanical garden belonging to the university. In the building att. to the botany. In the upper floor the lecture-room for anatomy, with numerous preparations.

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timber for building as well as fuel, for which there is a good sale. Gypsum abounds in many places; and in the vicinity of the gypsum are the celebrated saline springs. Near Lichow there is a district called Drawin, or Werndlack, the inhabitants of which, in their language and manners, are foreigners; and the descent from the trade road for commerce between Hamburg and the interior of Germany passes through this principality. The staple town is Lüneburg, and the inhabitants expect to derive great advantages from the privilege just granted to the city by his majesty, which opens to them six churches, the trade from Hamburg by way of Harburg and Celle, from Bremen by way of Celle, and from Lübeck by way of Lüneburg, is not so considerable. There are no manufactures, properly so called, except at Lüneburg, Harburg, and Celle. Spinning and weaving, and stocking-knitting are pretty general among the country-people, who likewise make a quantity of wooden wares. In general the inhabitants are in pretty easy circumstances.

**LÜNEBURG**, the capital, lying in 53° 15' N. lat. and 10° 13' E. long., is situated on the Elbe, which is here navigable about fifteen miles above its junction with the Elbe, and has 13,000 inhabitants. At the western end is the Kalkberg, the highest mountain in the country (about 350 feet high), on which the convent of St. Michael and some fortifications were built in the eighteenth century. Present 50,000 tons of lime are annually procured from the Kalkberg, and exported to Hamburg and Holland. Lüneburg was formerly surrounded with walls, but the fortifications are now dismantled. The principal buildings and public institutions are the market place, the gymnasium, the convent of St. Michael's, and in the vaults of which are the monuments of the ancient princes, the convent of St. Michael, with a Latin school, the town-hall, the arsenal, an hospital, &c. The inhabitants carry on a considerable trade in the products of the country, such as hemp, wine, masts, lind, honey, wax, flax, horses, of which 70,000 are annually brought hither to market, &c. There are very productive salt-works in a part of the city which is separated from the rest by a wall, and is called by the name of the spring from which the salt is obtained. The salt is very strong, being perfectly saturated, and yields 200,000 cwt. annually, and would yield much more. We have already spoken of the transit trade from Hamburg to the interior. There are manufactures of soap, snuff, playing-cards, tobacco, wines and the Like, paper-mill, &c. Of the other towns in the principality the most important are Celle (otherwise Zell), a tolerably well-built town, at the junction of the Ouse and the Aller, the seat of the supreme court of appeal; it has a gymnasium, a national school, with 1200 pupils, a magistracy of six clerks, and many other public buildings and institutions. The suburbs are very extensive. On the west side of the town is a palace, with a magnificent chapel, and in the French garden is the monument of Matilda, queen of Denmark, since 1746, the property of the crown of England. On the opposite side, there is a small church, with some manufactories of linen, woolens, and stockings, a paper-mill, tanneries, wax-bleaching, sugar-refinery, &c. and a great trade in timber. Ueilen in the Heath, on the Ilmenau, has 3000 inhabitants, who cultivate the best flax, and have manufactories of woolen cloth, camlet, and starch.

**LUNEL, L'HEAUT.**

**LUNETTE, in fortification, is a work similar to a ravelin, or demi-lune, but generally of smaller dimensions. These works have been placed in the retired angles between the ditches of a bastion and of the collateral ravelin, but they are now usually considered as advanced works, and are placed in front of those just mentioned.**

The type is the same as that of the redoubt Y in the plan at the end of the article FORTIFICATION; and its positions may be understood by conceiving such works to be placed beyond the glacis S S on lines passing through P P, X X, and R R, and produced. Each lunette is protected in front by a ditch, beyond which is a covered way, as usual.

The best disposition for a series of such works is that in which they are alternately more and less advanced beyond the fortresses; since then they afford a reciprocal defence by the crossing fires which may be kept up from the nearest faces of every salient and retired lunette. And should the besiegers succeed in carrying their approaches up the glacis of the latter, the artillery on the flanks of the two more salient and collateral lunettes would effectually prevent them from forming a battery on its crest to breach the work. The operations against any one retired lunette must consequently be postponed till the two collateral lunettes are taken; whereas had all been equally advanced, the work might have been breached and assaulted at the same time.

To give the more advanced lunettes, which are generally those placed beyond the ravelins, all the advantages of which they are susceptible, the magistral lines of their forts should be continued to the lunettes, and a line of fire, whose base is a line joining the faces of the two collaterals, bastions at points about twenty or thirty yards from the flanked angles; for thus the earthen parapets at the salients and the lunette will not be easily destroyed by ram. The salients of the lunette and the ditch bordering on them being defended by two or more pieces of artillery conveniently placed on the faces of the bastions. The ditches of the retired lunettes should be in like manner be defended by artillery placed on the faces of the collateral ravelins; and the magistral lines of their faces should consequently be directed towards such ravelins. In a front of fortification of the ordinary extent (24 yards) this rule for placing the advanced lunette will persist; but as covered-ways being in the latter to be defended by a fire of musketry from the retired lunette, I have to add, FORTIFICATION, and from the covered-way before the bastions; and, that such fire may grasp the bottom of the ditch of the lunette, this ditch ought to be in an inclined plane with the flank of the bastion, the ditch so formed be too shallow to fulfil its end, viz., that of being an obstacle to the enemy in his attempt to assault the lunette, it would be necessary to make it deeper and that it might not thus become a trench by which the enemy could be protected from the fire of the defenders, and should communicate with water, by which it might be filled previously to the expected assault.

The rampart of a lunette differs in no respect from that of other works; it should have the same relief, or height above the glacis below, as the other works of the same line; and as in the latter work, the fire of artillery should be capable of being directed against the trenches of the enemy at the foot of the glacis, over the heads of the defenders on the parapet of the covered-way. Its escarp should be revetted with brick or stone, in order that the enemy may be compelled to form a breach in it by artillery, or by mine, previously to making an assault; or at least that the attack be made as a formidable way to a breach might be a process of difficulty and danger. To approach, or ground in the interior, should be high enough, and the glacis broad enough, to give the besieging forces the power of scaling-ladders; this part should be further protected by a loop-holed wall, or a line of palisades; it should be seen and defended from some collateral work, and an open embrasure, or embrasure gallery, for communications should lead from the general embrasures in the arms in its rear. The advanced covered-way should pass from all the lunettes, and it might terminate at the two extremities on inaccessible ground, or in the general covered-way of the works.

**LUNEVILLE, a town in France, capital of an arrondissement in the department of Meurthe, 186 miles from Paris in a direct line east by south, or 221 miles by road. In the diocese of Meurthe. This place appears to have been a mere village before the eleventh century. It afterwards became a fortified town and the capital of a county. In the war between Charles le Temeraire, duke of Bourbon, and René II, duke of Lorraine, it was taken by the French, and kept up in 1632 was taken by the French, who demolished the fortresses of Leopold, duke of Lorraine, rebuilt the castle at the commencement of the last century, and made it his residence.**
A fire destroyed part of this castle, a.d. 1720, but it was promptly restored. A second fire (a.d. 1755) destroyed one of the wings, which has been rebuilt of late years. This castle was the usual residence of Stanislaus, ex-king of Poland and duke of Lorraine; it now serves as a cavalry barracks, and is capable of accommodating 600 horse. The park and gardens have become public walks, and in the 'Champ de Mars,' or exercise-ground, a cavalry exercise camp is formed every year. There is a covered riding-school for cavalry, 320 feet long by 85 wide, without pillars to support the roof, and capable of accommodating 600 horse. The town was much improved by the dukes Leopold and Stanislaus. The streets are for the most part wide and straight. There are three suburbs, those of Nanci, of Villers, and of Alaisce. There are two bridges over the Vezouze, on which the town stands; and near the town are two others over the Meurthe, into which the Vezouze falls just below Lunéville. The parish church is a modern building of elegant architecture; the portal however is overthrown with figures above the portal, crowned with statues, the one of St. Peter, the other of Michael the archangel casting down Satan. The Place Neuve (New Square) is ornamented with handsome buildings. The population of Lunéville in 1831 was 13,232, and for the whole town in 1836 it was 12,799 for the commune. The inhabitants are engaged in spinning cotton and woolen yarn, weaving woolen-cloth and cotton goods; manufacturing silk, cotton, and worsted goods; in making embroidery, pins, hats, earthenware, &c. There are several breweries. The principal trade is in the above articles; also in grain, wine, brandy, flax, hemp, wood, and fruit grown in the gardens round the town. There are six yearly fairs. There are several government hospitals; the air is no longer believed to have any curative or preventive influence. It was the residence of the dukes Leopold and Stanislaus, who disgusted with the world, retired to this spot and died. The building cost £20,000, and there are 400,000 vols. There is a theatre. The annuance of Lunéville has an area of 466 square miles, and comprehends five cantons, and 145 communes. The population in 1831 was 62,851; in 1836 it was 65,695.

LUNGS. [RESPIRATION.]

LUNG DISEASES OF THE. The highly organized structure of the lungs and the incessant exercise of their important function, frequently under noxious circumstances, frequently, in the case of any body. Exposure to damp and cold, sudden atmospheric changes and transitions of temperature, want of proper nourishment, inattention to personal cleanliness, and some of the mechanical employments in which we are engaged, are the causes of the lungs being pregnant with minute particles of foreign substances, such as steel, wool, &c., may be considered as amongst the chief exciting causes of this extensively prevailing class of diseases. The subject may be conveniently divided into those affections which are acute and rapid in their progress, and those in which their course is slower and the changes of structure more gradually effected.

In inflammation of the lungs (pneumonia, peripneumonia) the air-cells and parenchymatous structure of the organ are the seat of the disease. This affection is generally preceded in a greater or less degree by shivering and such other febrile symptoms as commonly usher in any febrile attack. Soon afterwards pain and a sense of oppression become the hall-mark of the disease, and the patient is rendered restless and short of breath. The pain is sometimes severe, sometimes it is described as of a dull and obscure kind and deeply seated. If the pleurs, or investing membrane of the lungs, participate in the affection it is generally severe. At first there is little or no alteration in the organ; then there is a suffusion over the membranes, and the spuma acquire a reddish or rusty colour from the admixture of small quantities of blood. They also possess an unusual viscidity and tenacity, sometimes to such a degree that the vesicles to which they are adherent may be inverted without their falling out; they also contain numerous minute bubbles of air, which are prevented from escaping by the consistency of the secretion.

If the disease continue unchecked, the difficulty of breathing becomes much greater, and the respirations, which in the natural state are about 20 in a minute, increase in frequency to about 40 or 60. Sometimes there is little cough throughout the disease, but most commonly it increases as the disease advances, and the spuma become more deeply tinged with blood. The features subsequently assume a livid appearance; the breathing gets more oppressed; exhaustion follows; the perspiration loses its rusty colour and unusual tenacity, the urine becomes turbid, and sometimes there is diarrhoea. Andral and other authors are of opinion that improvement is most likely to take place at certain times—critical days. The diagnosis of this disease has received most important assistance from auscultation, and in many instances it has been detected by its aid, where formerly it would have been overlooked. The assistance afforded by the auscultatory signs will perhaps be better understood if we defer them until we have spoken of the changes of structure in the lungs occasioned by inflammation.

In the early stage of pneumonia the inflamed part acquires an unnatural density and heaviness from the unusual accumulation of blood in it, and if a portion of lung so circumstanced be auscultated over, the sound of the finger on its surface leaves an indentation which is not filled up, as would immediately be the case in a healthy state of the part. When it is cut into, a bloody frothy fluid exudes from the apex of the lung, and the surfaces present a deep blood-red colour, and a portion at least has retained a somewhat resembles liver, it has been termed the stage of hepatisation. When the disease has proceeded still further, suppuration may be found to have taken place. Put is then observed to be effused throughout the structure of the diseased part, red, yellow, yellowish green, straw colour, and the mass is rendered soft and easily broken. Suppuration in the form of abscess very rarely occurs as a consequence of pneumonia. Laennec is of opinion that death most probably takes place before the changes can have proceeded to that extent.

Auscultatory Signs.—In that stage of the disease in which there is only an accumulation of blood in the part, and whilst air is still admitted, the respiratory murmur is easily heard and readily perceived with the aid of a stethoscope, but it is attended with a crackling sound which resembles that produced by rubbing a portion of hair between the finger and thumb near the ear, or by throwing salt into the fire; this is commonly called crepitus rattli, or crepitiation of the lungs. A clear sound is also heard on percussing the chest.

If the disease has proceeded to the stage of hepatisation, the lung being in that part solid and impervious to air, percussion will afford only a dull sound without resonance, and the murmurs attendant on respiration will be altogether wanting. Should a large bronchial tube pass near the hepatised portion, the resonance of the voice in the bronchus will be heard more distinctly than usual, on account of the solid being a better conductor of sound than the healthy lung.

When suppuration has taken place, the patient's respiration is also dull, and the natural respiratory murmur is wanting, but in its stead a loud gurgling noise is heard, resembling that produced by air passing through soap-suds. On the chest there is perhaps occasioned by pus escaping into the larger air-tubes.

Treatment.—The treatment of inflammation of the lungs must be conducted on the same general principles as inflammation occurring in any other part. The important nature of the lungs to respiration, and the weakness sometimes to a very large amount, and on repeated occasions. Antimonials and mercury are also highly useful in this affection.

Induration is sometimes confined to the bronchial tubes, and is called bronchitis; it may also co-exist with pneumonia. [BRONCHITIS.]

Mortification or gangrene of the lungs, though sometimes occurring as a result of pneumonia, most frequently takes place as an independent affection. Great fevers of the breath, with anexpectoration of dark-brown, greenish,
feud spuita, excessive doliety, and a cadaverous expression of countenance, are the symptoms by which it is indicated.

After death portions of lung are found in a partially decomposed state, of a dark brown or dirty greenish appearance, with a putrid smell, and occasionally under favourable circumstances, the mortified parts have been separated and removed by expectoration, and the patients restored to health; but this is not a result which can commonly be looked for. It has been known to occur in croupous, and sometimes in the consequence of its being an agens in croupous, and of long exposure to the noxious effluvia attendant upon such occupations.

Hemoptysis; Splitting of Blood.—Expectoration of blood may occur either by exhalation from the mucous membrane of the trachea or from the lesion of a blood vessel. It generally occurs in early life, from the age of fifteen to thirty-five, and in the former instance may be dependent upon local congestion. This determination of blood to the lungs may be occasioned by the sudden suppression of some natural or accidental discharge from other parts, as in suppressed or impaired menstruation, or the arrest of an hemorrhoidal discharge. Malformation of the chest also, by interfering with the free circulation through the lungs, or an impeded transmission of blood through the blood vessels due to the pressure of the adjacent parts, may likewise contribute to produce it. Sometimes it appears to be dependent upon an altered condition of the blood itself, as in purpura and some eruptive fevers; but its most frequent cause is tubercular affection of the lungs, to which it is an essential stage from the obstruction to the circulation occasioned by the tubercles, or subsequently from the vessels participating in the ulcerative destruction.

Unaccountable sympathy has been observed to exist between the uterus and the organs of respiration, and spitting of blood has sometimes been known to precede the appearance of the menses, and to cease entirely upon their cessation. Sometimes it has been found to supersede the discharge altogether, or to make up for a deficiency in its quantity.

An attack of hemoptysis is usually preceded by certain premonitory symptoms, such as chilliness, headache, lassitude, and a quick and vibrating pulse. The patient also experiences a sensation of weight in the chest, with a feeling of heat and itching in it. The expectoration of blood is attended with cough. Sometimes the quantity brought up is very considerable, and is expelled with violence; at other times it is more moderate with it. If the expectorated blood is generally of a vermicolour, and, when in small quantities, it is frothy and mixed with air. When the blood comes from the stomach, it is brought up by vomiting and without cough, without the froth, and is of a different colour. Susceptible of apoplexy.

Pulmonary Apoplexy.—When it happens that the blood, instead of being exhaled into the air-tubes, is effused into the parenchymatous structure of the lungs, the name of pulmonary apoplexy is given to it. One or two lobules, or a portion of the lung only, is sometimes affected in the lung in a perfectly healthy state. Not being immediately destroyed in such cases, time is given for the absorption of the most fluid part of the blood, which will account for the known reduced character of the effused parts. What is effused is to a considerable extent drained down, and hemoptysis to a very considerable and generally immediately fatal extent takes place.

Pulmonary apoplexy is disease of the heart, by which the circulation through the lungs is impeded and oppressed with blood. The causes mentioned as conducing to hemoptysis are also common to this affection, and the symptoms are very similar. The phthisis pulmonalis may be in these respects understood under the same general principles as are applicable in any case of internal hemorrhage. [HEMORRHAGE.]

Phthisis Pulmonalis.—This is by far the most frequent and most fatal of all diseases of the chest. It is the consequence of the deposition of small granular flakes of a greyish-white colour, called tubercles, in the structure of the lungs. By coalescing these smaller bodies acquire some times the size of a bean, or even of a filbert, assume a light yellow colour, and become something like cheese in consistence. They may exist in a quiet state for a long time, without materially affecting the life or health, but subsequently they become more numerous, soften and grow into abscesses (vomica), which increase and produce death either by suffocation or by wearing out the powers of the constitution. For a more extended account see article Paratyphus Pulmonalis.

Malignant Diseases.—The lungs are also subject to diseases of a specifically malignant nature, such as medullary sarcoma and melanoma; but these rarely occur as a primary affection. The medullary and melanomoid matter is deposited in the chest either in a fluid condition, in conjunction with its existence in other parts, and frequently in all the majority of the organs of the body.

Black or Carbonaceous Matter in the Lungs.—Of late years medical men have observed a peculiar discoloration in the lungs of persons who have died after a long period of time in coal-mines, or in mines where gunpowder is used in large quantities for blasting masses of rock. The lung is found of a coal-black colour throughout, though still perfectly natural in all its other characters. It is evident that the lung must have been subjected to the expectoration of persons so affected parts of the same colour. The cause of this seems to be doubtful; but most probably arises from the inhalation and absorption of the carbonaceous matter of the burned wood in the atmosphere.

Bone and cartilaginous matter has been found in the lungs, and the membrané surrounding the lungs (the pleura) is sometimes met with converted into bone; sometimes it is studied with tubercles similar to those found in the lungs. For an account of inflammation of the pleura see PLEURISY.

LUNILITUS. [CELLARIA, vol. vi, p. 400.]

LUPA. (Custaceology.) [POSTUMIUS.]

LUPINITE, a peculiar bitter substance, extracted from the leaves of Lupinus angustifolius, a species of lupin used in the meal with anhydrous alcohol: the solution being evaporated to dryness, the lupinite remains; it has a green colour, is translucent, and may be melted; it is soluble in ether as well as in alcohol; but it is probably mixed with other vegetable products.

LUPINUS, a very extensive genus of hardy annual, perennial, and half-shrubby plants, commonly cultivated as gardens for the sake of their gayly-coloured flowers. The species inhabit Europe, the basin of the Mediterranean, and the temperate parts of both North and South America. Especialiy of the former, where they are extremely abundant; but they are unknown in a wild state throughout all the tropics, except on mountains, and in the principal part of Asia and Africa. A new species has recently been described, and has appeared in the volumes of the 'Botanical Register and Magazine,' and there is a monograph of the genus published at Lund by the younger Agardh in 1835, under the name of 'Lupinus lupinus.'

Lupines have been used as green manure, that is, as a crop to be ploughed into land when green, but they are not esteemed for this purpose. They are also still cultivated, as in the times of the Romans, by the Neapolitans and other southern nations, who eat the seeds after steeping them in water to diminish their bitterness, which always renders them unpleasant to those who are unaccustomed to them.

The Greeks, who called them thermos, employed lupines not only as an article of food, but medicinally, esternung lupini (lupinis albus effusus), and emmenagogus, &c. ( Dioscor . ibid. c. 132.) While some species are cultivated, their wild thermos is supposed by Sibthorp to be the L. angustifolius. The two species most common in America are L. hirsutus and pilosus, but the species cultivated in Europe are L. purpureus and L. albus.

Lupines are said to derive their name from lupus, a wolf, because of their devouring the substance of the land on which they are grown.

LUPONIA. [CYPRIA . vol. viii. p. 556.]

LUPULIN, a name given to a substance extracted from hops, and which was at first supposed to be their peculiar principle; but it has since been found that it contains only from about 8 to 12 per cent. of the vegetable matter to which hops owe their power, and to this the name of lupulin has been applied.

LUPULITE is prepared by a tedious process: it is nearly colourless, but sometimes of orange-colour; in the
former case it is opaque, but in the latter transparent; it has no smell till it is heated, and then it has the odour of hope; its taste is that of water, even when boiling, dissolves only 4th of its weight; the solution is pale yellow, and it is neither acid or alkaline; neither dilute acids, alkalis, nor solutions of metallic salts produce any effect upon it; alcohol dissolves it rapidly, but in ether it is almost insoluble.

LUPUS (the Wolf), one of the old constellations, named in Aratus and Ptolemy simply ὁ λύκος, 'the wild beast.' It was not a separate constellation, but was carried in the right hand of the Centaurus towards the Altar. The same description is given by Hyginus. In modern maps it is represented as a wolf traced by the spear of the Centaur. It is situated between Centaurus and Ara, directly under Scorpius.

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LUT. [see also Haute.] LUTINGE, a name given by Linneus to one of his natural orders of plants. It is equivalent to Solanaceous of modern botanists.

LUSATIA. [Lusatia.]

LUGO. [Cantabria.]

LUSITANIA. [Portugals.

LUSITRUM was applied to a period of five solar years among the Romans; and the termination of this period was generally marked by great religious solemnities. It was called a lustrum, and was usually offered at this time by one of the censors in the Campus Martius (Liv. i. 44); and the victims consisted of a cow, a sheep, and a bull, which were led round the people three times, and then slain; but this sacrifice was sometimes omitted, or reduced to goats and sheep (Liv. iii. 22). Varro (De Ling., Lat. v. 2) derives the word from luaere, because the farmers paid their taxes at that time; but others, with more probability, trace the etymology to the purifying sacrifice which was then offered.

It is well known that the most antient Roman year consisted only of 10 months, or 304 days, and that this year continued to be used for religious purposes. Niebuhr, in his 'History of Rome,' has shown that the lustrum was the period, after which the beginnings of the civil and religious years were made to coincide; since 5 solar or civil years of 365 days each, containing 1825 days, coincide with 6 religious years of 304 days each, containing 1824 days, with the difference of one day.

In the time of Domitian the name of lustrum was given to the public games which were exhibited every fifth year in honour of the Capitoline Jupiter. (Sueton., Domitian, c. 4.) The poets frequently used the word for any space of five years (Hor., Od. ii. 4, 24; v. 1-6), and sometimes contained a period of five years, which is called a space of four years. (Ovid, Pont., v. 6-5; Martial, iv. 45.)

(Niebuhr's History of Rome, vol. i., pp. 270-280, Eng.)

LUT. [see also Haute.] Lute, a musical stringed instrument with frets, one of the numerous varieties of the ancient cithara. Till towards the end of the seventeenth century its practice formed an essential part of a good education, but it has since been partially superseded by the guitar: nevertheless the salaried office of

Mr. Ballay makes this star to be δ of Bayer, and the next θ.
which latter he continued to cultivate during the rest of his life. While at Erfurt he appears to have exhibited the usual jovial careless disposition of a German student. In 1505 an accident occurred which altered the current of his thoughts. One of his fellow-students was killed at his side by lightning, and Luther from that moment made a vow to become a monk. On the 17th of July in the same year he entered the Augustin convent at Erfurt, carrying with him only a Virgin and a HКурснus. His father was at first averse from this resolution, but after two years he consented, and was overawed by the determination of his son. On the 22nd of July 1507, after his retirement of his convent Luther was tormented by temptations and religious scruples and doubts, which he has pathetically described, especially on the subjects of faith and works. His next step was to enter the church of St. Augustin, or at least those ascribed to that Father, on grace and predestination. The provincial of his order, Staupitz, a man well-informed, honest, and kind-hearted, administered to him spiritual consolation, and appreciated his talents; and it was due to him that Luther was called to thesee as professor of philosophy in the university of Wittenberg. In his lectures, which were well attended, he appears to have discarded the scholastic forms which were prevalent at the time, and to have appealed to reason more than authority, to nature instead of revelation. In 1510 he was sent to Rome on business concerning the order, a circumstance which brought about a crisis in Luther's life. He proceeded to that country, which he looked upon as the centre of Christendom, with his heart full of spiritual hopes and devout expectations. He was received with coldness and slights at what he saw there. He found pomp and pride, gross sensuality, hypocrisy, and treachery, as he tells us, even in the convents which were his halting-places on the road. He told the monks at Milan that they ought to fast on Fridays, and his ministrations of the sacrament were ill received. His heart became affected by these occurrences; he fell ill at Bologna, and was confined to his bed for some time. Having recovered, he continued his journey to Rome, and on his arrival repeated the experience of his opponents in the region of Popolo. There he kneled on the ground, 'bathed with the blood of martyrs;' he hurried to the various sanctuaries with which the capital of the Christian world abounds; but, looking to those around him, the inmates of the Holy City, he found in them the same corruption and the same worldly enthusiasm as he had experienced before and since on entering the world, that names and realities, professions and practice, are quite different things. Luther was in fact single in his faith and his religious fervour. Rome at that time, after having risen and fallen through the scandalousscandals, was ruled by the choleric and warlike Julius II, who represented the church militant upon earth, and who was then busy about his schemes of humbling Venice and driving the French out of Italy. His cardinals were able dupes of the plot, and the world was better acquainted with Cicero than with the Bible. In visiting the churches, Luther was shocked at the indecent hurry with which the priests went through the service of the mass, and at the blasphemous jests which he sometimes heard. He was amazed by the change in the appearance of his teachers. Luther remained only a fortnight at Rome; he hurried back to his native Germany with his head bewildered, his feelings distressed, and his religious belief greatly shaken. He used to say to his friends, in after-years, that he would not, for one hundred thousand livres, have missed that journey to Rome, for without it he should have been tormented by the fear of being unjust towards the pope during his subsequent controversy with the papal party.

In 1512 Luther was made doctor of divinity, and Frederic, elector of Saxony, called the Wise, defrayed the expense of his inauguration, which was celebrated with splendour. The reputation of Luther had spread as that of a learned divine preacher, and he was placed with scholastic learning, and tolerably so with the Father that he knew Greek, but very little Hebrew he had, above all, deeply studied the Scriptures, which was not a common attainment among ecclesiastics in those days. He was zealous and earnest, devout in his thoughts, and irreproachable in his morals. In his own order he was appointed provincial vicar of Misa and Thurinigia, in which office he evinced much zeal for the maintenance of discipline and piety in the various monastic houses of that province.

In 1517 Pope Leo authorized by a bull the sale of indulgences in Saxony and other parts of Germany, as his predecessor Julius II. had done in France, Poland, and other parts, nominally for defraying the expenses of building the new church of St. Peter's, and also for supporting the cause of the Christian religion. The sale of indulgences little of the money derived from the sale was employed for either purpose. [Leo X.] The practice of selling indulgences had existed for some centuries before Luther. In the origin of the doctrine of grace and of the letter Indulgence. Leo addressed the papal commission for the sale in Saxony to Albert, elector of Mainz and archbishop of Magdeburg, who appointed Tetzel, a Dominican monk, his quaestor, to preach and sell the indulgences. Tetzel, after having executed his mission with the greatest quackery, enhanced his wares in the opinion of his uninformed and credulous customers by the most absurd exaggerations, and going far beyond the received doctrine of the Roman canonists ever of indulgences. Some of his penitents, who had purchased the indulgences, refused to submit to the penance or reparation which he enjoined, saying that Tetzel had released them from every penalty. Luther having refused absolution, they went and complained to the King, who had a great regard for the Emperor. Luther then appeared before the pope, who had the power of remitting the former or the indulgences could not be applicable to the dead; that true contrition of heart and amendment of life would obtain pardox without any papal indulgences; that the true treasures of the Christian life were penance and the imitation of the Holy Ghost; that at all events, if indulgences be of any avail, they ought to be distributed gratis to the poor, and not to be made an article of trade; and here is exposed in strong colours the avarice, impudence, and hypocrisy of the Roman Church. Tetzel appeared to be a formidable character, with all the fear and fearfulness of principles and conduct among the poor destitute population resulting from the whole system.

Leo enclosed a copy of his propositions in a letter to the archbishop of Magdeburg, dated 31st October, 1517: Luther, after having received it, forwarded it to the Emperor, demanding that he should proceed to an open debate on the spreading of error, and to put a stop to Tetzel's scandalous practices. On the same day Luther affixed another copy of his theses on the gates of the Castle church of Wittenberg, signed with his name, and containing his offer to defend them in the pulpit. He first claimed the indult which they kept all Europe in awe, and which he was destined to shake its very foundations. Though in these celebrated theses there was nothing but what has been maintained by many Roman Catholics, still some of them were certainly at variance with the opinions of the tolerant Huns, he was the first to assert that Luther's time, and also with the claim of infallibility assumed by the popes. From the pulpit of the same church Luther repeatedly expounded his propositions, and was eagerly listened to by crowds of people. His theses spread with the greatest rapidity, and soon after the emperor returned he rested, namely, that indulgences could only remit the canonical or temporal penalty, gained ground universally throughout Germany. Tetzel and his brother Dominicans, being charged with Luther's theses, attempted to answer them by counter-propositions maintained on the authority of the pope and his infallibility. But this production injured Tetzel's cause, and a copy of it was publicly burnt by the Wittenberg students. Leo X., when he heard of the dispute, remarked, that it was but a quarrel between monks, and that brother Dominicans seemed to have nothing to fear. The idle assertion which has been put forth by later writers, that Luther and his superior Stauf as seriously attacked by jealousy against the Dominicans for having the monopoly of the indulgences, has been triumphantly refuted.
Leo himself wrote to Luther a very mild and conciliatory epistle, published by Loecher in his Unschuldf Nachricht, 1742. Milititz had other conferences with Luther at Leiden and Lichtenberg, which gave great hopes of a full reconciliation, when the polemic intemperance of Luther's pamphlets and invective against the Pope and the Papal system widened the rupture and brought about the dispute to a crisis. (Seckendorf, Commentarum Histor. de Lutheramienza.)

Eckius challenged Carlstadt, one of Luther's disciples, to a public disputation at Leipzig, concerning free-will. Carlstadt, with his church and town, replied by an address on the abstruse subjects of free-will and the means of justification. Still it appears that Luther had as yet no intention of separating from the Roman Catholic Church. In May, he published his succinct letter to the Pope, in which he states, 'I throw myself prostrate at your feet, most holy father; call or recall me, approve or condemn me as you please; I shall acknowledge your voice as the voice of Christ, who presides and speaks in your person.' Leo summoned Luther to appear at Rome in six days, and tried to plead his own cause; but the elector of Saxony interposed, and obtained permission for Luther to be examined within the bounds of the empire, and to be judged by his ecclesiastical laws. Cardinal Cajetas, of the order of Dominicans, and called to the see of Cologne, was ordered to examine him. Luther, accompanied by Stupitz and another friend, repaired to Augsburg, in October, 1518, and was received by the cardinal with courtesy; but instead of arguing the point with him, the cardinal assumed an insuperable air of dignity and pre-eminence, so as to make the pope so willing, and how he could, Luther, a single monk, expect to be able to cope with the pope? (Luther's Letter to Spalatin, chaplain to the elector, and his friend, dated August 29, free-will, works, salvation by grace, and the divine appeared to prevail in point of argument, Hoffmann, the rector of the university of Leipzig, who had been appointed judge of the disputation, refused to declare to whom the victory belonged, and the decision of the matter was left to the judgement of the courts of purgatory and of inductions, in which Luther had decidedly the advantage, and partly drew his antagonist to his side. Next were discussed the questions of absolution, whereon the poor monk stood on the point of death; and here divine appeared to prevail in point of argument, Hoffmann, the rector of the university of Leipzig, who had been appointed judge of the disputation, refused to declare to whom the victory belonged, and the decision of the matter was left to the judgement of the courts of purgatory and of inductions, in which Luther had decidedly the advantage, and partly drew his antagonist to his side. Next were discussed the questions of absolution, whereon the poor monk stood on the point of death; and here divine appeared to prevail in point of argument. Rewarded heretically, such counsel being condemned; his writings were ordered to be publicly burnt; and Luther himself was summoned to confess and retract within the space of sixty days, under pain of excommunication. Luther having again appealed to the general council of the church, the pope, by burning on a pile of wood, without the walls of Wittenberg, in presence of a vast multitude of people, Leo's bull, and also the decreets and canons relating to the pope's supreme jurisdiction. This was done on the 6th of September, 1520, and on the 8th of the following January the pope launched a second bull against him, by which Luther was expelled from the communion of the church for having disowned the supremacy of the Roman Pontiff. Luther having now irretrievably separated from Rome, gave way to the violence of his temper in several violent and scurrilous pamphlets, full of coarse vituperation against the pope, whom he openly styled Antichrist. At the same time Leo urged the new emperor, Charles V., to use his power and influence to suppress the heresy, and make an exemplary punishment of Luther as an obdurate heretic. But Frederic, the elector of Saxony, employed his influence with Charles to have Luther's case tried by a diet of the empire, which assembled at Worms, in April, 1521. In the course of the ensuing debate, Luther said that he had never heard of the emperor's death, and that he had been summoned to appear before the pope, the emperors, bishops, dukes, margraves, and other princes and lords assembled, and being asked whether he was the author of the books now produced, in which the propositions condemned by the pope were contained, he answered in the affirmative. Being next asked whether he would retract or maintain them, he begged
for time to consider of his answer, and was allowed one day. The following day he appeared again before the assembly, and said that his writings were of various character, that in some he had treated only of Christian faith and piety, and these could contain nothing objectionable; that in some he had exposed the inventions of men and the usurpations of the popes, and these he could not retract; that in others, which were directed against the enemies of the papacy, he had spoken himself in an unbecoming manner, but that he could not retract the substance however censurable the manner of it; that, being a man, he was liable to error; and that he was ready, if convicted by the testimony of the Scriptures, to renounce the whole of the power and prerogatives of the popes, and to become a martyr to the flames. And he repeated what he had already said on another occasion, that both pope and council were liable to error, and had in fact often erred. He had formerly quoted the council of Constance as an instance of his assent.

On the following day Charles V. told the diet, that attached as he was to the Roman Catholic church, he should ever defend its doctrines and constitution, that he could hear Luther no more, and that he should disown him, and afterwards treat him as a heretic. This decision was also that of the majority. Some were for trying persuasion and entreaty with a man who, like Luther, could not be frightened into submission; but entreaty was likewise of no avail, for Luther refused to retract a single proposition unless punished by the sentence of a Roman court. He was then ordered to leave Worms, with a written promise of security for twenty-one days. He left on the 26th of April, but on entering a forest his carriage was stopped by a party of armed horsemen, who placed him in a horse-chaise, and conducted him to the solitary castle of Wartburg, situated on a mountain. This was another contrivance of his kind protector the elector of Saxony. The greatest secrecy was observed concerning the place of his residence, which was purposely kept unknown about that the enemies had carried him off. A month after his departure an imperial edict appeared, placing Luther under the ban of the empire, ordering him to be seized and retained in prison at the emperor’s pleasure, and imprisonment and excommunication pronounced against any one who again entertained him. But the edict could not be enforced. The elector of Saxony was Luther’s friend; few, if any, of the other electors or princes were his enemies, and the popular voice was for him; for the Germans in general, although they professed the doctrine of Luther’s polemics, were weary of the abuses and encroachments of the ecclesiastical power.

In his salutary at Wartburg Luther wrote several treatises against auricular confession, against monastic vows, clerical celibacy, and for the delegates at the suburban congress at Paris, which had condoned his works, and which he expected to public ridicule. His writings spread and produced a wonderful effect in Saxony. Hundreds of monks quitted their cells and monasteries. The Confederacy of Wittenberg abolished the monasteries. Carstoldt, a disciple of Luther, was more intemperate than his master, accomplished by a band of reformers, demolished the images in the church of All Saints at Wittenberg, and next proposed to burn all books from the university except the Bible. He also affected to obey to the letter the sentence pronounced on Adam by going to work in the fields for some hours daily. Even the polished Melanchthon followed the example, and went to work in a baker’s shop.

In retirement, boarded of these follies; he perceived that fanaticism was spoiling his cause, and he resolved immediately, without heeding his own danger, to return to Wittenberg (1522). He rebuilt Carstoldt, who returned, calling him an idolater because he believed in the Church of God and the sanctified Scripture. The prince of Anhalt on terms of intimacy with princes. At last they parted in anger; Carstoldt was banished from Saxony as a seditionous person by the elector, for inculcating the principles of natural equality, and he went to join Zwingli in Switzerland.

Luther was now the acknowledged leader and oracle of the reformers of Germany, and as such he continued to the end of his life. The doctrines which he gradually asserted, and which were expanded and fixed by his disciples, Augustana and which are stated in the article Protestantism. At the close of 1522 he published his German version of the New Testament. In 1523 he preached against the mass.

He had already replied in his usually scurrilous style of polemics to the treatise in defence of the sacraments written by Henry VIII. of England. It must be observed however that he covered the pages with such an accumulation of their admirers. Luther’s controversial works were not peculiar to him being commonly used by scholars and divines of the middle ages in their disputations. The invectives of Valla, Piscocchio, and Giustiniani, against the papacy, which are notorious, and this bad taste continued in practice long after Luther down to the seventeenth century, and traces of it are found in writers of the eighteenth, even in some of the works of the polished and cultivated Voltaire.

In 1524 Luther was again in Strassburg, and definitively condemned monastic institutions. Convicts, both of men and women, were now rapidly suppressed through North Germany, and their property was seized by the secular power: indeed there can be no doubt that the hope of establishing great benefits to the secular princes and electors gave to the new doctrines. The conviction of the wunderlicher, or anabaptists, led by a fanatic named Munter, which assumed the character of a popular war against all property and law, gave great concern to Luther, who was acquainted with many of the sectaries, and which all those aberrations flanked. He preached against the fanatics, he tried to mediate, he besought the peasants to lay down their arms, and at the same time he told the princes to redress the grievances of the poor; but the more the peasants indulged in excesses, the more the princes and the landowners were inflamed with anger, and devestation, and nothing but the sword could put a stop to it. Luther was sorely grieved throughout the rest of his life at the renewed disorders of the anabaptists and the excesses committed on one side, and on the other the wars of religion, worldliness, and corruption of all classes. He failed at times that the end of the world must be near, for the world had fallen into decrepitude; avarice and selfishness were the ruling passions. (Luther’s Table Talk; and in.

In 1525 Luther married Catherina de Bora, a young woman who had left her convent the year before. He had been before condemned the obligation of clerical celibacy, as well as that resulting from monastic vows, as being human invention, and contrary to the simplicity and peace, 'wrote,' is 'a state of simplicity and peace.' When Luther married he was poor, for amidst the great class from the old to the new system of church discipline, the salary, which was charged upon the revenues of monasteries and churches, was not a man to ask money of his friends. In the same year he way and considerate patron Frederic of Saxony died, but John, his successor, not only continued to favor Luther, but made open profession of his doctrines, and plucked the little flower of Brandenburg, Pto in flame and Hesse, and also many cities in other parts of the empire, opened their bosoms to embrace Luther’s reformation. In Switzerland however another reformer, Zwingli, who had been, like Luther, by opposing indulgences, had also effected a reformation, but he incited sects different from those of Luther, especially on the subject of the real presence in the sacrament, which Luther admitted, and Zwingli entirely denied. Luther was vexed at this division, especially the town of Germany, Strasbourg, Wurzburg, Mayence, Mainz, and other states of Emperor, opened their bosoms to embrace Luther’s reformation. In Switzerland however another reformer, Zwingli, who had been, like Luther, by opposing indulgences, had also effected a reformation, but he incited sects different from those of Luther. In March, 1529, a diet was convoked at Speyer, in which the Catholics endeavored to enforce the edict of Worms against Luther and his followers, and the princes of Germany, Hesse, the margrave of Brandenburg, and the deputies of the imperial cities, caused its rejection. The Catholics endeavored to separate the reformers; they drew up a decree, apparently directed against those who denied the real presence, but secretly directed against Luther and his followers, who refused their sanction to it. It was on this occasion that the reformers and deputies delivered a formal protestation against the decree, dated Speyer, 16t of April, 1529, which was signed by John, elector of Saxony, Gerards, the margrave of Brandenburg, Plon, landgrave of Hesse, Reus, and France, dukes of Lüneburg, Wolfsgag, prince of Anhalt, and the deputies of fourteen cities. From
protestation arose the name of "Protestants," which in its origin was applied to the Lutherans.

The landgrave of Hesse, wishing if possible to bring about a union among all reformers, succeeded in appointing a council between Luther and Melancthon on one side and Zwingli and Oecolampadius on the other. The conference turned chiefly on the subject of the real presence, but it produced no approximation among the opposite parties. They separated neither in friendliness nor in enmity, and their enmity was not to be lessened by the failure of the Nuremberg and Augsburg conferences. In 1520 a diet was convoked at Augsburg by Charles V., who attended it in person, and there the Lutherans presented their confession of faith, which was drawn up by Melancthon and approved by Luther. (Augsburg, Concord, and Osnabruck, which are important, chiefly to Christians. To those who do not believe in Christianity it may appear of little consequence what Christians do believe, or how and whence they derive their belief; but even in a social point of view it is of some importance to decide whether large multitudes of men are to exercise their own judgment and be able to give reasons why they believe certain doctrines, or whether they are for ever to repeat, generation after generation, whatever they have been taught in their youth, without exercising their reasoning powers on the matter.

Those who judge of Luther's disposition merely from his controversial style and manner greatly mistake his character. He was a warm-hearted German, kind and generous; he had studied and his antagonists the more in proportion as they were powerful and in his youth walked in the footsteps of Bandenburger, to Moravia and Bohemia, Denmark, and Sweden. He also effected a reconciliation with the so-called Sacramentarians of Strasburg, Ulm, and other towns, by means of which all the reformed Germany was united under one banner. The Helvetic reformed churches however continued to separate from his.

At the beginning of 1546 Luther repaired from Wittenberg to Eisleben for the purpose of reconciling the counts of the Electorate of the Netherland and of the chancellor of the empire, and at the same time in a very precarious state of health: on the 17th February he felt very ill and weak, laid himself on a couch, spoke of his approaching death, for which he prepared himself quite, and recommended his soul to Jesus. He now worked in the last days of his life. Count Albrecht of Mansfeld and his counts and several other Princes attended him during his last hours. His old friend Dr. Jonas having asked him: "Reverend father, do you die with a firm conviction of the faith you have taught?" Luther replied, "I am certain of the form of the gospel, the word, and the doctrine of God's grace, but I can no longer breathe my last. His body was carried to Wittenberg, where it was buried with great honours. Shortly before his death he wrote several affectionate letters to his friends, who had remained at Wittenberg with his children. He left a small estate at Zeilsheim, charging her to pay his debts, which amounted to 450 florins; and he left her also a few valuable trinkets and other moveables, worth about 1,000 florins. 'I leave,' he wrote, 'no ready cash or hidden treasure, as I have had not even time but my salary and a few presents, and yet have managed to keep an establishment and purchase property.'

Luther's works, which are multifarious and voluminous, partly by the inhabitants of Wittenberg, partly by the inhabitants of other cities, have been published. The latest edition is that of Erlangen, 26 vols. 12mo, 1826-33. Among his works, some of the most interesting to the general reader are his "Table Talk," "Tischreden," his familiar letters, and his sermons. Luther ranks high among modern historians. His eloquent institution is one of the most brilliant men who imparted to his vernacular language. Schroeck, Melancthon, and others have written biographies of Luther, and Michel has extracted a kind of autobiography from numerous passages of his works: "Mémoires de Luther," 2 vols. 1853. From these passages the character of Luther is clearly deduced, for there was no calculation, reserve, or hypocrisy about him. He was frank and vehement, and often intemperate. But he was earnest in his vehemence; he really felt the importance of the topics he was discussing; and whether he was right or wrong in his peculiar opinions, he was a sincere and zealous believer in the Christian Revelation. Luther considered religion as the most important business of man, and because he considered it as such, he wished to ascend to its very source unalloyed by human authority. He contended for the right of every man to consult the great books of the Christian revelation, and although he insisted upon his own interpretation of particular passages of the scriptures, the principles of free inquiry which he introduced led to further results, and gradually established the independence of conscience, which now exists in the Protestant states of Europe. But Luther himself made no attempt to reconcile the scriptures against human authority, did not for a moment admit of any doubts concerning the truth of revelation. The question between Luther and his antagonists is therefore an important one, chiefly to Christians. To those who do not believe in Christianity it may appear of little consequence what Christians do believe, or how and whence they derive their belief; but even in a social point of view it is of some importance to decide whether large multitudes of men are to exercise their own judgment and be able to give reasons why they believe certain doctrines, or whether they are for ever to repeat, generation after generation, whatever they have been taught in their youth, without exercising their reasoning powers on the matter.

Luther gave that impulse towards spiritual philosophy, that thirst for information, that logical exercise of the mind, which have made the Germans the most generally instructed and the most intellectual people in Europe. Luther was converted by a warm-hearted German, kind and generous; he studied and his antagonists the more in proportion as they were powerful and in his youth walked in the footsteps of Bandenburger, to Moravia and Bohemia, Denmark, and Sweden. He also effected a reconciliation with the so-called Sacramentarians of Strasburg, Ulm, and other towns, by means of which all the reformed Germany was united under one banner. The Helvetic reformed churches however continued to separate from his.

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the principal rivers of Luxembourg are, the Moselle, which for twenty-five miles forms the boundary between this province and Prussia; the Sûre, an affluent of the Moselle, and also a boundary between Luxembourg and the Prussian Rhineland provinces, on the north by Liège, and on the south by the French départements of the Moselle and Ardennes. Its greatest length from east to west is 75 miles, and its greatest breadth is 50 miles; its area is 690,000 hec- teres (equal to 1,700,000 English acres), or 2656 square miles, distributed as follows—

**Wooded and plantations**
211,000

**Arable land, pastures and meadows**
240,000

**Heaths and commons**
127,000

**Uncultivable land, marshes, &c.**
98,240

**Roads, &c.**
23,760

690,000

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- Uncultivable land, marshes, &c.: 98,240 hectares
- Roads, &c.: 23,760 hectares
- Total: 690,000 hectares

Luxembourg is crossed from the south-west to the north-east by a range of high ground, part of the Ardennes, which separates the valley of the Maas from that of the Moselle. This range has a mean elevation of 1800 feet above the Maas at Liège, and 1640 feet above the level of the Moselle at Trier. The soil of this elevated region is calcareous, which character extends on both sides of the range, and forms a band about 25 miles wide, which is principally occupied as pasture land. The lower lands, which are commonly called the good country, are very productive, and yield abundant harvests of wheat and rye, as well as flax, hemp, and vegetables. Potatoes, Luxembourg contains many woods of large growth. The area of the vine is said to be inferior to that of any other part of the Netherlands. The vine is cultivated on the banks of the Moselle and the Sûre; and in 1837, the most abundant vintage on record, there were produced 75,506 barrels of wine, which sold at 165,605 guilders. The quality of the wine of the district is inferior. In the same districts are upwards of 2000 distilleries, nearly two-thirds of which have been established since 1832. The quantity of spirit distilled in 1837 was 4,116,429 gallons, from which it is evident that the establishments are generally upon a very small scale.

At the beginning of 1833 there were in the province 32,583 horses, 122,288 horned cattle, and 167,532 sheep; and in the course of that year there were exported 5 horses, 172 horned cattle, and 7,536 sheep and lambs, besides 22,217 hogs, of the number of which no account has been taken; they must however be very numerous, as there is scarcely a family in the province in whom swine are not bred and reared. The branches of industry, not agricultural, pursued in Luxembourg, besides distilling, are those of iron-works, slate-quarries, potteries, tanneries, cloth-mills, and paper-mills. The quantity of iron made is about 9000 tons in a year, the ore for which is found in the eastern and western parts of the province, and the fuel employed in the blast-furnaces is wood-charcoal. Luxembourg contains lead and copper. At Stolzembourg, a village about seventeen miles north of the city of Luxembourg, a copper-mine was worked in 1749, 1764, and 1768, and in 1772 was abandoned as being exhausted. There is a lead mine in Longwy, near Bastogne, but the produce is not great.

Luxembourg is less densely peopled than any province of Belgium. The number of inhabitants, on the 1st of January, 1837, was 323,219, of whom 15,693 only were living in towns, and 307,526 in rural districts. In 1836 there were born in the towns 392 male and 253 female children, and in the country 5678 male and 5469 female children; all together, 11,752. The number of deaths in that year was, in towns 231 males and 194 females, in the country 3588 males and 3408 females; all together, 7421. It appears from a statement given in the census of 1817, that the population of Luxembourg in 1541 was only 95,058 souls. In 1784 there were, in the towns of Luxembourg, Arlon, and Echternach, 12,874, and in the rest of the province 211,220 inhabitants, all together, 224,094. In 1817 there were only 213,957 souls. In sum, the number that increased the most between 1784 and 1817, when the population was 306,654, there were 362,683 Catholics, 68 Protestants, and 335 Jews.

The mortal condition of the inhabitants is said to be superior to that of any province in Belgium, a fact which is sometimes attributed to the extent of the town, the division of the land, which is such as to make proprietors of the majority of the labouring people. To these causes may be added the absence of wealth and consequent of temptation to commit offences against property, and the Military system of the army which is distributed, and even in the city of Luxembourg there is now no collection that would be considered remarkable if possessed by a private person.

The youngs of Luxembourg have no college within the province which they can attend, and are accustomed to go for instruction to Louvain, to Liège, and to Paris. There were in 1833, in all Luxembourg, 779 primary schools, attended by 39,114 scholars of both sexes. The number has increased since that time, and every village or hamlet now its primary school, the teacher of which is chosen by the heads of families.

The city of Luxembourg, the capital of the province, is a fortress of great strength, in 49° 37' N. lat. and 6° 16' E. long. It is the seat of the principal colleges of law, and the residence of 25 miles south-west from Trier, and 100 miles south-east from Brussels. The city is surrounded by strong walls and deep ditches, and has a double line of outworks in the form of a reagon. It is small but well built, and has a military hospital and a court market-place; its population is 11,500. Luxembourg as a fortress belongs to the Germanic Confederation, and is occupied by the troops. The town of Arlon is 10 miles north-north-west from Luxembourg. (Arlon) Population 3407. The town of St. Trond is 13 miles north of Luxembourg, has a population of 3417, who are occupied with the manufacture of pottery, woolen cloths, and other less important manufactures. The town is surrounded by a wall, and has five gates, besides an ancient bridge over the wine. The quality of the wine is inferior. Other towns of the province are St. Hubert in the Ardennes, formerly the seat of a rich Benedictine abbey, and a place of pilgrimage, with 1300 inhabitants; Bouillon, the capital of the duchy of the same name (Bouillon); Neufchâteau, in a wild district, where is an old hospital. Other towns of the province are St. Hubert in the Ardennes, formerly the seat of a rich Benedictine abbey, and a place of pilgrimage, with 1300 inhabitants; Bouillon, the capital of the duchy of the same name (Bouillon); Neufchâteau, in a wild district, where is an old hospital.

**LUZOR. [EIGHTH; THEBES]**

**LUZERN (Lucerne in French), a canton of Switzerland, bounded on the north by Aargau, on the east by Schwyz, on the south by Bern, and on the west by Glarus and Zug. Its greatest length, from north to south, is 33 miles, and its greatest breadth 27 miles. Its area is reckoned at 637 square miles. The declivity of the valleys is towards the north and west. The southern part of the canton belongs to the lower Rhine, and the upper Reuss, and the lake at the town of Luzern, and flows in a north-east direction into Aargau. Below Luzern the Reuss is joined by the Wald Emme, which rises at the south-west extremity of the district, runs northward through the fine district called Eschach, and then flows east-north-east, joining the Arve at Luzern. Above Luzern its course is south of the Reuss. A succession of high grounds, running across the middle of the main, divides the basin of the Reuss from that of the Aar, to which latter river the southern part of Luzern belongs. The upper Reuss flows into the lake of Luzern, which lies to the north of the Reuss. Below Luzern the Reuss is joined by the Wald Emme, which rises at the south-west extremity of the district, runs northward through the fine district called Eschach, and then flows east-north-east, joining the Arve at Luzern.
The Wigger rises in the centre of the canton, south-west of the lake of Sempach, and runs northward into the Aar. North-east of the Sempach lake is another and smaller lake, called the Baldegger lake, from which a stream runs into the Halwiler lake, which is in Aargau, but to which the Aar, being in the lower course and well wooded, rises into the Aar. The only mountains in the canton are at its southern extremity, on the borders of Unterwalden and the Bernese Oberland. None of them attain the limits of perpetual snow. The highest is Mount Pilatus, south-west of the lake of Luzern, and a cone more rich in its landscape. It is a mountain-group nearly thirty miles in length, extending along the borders of Luzern and Unterwalden, and having seven peaks or summits, called Esel, Oberhaupt, Band, Tomilschorn, Gemmisätt, Wurderfeld, and Kapelle-Berg. The highest is Mount Pilatus rising on one side, and Mount Rigi on the opposite side of the lake. The interior of the town is not so pleasant, the streets being narrow, uneven, and ill paved. The remarkable buildings are 1. the great house of the abbey of Luzern. The cloisters of the abbey are adorned with paintings; 2. the college of the Jesuits, with a fine painting by Torriani; 3. the arsenal, which contains some relics of the battles of Sempach and Morat; and 4. the three covered wooden bridges, which are the chief curiosities of the lake. The largest of these is 327 feet long, and is named the Hafbrück, which is 1300 feet long, and its paintings relate to the history of Switzerland; the Spreebrück, which is short, has some paintings of 'The Dance of Death.' The parochial church and cemetery are outside of the town, and are well worth visiting. The topographic map, relief, of the country round the Waldstätten See, by the late General Niederer, who spent more than 10 years of his life in constructing it, is one of the most correct and exact maps of the whole country. A monument erected in 1821 to the memory of the Swiss guards who died in the defence of the Tuileries against the mob of Paris, on the 10th August, 1792. It consists of a wounded and dying lion, of colossal size, in alto relievo, supported on a rock, in a niche, with a shield before it, on a pedestal, with the model for it was sent by Thorwaldsen from Rome. The names of the officers, 26 in number, who, with 760 soldiers, fell on that memorable occasion, as well as those officers, 16 in number, who, with about 350 soldiers, survived it, were engraved upon the pedestal. The lion is thus made to throw a shield with a fleur-de-lis on it, and a bundle of broken arms with the Swiss cross lying on one side. Luzern contains 8150 inhabitants. It has two hospitals, a savings bank, a friendly society, and other benevolent institutions. It has a museum of natural history, a collection of minerals, and very good elementary and secondary schools, each divided into three classes. Luzern is the principal of the Catholic cantons, and the Pope's nuncio resides there. (Lersch, The Swiss Confederation, ii. 516; Réné de la Suisse; also an anonymous work entitled Sights Reminiscences of the Rhine and Switzerland, 2 vols., Lon- don 1834, which contains some curious particulars of Luzern life, manners, and scenes.)

LYCÆON. [Hydro-Bogen.]

LYCAONIA (Λυκαωνία, and the inhabitants Λυκιόσι). a district of Asia Minor, is first mentioned by Xenophon, who describes it as extending eastward from Iconium in Phrygia to the beginning of Cappadocia, a distance of 30 parasangs, about 110 English miles. (Anab. i, 2, s. 19.) It was united during the Persian monarchy to the satrapy of Cappadocia. (Xen., Anab. vi. 8, s. 23.) But in the time of Strabo the name of Lycaonia was applied to the south-eastern part of Phrygia; and it was bounded on the south by Mount Taurus, on the east by Cappadocia, and on the west by Pisidia.

Lycaonia is described by Strabo as high table-land, deforested in places, in which the inhabitants could only procure by digging deep wells, but well adapted for sheep, of which Amymas had upwards of 300 flocks (xii. e. vi, vol. iii., p. 58, 59, Tauchmitz.) Iconium, the principal town of Lycaonia, called by Abulfeda Koniyeh, and at present, was applied to the south-eastern part of Phrygia; it contained the cities of Larica, Lystra, and Derbe; the two last of which were visited by Saint Paul, and appear, from the narrative in the Acts, to have been places of considerable importance. (Acts, xiv. 6.)

The northern part of Lycaonia was united, but at what time is uncertain, to Galatia; but the southern part was
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governed in the time of Cicer (Ann. xiii. 73) by an inde-
pendent prince of the name of Antipater, who resided at
Derbe. Antipater however being afterwards conquered by
Amyntas, king of Galatia, the whole of Lycaonia fell under
the power of the Galatians. At the death of Amyntas,
Lycaonia escaped from the power of the Galatian
province. (Dion. Cass. liv. p. 589, Stephan.) In the time
of Pliny Lycaonia formed a separate tetrarchy, which con-
tained 14 towns. (Nat. Hist. v. 25.)

The language of Lycaonia mentioned in the Acts, xiv.
11., was spoken much farther among the learned; of
which an account is given in Jablonsky’s ‘Opuscula,’ ed.
Te Water, iii. 3.

LYCESTA. Saviug’s name for a genus of crustaceans,
which M. Desmarest views as coming very near to the genu-
M s. galat ala.

LYCIA (Lycia), a province of Asia Minor, was bounded
on the north by Phrygia, on the east by Pamphylia, on
the west by Caria, and on the south by the Mediterranean
Sea. The interior of Lycia is characterized by lofty mounts,
which rise in many places to a great height. Mount
Solyma, called at present Tahtaito, at the north of Phaselis
on the coast, and Mount Tuspus, rising in the interior,
are the highest peaks. (Anatolia, i. p. 49.) According to
Strabo (v. iii. c. iii. vol. iii. p. 213, Tuscflntz) there is a great number of
good harbours, notwithstanding the rocky nature of the
coast. The length of the coast, from Telmessos on west to
Sidon, is said to be 270 miles, and that of the interior to
the west is 120 miles; the coast is dotted with towns and
islets. The northern part of Lycia is occupied by the mountains
which support the high table-land of Phrygia on the south,
and which appear to have been known to the ancients under
the name of Massicus. Mount Myara, where the river Myara
plunges into the sea, is the most noted of the centres of the
country, where there are no mountains, according to Mr.
Folows. The Xanthus, which is also represented as an inconsiderable
stream, is in reality a river of considerable length, flowing from
the mountains of the interior, after being inhabited by, and
then through a fertile plain, before being joined by the river
Xanthus, which is also called Myara, and afterwards Solyma;
but again changed its name to that of Ternole, after Sarpedon settled in
the country, having been compelled to leave Cete in con-
sequence of disensions with his brother Minus. They were,
according to the ancient authority, expelled by the son of
Lycaon, the son of Pandome, who came to Lycia after
he had been expelled from Athens by his brother Agios.
(Herodot. i. 173. Compare Strabo, vol. iii. p. 217, 218.) In
the Homeric poetry the country is always called Lycia,
and the Solyma are mentioned as a place near against whom
Bellerophon is sent to fight by the king of Lycia (II. vi.
184). In later times the southern part of Phrygia, on the
north of Lycia, was always called Myara; but the people
are generally called Solyma, though the name still remained
in Mount Solyma on the north-eastern coast. That
Lycia was early civilized by the Greek nation is evident,
not only from the account of Herodotus, but also from many
other Lycian traditions, as well as from the worship of
Apollo, who was worshipped every year over the whole of
Lycia. Xanthus was a Cretan settlement (Steph. Byz.),
and 60 stadia below the town was a grove sacred to Latona,
near an ancient temple of the Lycian Apollo (Strabo, vol.
iii. p. 215; Did. v. 569). But the chief temple was at Patara,
the winter home of the Cretans, where in the temple of
Athena the mouth of a priestess. (Muller’s D’auton, i. p. 245, Engl.
trans.)

The Lycians appear to have obtained considerable power
in early times. They were almost the only people west
of the Halys who were not subdued by Cruses (Herodot. i.
29); and they made an obstinate resistance to Harsupas,
the general of Cyrus, who were eventually conquered. (Her-
rodt. l. 176.) They supplied Xerxes with fifty ships in his
expedition against Greece. (Herodot. vi. 92.) After the
dowfall of the Persian empire they continued subject to
the Seleucids, till the conquest of Antiochus by the Ro-
mans, when their country, as well as Caria, was granted
by the conquerors to the Rhodians (Polyb. p. 64, Cas.
Casiod), but their freedom was afterwards again secured to them
by the Romans (Polyb. p. 241), who allowed them to
their own laws and their political constitution, which
was greatly praised by Strabo. According to this account
(Polyb. p. 214) the government was a kind of federation consisting
of 23 cities, which sent deputies to an assembly, in which
the judges and inferior magistrates. All matters relating to
the government of the country were discussed in the
assembly. The six principal cities, Xanthus, Patara, Pharsa,
Olympos, Myra, and Tlos, had three votes each; other
cities had two; and the remainder of the cities had one.
The sequence of dissensions between the different cities,
the constitution was abolished by the emperor Claudius (Suet.
Claud. c. 25; compare Verg. E. 9); and the country united
to the province of Pamphylia. (Dion. Cass. i. p.
777, C. Sert. ii. 1. 3. 3.)

Lycia contained many cities of considerable importance.
Pliny (Nat. Hist. v. 28) mentions 36, but says that
there were formerly as many as 70. Telmessus, on the borders
of Caria, a seaport with a good harbour, must have been
a thriving city, as is stated by Strabo (v. iii. c. iii.
75), but afterwards declined in power; it is mentioned
Strabo as a small place. South of Telmessus, on the coast
were the towns of Pydna, Cragus, and Patara; the land
which is described by Strabo as a large city with many
temples, which is called Pydaius, is said to be the capital of
Lycia. According to Pliny, the antient name of
this town was Sataros (Nat. Hist. v. 28); but the name
was afterwards changed by Polymny Philadelphus into Ar-
naea (Strabo, vol. iii. c. iii. p. 215, 216.) To the north of Patara
on the river Xanthus was a city called Pydaius; the town
was burnt by its inhabitants, when they could not resist
Bruttus and Tios; and to the east, along the coast
those of Myra (mentioned in the Acts, xxv. 5, as a resi-
ning place of pagans), Patara, and the strong fort of Olympus. The position of
Pinara is doubtful: it is said
down in the maps on the river Xanthus, above the town
the same name; but the numerous inscriptions which Mr.
Folows found at this spot, called at present Doko, prove
that the town was called Patara, and was one of the most flourishing commercial cities
the southern coast of Asia Minor. It was one of the prin-
cipal resorts of the Cilician pirates in the later times of
the Roman republic, and was destroyed for this reason
by the emperor Vespasianus (Tit. v. 10.) It was afterwards
rebuilt, and is mentioned by Lucan (vii. 211;) but it never
recovers its former importance.

LYCUM. Many antient authors, and among others
Diodore, describe under the above name a substance
as used in medicine, which is stated to be of three
kinds, one obtained from Lycia and Cappadocia, and the other
from India. The former is said to be the produce of a thorny shrub called Pyxanadum. The latter is stated to be
more valuable and efficacious as an insecticide, and to be prod-
used also by a thorny shrub which is called Lomchata.

Most modern authors have stated these plants and
the substance they produce to be totally unknown; others
consider species of Rhannus, as it
infectorius, of which both the root, wood, and berries pass
under this name. But the shrubs having white flowers of
used for dyeing yellow, may have formed one of the kind
of Lycium, as it is common in the countries where the
first kind is said to have been produced, and some species
of Rhannus were by the older botanists called Lycum
infectorium, or Lycium indicae. The name Lycum.

Minor, that of India seems to have been quite unknown
the publication of a paper 'On the Lycum of Diodore' by
Dr. Royle, in the Linnean Society’s Transactions for 1833,
where it is stated that there is no proof that Catachu was
the Nervonian (Lycium indicum) of the antients; in fact a
with purple, the head reticulated with white lines, and the scales white at the tips; greenish-yellow below; eyes livid-green. Length from nose to tail 12 inches; of the tail two inches.

Locality of the variety above described,—among decayed wood, near a small stream, immediately beyond Kurrikurra, laubout 75 south. * 

Habits, &c.— "When," continues Dr. Smith, "by the revolvement of some of the rotten masses, the reptile was exposed, it moved slowly among the remaining ones in search of a place of concealment; and when it was interrupted in its advancement, it simply curled itself up without much change or disposition to resist the opposition offered; a similar course I had previously observed of the same species pursuing when attempts were made to secure them; and neither did the one here described nor the others ever move with any considerable rapidity, nor appear much in fear of their assailants. All the specimens which I have seen of this species were obtained in damp situations, and never removed from localities where they could rapidly and without much exertion conceal themselves if necessary; nor do I think in the latter respect they resemble most of the true dugites of South Africa, which are not endowed with the powers of effecting rapid movements.

LYCOPUS EUROPEUS, a wild plant inhabiting wet ditches and sides of dunes belonging to the natural order Fabiabta, and known popularly under the name of gipsey-root, because gipsies are said to stain their skins with its juice.

LYCOPERDON, a genus of fungi, emitting when burst, either by violence or natural decoction, a quantity of mycelium, resembling like seeds or spores, whence the species are commonly called puff-balls. The Old botanists collected under this name a variety of plants, very different from each other in many respects, although agreeing in the circumstance just mentioned; recent botanists have distinguished them into many distinct genera. The only two which it is necessary to mention here are the common puff-balls, which burst irregularly, and the starry puff-balls, which split in a definite stellate manner. They are each inhabitants of woods, pastures, and open plains, being a cloud of brown or yellow dust, consisting entirely of its spores. The Geasters, or starry puff-balls, are much less common; instead of bursting irregularly at the apex when ripe, their outer rind separates at a definite median line, the white, yellow, or brown, cylindrical, curve backwards, and at last elevate upon their centre a bag containing the spores. No use has ever been made of any of the Lycoperdons, except in the case of I. giganteum, a very large indehiscent species, often many feet in circumference, filled with a leathery puffed mass, which has been employed as a styptic, and for tinder.

LYCOPHRON. [F. FORMINIFERA, Vol. x, p. 348.]

LYCOPOPHRON, a native of Chalce in Euboea, the son of Socius, and adopted by the historian Lycurgus of Rhegium, was a distinguished poet and grammarian at the court of Ptolemy Philadephus, from b.c. 280 to b.c. 250, where he formed one of the seven poets known by the name of Paeas. He is said by Ovid to have been killed by an arrow. (*Idaeum, 3.*).

Lycophron wrote a great number of tragedies, the titles of many of which are preserved by Suidas; but only one has come down to us, entitled 'Cassandra, or Alexandria.' This poem however cannot have any claims to be called a drama; Cassandra is the only person introduced and speaking; and she speaks to Piamon the destruction of Troy, and the subsequent adventures and misfortunes of the Grecian chiefs. But in the course of her narration she gives an account of almost all the leading events in Greek history, from the time of Psellos to the expedition of the Greeks under the Great. The work is written in iambic verse, and has no pretensions to any poetical merit; the style is very obscure, and the meaning of most passages very doubtful, which led Statius to describe it as the 'Late byzantine Lyco- phonum atri.' (*Sidon, v. 1, 157.*) But from the quantity of mythological and historical information which it contained, and perhaps from its very obscurity, it formed a favourite study with the Greek grammarians, who wrote many commentaries upon it; of which the most celebrated by Tzetzes,
who lived in the 12th century of the Christian era, is still extant, and affords no small assistance in making out the meaning of this difficult poem.

The "Cassandra" was printed for the first time at the Aldine press, Venice, 1513. The best editions are by Potter, Ox. 1697, 1702; by Reischardt, Leipzig, 1788; by Sebastian, Rome, 1804; and by Bachmann, Leipzig, 1833. The commentary of Tzetzes has been published with most of the editions of the "Cassandra," and has also been the subject of several attempts, and for this reason of C. G. Müller, Leipzig, 1812.

The "Cassandra" has been translated into English by Lord Royston.

LYCOPODIACEAE, a natural order of vascular Acorous, chiefly consisting of shrub-like plants, including mosses and ferns in many parts of the world. They never exceed the height or length of two or three feet, and usually grow prostrate, having stems covered with numerous imbricated scale-like leaves, which, at the ends of the branches bear in their axils bluish cases containing an inflammable powder, sometimes extremely fine, and used for artificial fireworks, which is supposed to be their spores. No distinct race of two kinds of sexual has been found in these plants, which seem to have no very close allies among existing races. Their resemblance to ferns, near which systematicalists always place them, chiefly consists in their being asexuall, and having spiral vessels in their stems. Some of them, especially Lycopodium rubrum, are violent purgers, and the berries of the common Lycopodium are used by alchemists in the former generally of little importance to any except the botanical systematicist. Their name has, however, been brought frequently before the public in popular works, in consequence of an opinion that contains large fossils common in the coal-measures, and called Lepidodendron, are the relics of an extinct gigantic race of these now pigmy species. This opinion has been formed upon the supposition that the diehotomous mode of branching, common in Lycopodiales, and the circumstances of paramount importance in determining natural affinities, and that the Lepidodendron were assexual. The latter is however not proved, nor indeed very probable, and the internal anatomy of Lepidodendron Harcourtii has been shown, in the "Fossil Flora," to be unfavourable to the supposition. (Fossil Flora, article "Lepidodendron Harcourtii," and Adolphe Bronnout's Végétaux Fossiles, article "Lycopodiacæ.")

LYCOPODITES. The affinity of many fossil plants to some of the various genera composing the Lycopodiales is very distinctly pointed out by M. Bronnout, both in the "Prodrôme" (1829) and in the "Histoire des Végétaux Fossiles." Such of these as agree in the following characters are ranked under the title of Lycopodites. Branches pinnate; leaves inserted all round the stem, or in two opposite rows, not distinct and circumscribed cicatrizes. Several species are described from the coal deposits and oolitic formations. We give below a drawing of part of Lycopodites fecalis (Phillips' Geol. of Yorkshire) from the oolitic shales of Grasworth, near Scarbrough.

LYCOERIS, Savigny's name for a genus of Dormbrachiate Annelids (Nereids, properly so called) of Cuvier. See Savigny (Eg. Annel.), and Olivier (Régne Animal). LYCUMUS. [Sparta.] Lycumus, the Athenian orator, the son of Lycomus, and the grandson of Lycurgus, who is ridiculed by Aristophanes (Birds, 1, 1296), was one of the warmest supporters of the democratic party in the contest with Philip of Macedon. The time of his birth is uncertain, but he was an old man during the Peloponnesian War (Lycumus, and Aristophanes (Birds, 1296), and his father was put to death by the Thirty Tyrants (Vitae Decem Orat., p. 841, B.), he must have been born previous to B.C. 404; but the words of the biographer are, as Mr. Clinton has justly remarked (Fasti, vol. ii., p. 151), in no way likely that it was his grandfather who was put to death by the Thirty.

Lycurgus is said to have received instruction from Plato and Isocrates. He took an active part in the management of public affairs, and was one of the Athenian ambassadors who succeeded (B.C. 343) in counteracting the designs of Philip against Aemila and Peloponnesus. (Deb. Phil., B.C. 365, ed. Reiske.) He was also the treasurer of the public revenue for three periods of five years, that is, according to the ancient idiom, twelve years (D Scr. v. 68), and was noted for the integrity and ability with which he discharged the duties of his office. (Deb. Phil.) Engler considers that Lycurgus was the only statesman of antiquity who had a real knowledge of the management of finance. He raised the revenue to twelve hundred talents, and also erected during his administration many public buildings, including markets, the theatre of Bacchus, and the Panatheniac course. So great confidence was placed in the honesty of Lycurgus that many citizens confined to his custody large sums of money, and shortly before his death, he had the accounts of his public administration engraved on stones and set up near the wrestling-school. An inscription, preserved to the present day, containing some accounts of a manager of the public revenue, is supposed by Bick (Public Economy Athens, vol. i., p. 264) to be a part of the accounts of Lycurgus. (See the inscription in Bick's Corpus Inscriptionum Graecarum, vol. i., p. 250, No. 157.) After the battle of Charesonea (B.C. 388) Lycurgus conducted the accusation against the Athenian general Lycurgus, which led to his assassination, and to the demolition of the temple of Theseus, B.C. 335. He died about the year B.C. 323, and was buried in the Academia. (Pausan. i. 29, § 13.) Fifteen years after his death, upon the ascendency of the democratic party, a decree was passed by the Athenians that no public man should be called Lycurgus; a brazen statue of him was erected in the Cenacum, which was seen by Pausanias (i. 8, § 3), and the representative of his family was allowed the privilege of sitting in the Prytaneum. This decree, which was proposed by Stesichorus, came down to us as the "Lives of the Ten Orators." Lycurgus is said to have published fifteen orations (Fasti, p. 843, C.); Photius, Cod. 268, of which unfortunately we have not been able to find any. He is, however, said to have composed, which was delivered B.C. 330, an accusation of Lecceus, an Athenian citizen, for abandoning Athens during the battle of Chersonoe, and settling in another Greek state. The eloquence of Lycurgus is greatly praised by Zeno, who has characterized him as the most perfect of all the orators of his time, and as the founder of Hellenic oratory as a distinct and separate science (vol. v., p. 433, ed. Reiske).

The best editions of Lycurgus are by Taylor, who published it with the Oration of Demosthenes against Meesium (Cambridge, 1819), by Bekker, 1819; and Baier and Baup, 1834. It is also included in the edition of the "Orators Graeci," by Reiske and Bekker. It has been translated into French by Auger, Paris, 1753. (Dionysius of Halicarnassus, Life of Isocrates, attributed to Plutarch;据介绍 to Theodore Nissen, dissertation, De Lycuro Oratoria Vita et Res Gestae, 1833. Compare Bick's Public Economy of Athens, vol. ii., pp. 264-269; vol. iii., pp. 183-185, English transl.)

LYDFORD, a village in the west of Devonshire, was miles north of Tavistock, now almost deserted, and only for the sake of a waterfall or cataract in the Lyd, near a bridge where the stream is bent in twenty arches. The river is full of valuable fishing, and the appearance of the river is very picturesque, and on the side of the wonder of the world, it is an insignificant village was formerly a front town of considerable strength and importance, having 140 burgesses within the walls, and many without, and protected by a castle, erected probably by the Saxons, when they had driven the West Britons across the Tamar. Lyford was burnt by the Danes in 997. It is recorded in Domesday Book as a manor and borough in ancient demesne, having part of the possessions of the crown in the time of Edwear the Confessor, and as being liable to any impost, on the 28th of March, and for the same reason, Lyford appears however to have been tallaged with Exeter, Axminster, Witleford, and ten other towns, in 20 Henry II.
Lydgate, JOHN, an ancient English poet, one of the successors of Chaucer, was a monk of the Benedictine abbey of Bury St. Edmund in Suffolk. The dates of only a few of the events of his life have been ascertained. He was ordained a subdeacon in 1389, a deacon in 1393, and a priest in 1397; after which he was canonized, and it is believed that he was born about 1375. Warton says he seems to have arrived at his greatest eminence about the year 1430. After a short education at Oxford, he travelled to France and Italy, and returned a complete master of the language and literature of both countries. He was a proficient in polite learning, that he opened a school in his monastery for teaching the sons of the nobility versification and composition. Although philology was his subject, his mind was not unequally inclined with the philosophic, and his judgment was not only a poet and a rhetorician, but a geometrician, an astronomer, a theologian, and a disputant. Warton was of opinion that Lydgate "made considerable additions to the lalitature and literature of his time," that Chaucer, Gower, and Occleve led the way; and that Lydgate was the first of our writers whose style was clothed with that perspicuity in which the English phraseology appears at this day to an English reader.

To enumerate Lydgate's pieces would be to write the catalogue of a little library; Ritson, in his 'Bibliographical Poetics,' has given a list of no fewer than two hundred and fifty-one. No poet seems to have possessed greater versatility. His most esteemed works are his 'Story of Thebes,' his 'Fall of Princes,' and his 'Fall of Peru.' His 'Fall of Princes' was written for King Henry VI. It was first printed by Spight in his edition of Chaucer; the second, the 'Fall of Princes,' or 'Boke of Johan Bochas,' first printed by Pyonson in 1494, and several times since, is a translation from Boccaccio, or rather from the French paraphrase of his work. 'The History of Troy' was first printed by Pyonson in 1513, but more correctly by Marah in 1555, and was once the most popular of his works.

A note in Walley's 'A Discourse of Lydgate' seems to inti- mate that Lydgate did not die till 1482, which is improbable. He was certainly alive in 1440; and the best authorities place his death about 1461. Lectures on Lydgate's 'History of Troy.' Ritson, 'Bibliographical Poetics,' p. 66-69; Ellis's 'Specimens;' Chartier's 'Bibliogr. Dict.,' vol. xii., pp. 5, 6.)

'LYDIA (Λυδία), a country of Asia Minor. It is difficult to determine its exact boundaries, as they differed at various times; but under the Roman empire it included on the south by Caria, from which it was separated by the river Meander; on the north by the range of mountains known under the name of Sardene, which divided it from Mysia; on the east by Phrygia; and on the west by the Egean, though the tract of country here mentioned is more commonly known by the name of Ionia. Lydia was intersected by mountain-ranges, running from east to west; of which the principal, called Messogis by Strabo, is a branch of Taurus, and forms the northern boundary of the valley of the river Meander. Modern harbour of Izmir, called by ancients under the name of Timolus, which appears to detach
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itself from the Mésogos near the borders of Phrygia, runs parallel to the Mésogos through the centre of Lydia and terminates on the western coast opposite the island of Chios. A branch of Tmolus, called Syllmus, stretches more to the north-west towards the towns of Cuma and Phocea. The chain of mountains which separates Lydia from Mysia has a natural approach to the remaining of the island known in Bithynia by the name of Olympus, and in Mysia by that of Ida and Tmolus. Lydia is thus divided into two principal valleys; the southern, between Mésogos and Tmolus, through which the Lygus flows, is of obliterate extent, being inundated by the streams Tmolus and Sardene, watered by the Hermus, and its tributaries the Hyllus, Pactolus, and Coganus, forms a considerable plain. The fertility of Lydia and the salubrity of the climate are frequently mentioned by ancient writers. Homer describes this as the most fruitful of any region in Asia Minor, and the reports of modern travellers. (Chandler's Travels in Asia Minor, p. 260; compare Argand's Visit to the Seven Churches of Asia.) Chishull speaks of the country between Tmolus and Mésogos as a region inexpensively deliciously.

The origin of the Lydian people is uncertain. Some writers, and among others Josephus (Antiq., i. 6, 4), have imagined that they are mentioned in the book of Genesis (v. 22) under the name of Lud (777); in which passage they are described as descendants of Shem. Homer also mentions them, and calls them by the name of Lydonis, always the people Lydones. According to most ancient writers, the people were originally called Mnesones, and obtained the name of Lydians from Lydonis, the son of Aya, who was said to have inhabited it before the migration of its inhabitants. (Herodot. i. 7; Diod. Sic., iv. p. 237; Rhodoman; Pliny, N. H., v. 30.) Later writers make a distinction between Mnesones and Lydians, and represent the former as dwelling on the north-west of Tmolus, near the river Hyllus, and the Lydians as inhabiting the southern part of the country. According to Herodotus, the Lydians were of a common origin with the Carians and Mysians (1. 171).

The early history of Lydia is related by Herodotus, who informs us that three dynasties ruled in Lydia: the Aymazes from c. 1200 to c. 1176; the Mermneades from c. 1176 to c. 556; and the Lydians from c. 556 to c. 503. The proper history of Lydia can only be said to begin with the last of these dynasties; since the two first are almost entirely fabulous. The following is a list of the Mermneades, the last of the Heracleid monarchs, reigned from c. 716 to 678. 2. Ardis, from c. 678 to 629. 3. Sadyates, from c. 629 to 617. 4. Alyattes, from c. 617 to 560. (Alvattex.) 5. Cyrus, from c. 560 to 556, though he was born before his father was murdered and during the time of his father. (Cyrus.) These monarchs were engaged in almost uninterrupted wars with the Greek cities on the coast; but the empire steadily increased in wealth and power and obtained its greatest extent during the reign of Cyrus, who subdued all the people of Asia Minor west of the river Hyllus (Kitt-eram), with the exception of the Cilicians and Lycians. (Herodot. i. 28.) But this empire, the most powerful at that time in Western Asia, was overthrown by Cyrus (c. 556); and the country became a Persian province.

Herodotus informs us that no nation in Asia was more warlike than the Lydians (c. 797); till, through the advice of Cyrus, they were deprived of their arms by Cyrus, and obliged to learn music and dancing (c. 554). After Alexander conquered Lydia, Lydia continued subject to the Persian king of Persia; and is still a place of some importance. Chandler speaks of it as a 'mean but considerable town,' large extent, spreading on the slopes of three or four feet (Travels, p. 219.) To the east of Philadelphia Strabo speaks of it as a large town, with 400 stadia in length and 400 stadia in breadth (xiii. 6. c. 11.) Strabo was in doubt whether it ought to be reckoned as a part of Mysia or Miletum. He describes the surface of the plain as covered with sheep, and the mountain rocks as of a romantic and picturesque kind. The town had been a small town on the sparselot before his time, c. Pela. (Steph. Byz.; Pliny, N. H., v. 29.)
LYMNEA. [Lmneans.]

LYMNOOREA (Zoology), Peron's name for a genus of Medusa. This name comes too near to Limnora. See this article.

LYMNOOREA, a genus of fossil zoophyta, proposed by Lamouroux (Expos., p. 79). Also the name of a genus of recent Medusae. (De Blainville, Actinogytie, p. 290.)

LYMPH, LYMPHATICS. A system of vessels which, from the part that they take in the process of absorption, are not unfrequently called absorbers. They consist of minute branched tubes of extremely delicate membrane, whose extremities are arranged in a more or less dense net-work wholly within the body. From this network they gradually converge into a succession of branches of increasing size, and terminate in two main trunks, called the right and left great lymphatic veins, through which the lymph is poured into the veins, and passed by the heart (Lym. [Lym.] veins) into the right and left subclavian veins. The lymphatics also communicate
cargoes inwards, outwards, and coastwise, was 629, the aggregate tonnage of which amounted to 44,330; while in 1833 the number of vessels was only 201, and the corresponding tonnage 11,877. Indeed the harbour appears chiefly valuable as a place of refuge for small vessels during bad weather, as the only safe shelter between the Sixteenth and Twenty-first of Regia and the Start Point of Portland. The church, dedicated to St. Michael, is an ancient edifice. The living, a vicarage in the diocese of Bristol and patronage of the prebend of Sankey, was valued at £754. per annum. In 1831 the population of the parliamentary borough, comprehending the parishes of Lyme and Charmonth, was 3345, that of the town alone being 2407. Until the passing of the Reform Act Lyme Regis had returned two members to parliament. In 1832 it elected Edward I. It now returns but one member. (Report of the Commissioners on the Corporation of Lyme Regis, from which this notice is chiefly drawn.)

LYMPIO. [Jutland.]

LYMINGTON is a corporate town and parliamentary borough of Hampshire. The town is agreeably situated on the right bank of the river Lymington, at a short distance from its mouth, and is 7 miles south-west by south from Southampton, and 90 miles south-west from London. It is well supplied with water, and the inhabitants are, by a decree of the Corporation, deprived of the privilege of carrying their cargoes into the port (Corps. Reports), which circumstance is regarded by the inhabitants as a grievance, inasmuch as they consider the situation of their own port particularly favorable to foreign trade. The foreign trade is unimportant, and the coasting-trade is evidently on the decline, for it appears that the aggregate tonnage inwards and outwards, which in 1812 amounted to 44,934, had gradually decreased down to the year 1832, when the tonnage inwards was 10,575, and outwards 7242. The town has of late years been somewhat thickly populated, with a view to invite visitors during the bathing season: 3000L had been subscribed in 1835 for the erection of baths, and a like sum for the establishment of gas-works. The chief manufacture of the neighbourhood is salt, which some years ago was carried on to a considerable extent, but has since declined. The salt-works are situated on the bank of the Solent Channel, to the south-west of the town. The fairs for cheese are held May 13 and October 2, and are usually well attended. Lymington is a borough by prescription, there being no charter extant or upon record. The town council consists of four aldermen and twelve common-councillors (5 and 6 William IV., c. 76), and the income of the corporation, arising from landed property, tolls, quay and herring dues, amounted in 1831 to 120L. 19s. 6d. The expenditure during the same period being 79L. 12s. 4d. The parish church, dedicated to St. Thomas à Becket, is in the diocese of Winchester, and in its interior to St. Thomas à Becket. The vestry, dependent in some respects upon the church of Boldre, and the income is included in that of the vicarage of Boldre. The population of the town and parish in 1831 was 3361. Lymington has returned two members to parliament since the reign of Elizabeth. (Boundary Reports; Corporation Reports, &c.)

LYME REGIS is a small and irregularly built seaport town in the parish of Lyme and county of Dorset, 20 miles west from Dorchester and 120 west-south-west from London. The streets are badly paved and not at all lighted, and the principal thoroughfare is so narrow, that the safety of the passengers is endangered by the great quantity of market, held in the best part of the town, is regarded as a nuisance, and the butchers' shambles are erected in the main street. Indeed the corporation appear for many years to have altogether disregarded the improvement of the town, as is evident from the momentous event of being not until the 12th Edward I. to the 26th Charles II., which last was acted upon until 1688, when it was recalled by a proclamation of James II. The revenue of the corporation in 1831 amounted to £447. 14s. 11d., which was derived in a moderate degree from the bankruptcies, to the public. This however is independent of the 'Cobb' or harbour dues, which amounted, in the year ending Sept. 30, 1833, to 417L., the disbursements on account of the same during that period being 446L. That the trade of the port is rapidly declining is unquestionable, as from circumstances that in 1831 the number of vessels which entered and cleared with
with the veins at some other parts of their course, chiefly near their minute extremities, and more rarely by larger branches. They have in their interior numerous delicate filaments or valves formed of elastic tissue, exactly like those of the veins [Circulation, fig. 11], and, like them, preventing the retrograde course of the contained fluid. The valves of the lymphatics however are much more closely set than those of the veins, so that when full of fluid, the spaces between them being most distended, they give those vessels a knotted or beaded appearance, by which they are easily distinguished from veins of the same size. In the course of the larger lymphatics there are numerous firm round expansions, called lymphatic or absorbent glands. [Gland.] To each of these there pass two or more lymphatic vessels, which on entering them become extremely tortuous, and after various convolutions and anastomoses, terminate in nearly the same number of branches, which again pass from the gland and pursue their course towards the main trunk.

The Lymph is a thin opaline whitish fluid of a somewhat saline taste, which a short time after it is removed from the body separates into a clear fluid and a coagulum, which is an soft white or pinkish coagulum. It is extremely difficult to obtain, in consequence of the small size of the lymphatic vessels; but in the rare cases in which a sufficient quantity has been procured for analysis, it has presented the same constituents as blood, with the exception of its colour and corpuscles. The coagulum consists of nearly pure fibrine, and the fluid portion is a solution of albumen with alkaline salts.

The physiology of the Lymphatics is explained in the article Absorption.

Endophyly is rather vaguely applied to many different morbid secretions which have a thin watery appearance. Coagulating or conglobate Lymph is the fibrinous matter effused in the adhesive inflammation.[Inflammation.]

LYNCHBURG. [Virginia.]

LYNN, distinguished as LYNN REGIS, or KING'S LYNN, a parliamentary borough, port, and market-town in the county of Norfolk, is situated on the left bank of the river Ouse, a little above its outlets, in 52° 45' N. lat. and 0° 25' E. long., about 88 miles in a straight line north by east of St. Paul's, London, or 96 miles from Shoreham Church by the road through Cambridge, Ely, and Downham Market.

The present town is supposed to have existed before the Conquest. It has been supposed that there was in the Roman time a town on the spot where the village of West or Old Lynn now stands, on the western side of the river, because an old bank the level of which corresponds to its old outlet, or at least near Wisbeach (Wisbeach, or Ousebeach), the Little Ouse, with the Nare, and one or two other streams, having their outlet at Lynn; but the old channel having become obstructed, a new channel was opened into the bed of the Little Ouse, and the waters of the Greater Ouse were thus brought by Lynn. The harbour of Lynn was considerably enlarged by this alteration, the western bank of the river being to a considerable extent swept away, with one of the churches of Old Lynn, and perhaps the site of the original or Roman town. (Richards's Hist. of Lynn.)

Lynn had been, previously to this, a place of considerable trade, and was especially favoured by King John, who granted it a charter of incorporation. It was subsequently granted by Henry VI a new charter, including the incorporation from the feudal superiority of the bishops of Norwich, and changed the name of the town from Lynn Episcopi, Bishop's Lynn, to Lynn Regis, or King's Lynn. In the civil wars of Charles I. the town stood out for the king, but capitulated a.d. 1643, after a siege of three weeks, to the earl of Manchester, the parliamentary commander for the eastern associated counties. A conspiracy was formed soon afterwards to surprise the parliamentary garrison, and the place was indeed attacked by Sir Roger L'Estrange) was kept for some years in prison.

The town at present extends in length about a mile on the east bank of the river, and about half a mile in breadth. It is traversed or bounded by several narrow streams or 'tricks' which drain into many brooks and streams in the town over the Ouse, which is about as wide as the Thames at London Bridge; but there are bridges about a mile above the town over the Eau Brink, which is a modern cut, and the old channel of the Ouse; by which bridges there is communication with West Lynn as well as with Wisbeach and the Lincolnshire fens. There are three defended on the land side by walls, in which were two gates and three gates. One of the gates on the south side of the town remains, and there are a few fragments of the walls, which was outside the walls, still encircles the town. On the north side of the town is St. Andrew's church, with a battery of heavy guns, intended to guard the passage of the river. The town is well paved and lighted, but not supplied with water. The three principal streets are parallel to the river; smaller streets connect them or branch off from the main streets. The town comprises an area of three acres, and is surrounded by some walls. There is in it a market-cross, an octagonal building, erected a.d. 1710, now in bad repair, but having rising to the first story, surrounded by an open gallery. The Saturday market is held in a convenient area near St. Margaret's Churchyard. There are also a cattle and a horse market. The guildhall, an old building of stone and flint, with court-rooms, assembly-rooms, &c. is a borough gaol, but it is not sufficient for the proper clausel of the prisoners. There are an exchange and a custom-house in one building, an excise-office, and a theatre, a hospital, a grammar-school, a college of physicians, and a hospital for the poor, which compriases the united parishes of St. Margaret and St. Nicholas, and the parish of All Saints in South Lynn. The church of St. Margaret is a cross church of spacious dimensions, which was once much larger. It contains portions of the bells, and some memorials of the Various Mohammedans and Persians are found in the interior. The chancel or choir, which is early English, has a fine eastern window, and two octagonal turrets crowning the buttresses at the angles. There are two western towers, one of which formerly had a lofty spire, and there was formerly another tower at the entrance of the transept. The church-house, in the churchyard, was some years back used as a grammar-school, but a new school-house has been since built. The chapel of St. Nicholas is, like the other, long, narrow, and of one story, with a vaulted roof, and consists of a lofty nave with side aisles, and a very pointed or decagonal transept or distinct choir; it is chiefly decorated with perpendicular English architecture, with large and elegant windows. It has a very rich south porch, and a fine west door, which is 17 feet 2 inches in width. A century ago. All Saints Church is also a cross church, but of smaller dimensions than St. Margaret's; the tower, which fell down in 1763 and demolished part of the church, has not been rebuilt. Beside the churches there are 109 almshouses for dissenters, of which the greatest number is in the Hexagonal tower 90 feet high, a remain of the Grey Friars monastery, which serves as a land mark for vessels entering the harbour. The chapel of our Lady of St. Margaret, or Red Mount Chapel, is on the east side of the town, and is remarkable for the size of its tower, which is a small cross chapel of stone, and is erected on walls of a more ancient building of course red bricks, a regular octagon, about 26 feet in diameter, with buttresses at the angles. St. James's Chapel was lately used as a workhouse.

There are several dissenting meeting houses in Lynn.

The population of the borough in 1831 was 13,574, of which a very small proportion was employed in agriculture, which in this country is principally in the manufacture of woollens and linens. They are the only manufactures, and of the latter but little made. The trade of the place is however great. It is the port of that large portion of the midland counties which is supplied by the Ouse. The harbour is shallow, and the chimney of the ocean when it is appeased is very flat and rather intricate. Some parts of this channel are not over one foot deep at low water in spring tides, and following the channel from Lynn seawards, it is necessary to use all the aids of the well-developed bar of Lynn and Boston Deepes. The exports are chiefly cereals, agricultural produce, and a fine white sand found near the town, and used in making glass. A vast
quantity of shrimps, caught on the shores of the Wash, are sent to London. The imports are corn and coal; timber from America; timber, deals, hemp, and tallow from the Baltic; wine from France, Spain, and Portugal, &c. Formerly many ships were fitted out for the Greenland whalefishery, but this branch of industry has been in a great degree given up. Ship-building is not carried on to the extent it formerly was. There is a corn-market on Tuesday, and a market for general commodities on Saturday. There are two yearly fairs.

The corporation under the Municipal Reform Act consists of six aldermen and eighteen councillors, one of whom is elected annually by the borough, and the other by the wards. Lynn has sent two members to parliament since 23rd Edward I. The parliamentary constituency in 1833 consisted of 257 freemen and 608 ten-pound householders; together 865. The parliamentary and municipal boundaries coincide, and include an area of 2,626 acres.

The living of St. Margaret is a perpetual curacy united with the perpetual curacy of St. Nicholas; their joint yearly value is 135l. All Saints is a vicarage, of the clear yearly value of 134l., with a glebe-house. Both are in the archdeaconry of Norfolk and diocese of Norwich.

There are at Lynn an endowed grammar-school, national and Lancasterian schools, and several private schools; a mechanics' institute, a parochial library in St. Margaret's Church, and a public subscription library. There are four hospitals or almshouses, and many other charitable institutions.

LYNX. The name of Lynxex is applied by zoologists to a subdivision of the great genus Felis, or Cats, well marked externally, and having the fur of the tail, and the tip of the nose, of the same color as the rest of the body. They are denoted by the generic name of Lynxex, under the episcopal name of Lynx.

There does not appear to be any considerable difference between the organization of the Lynxes and that of the other Cats; but it is extremely probable that there is some modification in the forms of the tongue, and the organs of the voice generally, to produce the peculiarly powerful noise analogous to what is called 'spitting' and 'swooning' in the domestic cat.

Linnmus, in his last edition of the Systema Naturae, recognizes four species of Lynxes, the Mountain Lynx, Cat-a-mountain of Kay (North America), the Serval, the Lynx, the Cuscin Lynx, the Persian Lynx, and the Libyan Lynx. He states that the third inhabits the vast forests of the north of Europe, Asia, and America; 'not India, though poets have harnessed them to the chariot of Bacchus, in his conquest of country.' The fourth, he says, is an inhabitant of the inner parts of the province (now the State) of New York. To the fifth he assigns the 'reeds and woods in the marshy parts that border on the western sides of the Caspian Sea, particularly about the Castle Kiskiar, on the river Terek,' and the Persian provinces of Gilan and Mazanderan; adding that it is frequent about the mouth of the Kour, the antient Cyrus. Persian Lynx, he says, is so commonly found in the same states to be the localities of the sixth; and Libya and Barbary are mentioned by him as the countries of the seventh. It is doubtful what animals Pennant meant to designate under some of these names. The Serval is not considered to be a Lynx.

Cuvier observes that there are known in commerce, under the name of Loups Cerviers (Lupus cervarius), four or five sorts of Lynxes, which have long been confounded by naturalists, and whose specific limits were not perhaps well known. For the correct arrangement of M. Temminck, and then to observe what part of it is adopted by the Baron.

M. Temminck gives the following species.—

Felix rufa. The timber lynx, or early Clips lynx, is of a silver grey colour, with the ears and the tail of the same shade, and a white patch on the face. It is 6 ft. in length, and 2 ft. 6 in. in height. It is found in Russia, Poland, and Prussia; and has been seen by M. Temminck in the Eger in Bohemia, then to observe what part of the description of the animal, the colour of the adult being reddish-gray, and that of the young light yellow: then there are so many other perfumes to distinguish it, that it would be impossible to distinguish them distinctly.
belly, and insides of the legs pure white; parts whence the whiskers spring, back; back of the ears at the base, deep black, more grey towards the tips, which are tufted with long black hairs. Length, 2 feet 10 inches, of which the tail extends about 14 inches.

Mr. Bennett (Tower Menagerie) describes the Carnac shall be larger than the Fox, and the whole of the upper surface of the body as of a deep and uniform brown, the hairs being for the most part slightly tipped with grey; under side and under parts black, and so fur no more than about 4 inches.

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Lynx, of the antients, and though we lean strongly to this opinion, the reader should bear in mind that the latter evidently used the term to denote various animals, as Gesner well remarked. The "lynces Bacchi varius" of Virgil (Georg., iii. 264) and the skin "maculose lynceus," alluded to by the same author (Ennius, i. 323), can hardly be held to apply to the Caracal, though Ovid’s line (Met., xv. 413)

"Victra maculifer lyncus dedit India Baccho"

may. The truth seems to be that the antients themselves had no very precise ideas of the animal which was accorded to Bæcchus as one of his attributes. The terms Lynx, Panther, and Tiger seem to be all employed to designate this animal or these animals; and if we refer to gems or coins or other ancient monuments, the Lynces, to play somewhat unparдонably perhaps on Virgil’s expression, will be found to be sufficiently varied. The animals represented on the ancient sculptures have generally the round ear of the Lion, Tiger, and Panther or Leopard; and their general contour is that of the Lion, Lioness, or Panther, and Leopard. See, for instance, No. 30, No. 37, in Room 1; Fragments of Terracottas in Room x; No. 8 (Bacchus and Amaulus), Room iv.; No. 40 (Libera, or Female Bacchus), Room vi.; No. 13, Room iii.; and No. 7, Room ii., of the Townley Gallery in the British Museum; and the publication by the Society for the Diffusion of Useful Knowledge, "British Museum: Townley Gallery," vol. i. and ii.

The Lynx’s skin, with which, as well as that of the Panther and Roe, he was represented, appears on the colossal statue of Bacchus in the Elgin collection in the British Museum.

In the edition of the Gemmae et Sculpturae Antiquæ, by Gronovius, we find in the "Carro di Baccho," alluded to in the article Lopaunas, a child in a chariot driving two round-eared spotted great cats; and, in the next gem figured, "Tigro di Baccho," also a corinian, we have a round-eared spotted female great cat with a tuft at the end of the tail, which no Panther, Leopard, or Lynx possesses.

In the coin of Septimius Severus, noticed in Captain Smyth’s "Catalogue," between the figures is a Lynx or Panther, illustrating the verse of Propertius—

"Lyncus ad column voca Amadus tula."

Nor does there occur to us any antient statue, gem, or coin wherein the "Lynx" of Bæcchus is represented with pointed ears tufted at the summit, the characteristic mark of that subdivision of the cats denominated Lynxes by modern zoologists; though, though we may not feel sufficient reliance upon our limited experience to consider this negative evidence as conclusive. The animal in the Palæstine Mosaic, with the word "Lynx" below it, is represented with a tail of cubs, and cannot be mistaken for one of the animals now called Lynxes; indeed, if we do not err, the Abbé Barthélemy observes that this animal bears a strong resemblance to a horse.

That the Ass of Aristotle, Ælian, and Oppian was not one of the doubtful animals above alluded to, but one of the Lynxes of modern zoologists, there can be, in our opinion, no doubt.

Ælian (xiv. 6) gives such a description of his Lynxes, with the tips of their ears tufted, their leaping on their prey, and their tenacity in holding it, as cannot be mistaken; and he quotes two lines of Euripides, to show that the animal which he is describing is the Lynx of that poet. Oppian (Cyneget., iii., v. 84) also gives such an account of his Lynxes as can be referable to no other animal than those on which we are treating. He speaks of two kinds, noticing their preying on hares, and leaping upon stags and oryxes.

Pennant conceived that the European Lynx was the Ass of Ælian and Oppian, and the Chaus of Pliny; with regard to the former, we think, without due consideration. The Caracal comes much more within Oppian’s description than the European Lynx. Oppian expressly notices the ruddy and the yellow colours of his two kinds, but mentions no other. The localities of the Caracal, combined with the other make, it is much more probable that it should be the animal designated as the Ass by Aristotle and Ælian, and one, at least, of the two kinds mentioned by Oppian, if his differences were not, as they well might be, those of climate, or age. Mr. Bennett ("Tower Monographe") thinks

*"Aegyptiacum phæoï et maculose truncum lynceus."


Hercules and Bacchus.

The Caracal.

The Booted Lynx, Felis caligata, Bruce, Temm.; F. Libycus, Olivier; F. Chaus, Thumb, Geoff. (part); Lynx des Marais (part), Cuv. (Fischer).

Description.—Small, total length about three feet, of which the slender tail measures rather more than one-third, or thirteen inches and a half; ears large, red, within, tipped with a pencil of brown short hairs; sole and posterior part of the foot (leg, in common parlance) deep black; upper parts of the body bluish-grey, in some specimens fawn or grey and sprinkled with black hairs; lower parts, including the under parts of the neck and breast, reddish; thighs marked with indistinct bands of rather bright brown; two rather bright ruddy bands on the cheeks; tail at its base colour of the back, black at the tip, and with three or four incomplete rings above it, which rings are separated by intervals of a more or less pure white.

The Female has, generally, the tints more yellow.

The Young have well-defined dark bands upon their sides.

Geographical Distribution.—Africa, from Egypt and Barbary to the Cape of Good Hope; the south of India.
The Chauss, Felis Chaus, tucked, as Lyne do Maruis (part), Cuv.; Mola Rumian Manjur, or Larger Wild Cat, of the Maharattas (Coll. Sykes.).

Dr. Rüppell's figure and description have dissipated the confusion that formerly reigned with regard to this and the preceding species. He states that the Chauss is characterized by having hair all over, and of this covering that which forms the ground-work is woolly, very soft, and plentifully developed; the hairs are not thickly set. The colour of the woolly hair is of a dirty palish ochre-yellow, darker on the back and lighter on the under parts; the hairs or bristles are of the same colour at the bottom, having a dark-brown ring in the middle, and at the tip of a greyish yellow, whitish, or saffron-colour; so that the appearance produced is a mixed colouring of greyish yellow and dirty white. Many of the hairs have a black point, and on the sides, where many lie together, they form pale black perpendicular or oblique spine lines, and here and there single black points. The hairs of the back are of a light ochre-yellow, with points almost of a saffron colour, and form from the shoulders to the tail a yellow stripe, which is darkest on the cross. The nose is black; above the eye is a large white spot, and below it a smaller one of the same colour. A black streak runs from the inner corner of the eye to the nose. The edges of the lips are bordered with black, and a fine white ring encircles them. The eyebrows, cheeks, and bristles of the whiskers are white, and among the latter are a few hairs of a shining black. The inner surface of the ear, towards its outside, is bordered by tufts of hair which are white and yellow; the back of the ear is grey brown, and the tips are brown with terminating black tufts, half an inch in length; the cheeks, lower jaw, throat, neck, and chest are ochreous yellow, and the belly inclines to whitish yellow with darker spots. Externally the anterior and posterior extremities are of the general colour down to the ankles (which are dirty ochreous yellow and black behind), and barred with four or more black transverse bands. The inside of the limbs is yellowish, and there is a large round black spot on the fore-legs. The tail is about one-fourth as long as the body, of a greyish colour, and black at the point, and is accompanied by two black rings between two greyish white ones; but neither of these is very distinct. (Rüppell.)

Geographical Distribution. — North of Africa; how far up the Nile is not ascertained. In the morasses and bushy lowlands that border the Caspian Sea, and on the banks of its tributary rivers. Said to be more numerous in Persia. Noted in Deccan by Coll. Sykes. The female that served for Dr. Rüppell's description is said to have been killed at the Lake of Menzale, in the Delta of Egypt. 

Habits, Food, &c.—This species haunts marshes and boggy regions, and goes hunting during the night after birds, small rodents, and fishes; it seldom climbs trees, and is not easily tamed. (Rüppell.)

The Chauss of Pliny (Nat. Hist., vili. 19), which the Greeks called Raphius, with the figure of a wolf and the spots deriving first shown at Pompey's games, can hardly, even in the date, have been this animal.

European Lynxes.

The European Lynx, Felis Lynx, Linn.: Le Lynx, Buff.—For long, of a dull reddish grey above, with dark reddish grey spots on the sides, the spots on the tail rounder and smaller; whitish below, mottled with black. Length about three feet.

This species varies much. In winter the fur is much longer than in the summer, and has a hairy appearance in the former season, owing to the long hair being then tipped with greyish white. The tail, which is black at the end, is short, not more than six or seven inches long.

Geographical Distribution.—Some authors confine the locality of this species to Europe; others are of opinion that it increases in numbers as it approaches the borders of Asia, which it also inhabits, and abundantly. France is considered its most northern range. It does not seem to be quite clear that Felis Linni of Temminck is not a variety of this species. But Felis catus inhabits the north of Asia, and skins are sent from Moscow. This is supposed to be the kitto of the Swedes by some, while others consider Felis Lynx to be the Gospel of the Norwegians. If these differences should prove to be well founded, it may be that there are two European species, or at least varieties, one inhabiting southern Europe not higher than France and the warm parts of Asia, and the other inhabiting the north of Europe and Asia.

Habits, Food, &c.—The European Lynx feeds upon small quadrupeds and birds, in search of which it often clumbs trees.

This species is supposed by many to be the Chaus tesserarius of Pliny (Nat. Hist., viii. 22) and the Chauss (vii. 19) above alluded to. Both are spoken of as shown in the arena by Pompey, and as coming from Gaul. Dr. Fischer, who is of this opinion, supposes it also to be the Lynx mentioned by Pliny in his chapter 'De Ursis' (vii. 45).

The European Lynx.

The European and northern Asiatic Lynxes and the Canadian Lynx produce the great supply of furs known by the furriers under the name of lynx. The colder the climate the fuller and the more valuable is the fur.

American Lynxes.

We select as our example the Canada Lynx, Felis Canadensis (Geoffr.). Dr. Richardson ('Fauna Boreali-Americana') states that the early French writers on Canada, who ascribed to this species the habit of dropping from trees on the backs of deer, and destroying them by tearing their throats and drinking their blood,
LYN, or LION, a city in France, formerly the capital of the district of Lyonais, now of the department of Rhône, situated at the confluence of the Rhône and the Saône, in 45° 46' N. lat. and 4° 50' E. long.; 240 miles in a direct line south-east of Paris; 286 miles by the road through Sens, Auxerre, Autun, and Châtillon-sur-Saône; 286 through Fontainebleau, Nevers, Moulins, and Roanne; and 303 by Troyes, Dijon, and Châtillon-sur-Saône.

The common opinion is that Lyon was founded by L. Munatius Plancus, commander of the legions in Gaul at the time of Julius Caesar's death, who settled here the people of Vienna (Vienne), who had been driven from their own home by a revolt of the Allobroges, about 42 B.C. It seems improbable however that a situation so advantageous should have been entirely neglected by the Gauls; and the Celtic name given to the place, Lugdunum or Lugdunum (a name common to two other towns, Lugdunum Batavorum, now Leyden, and Lugdunum Convenarum, now St.

In reference to the allegation that Charlevoix refers to this animal when he uses the term Carcajou, the fact is that in the compilation of his account he describes the Elg as feeling to the water the moment he is seized for the Carcajou, who cannot endure the water; quite his hold immediately, but if the water happen to be at too great a distance, he will destroy the elk before he reaches it.
Bertrand de Comminges), prevents our ascribing its origin wholly to Plancus.

Cæsar does not mention Lugundum, which has furnished one of the reasons for denying to the town any higher antiquity than the time of Plancus; but the reason seems so probable.

Almost thirty years after the settlement of the Viennese, Plancus established at Lugundum a Roman colony, or rather a municipium; such at least is the opinion of Father Menestrier, the Jesuit, in his erudite history of Lyon. Others make the settlement of the Romans on the site of the Roman colony to have been simultaneous.

Augustus was in Gaul about the time when Plancus is supposed to have established his colony, and appears to have made Lugundum his place of residence for some time, an indication of the rising importance of the place. Strabo, writing a few years after, describes it as the most populous city of Gaul, except Narbonne (iv. 192, Casaur.). It was the great mart of the Romans, who, had even at that early time, a mint for coined gold and silver money, and it gave name to one of the four great divisions of Gaul. An altar was erected here by sixty of the nations of Gaul, by common consent, in honour of Augustus.

Coin of Lyon.


Both Tiberius and Caligula appear to have favoured the town. The latter visited it, and instituted games professedly in honour of Augustus, about A.D. 40. The emperor Claudius, himself a native of Lyon, rested it from the rank of a municipium to that of a colony, in the strictest sense of the term, and regulated its local government. But its greatness received soon after a terrible blow; it was utterly destroyed in a single night by fire, originating, it has been conjectured, from lightning inflaming the wine. The town, A.D. 53, was rebuilt, according to other calculations, about A.D. 64 or 65. The rebuilding of the city was promoted by a grant from the emperor Nero, to whom the citizens manifested their affection and fidelity in his dowry. Upon Vitellius assuming the purple, they enmasse his cause; and he stayed some time at Lugundum on his way from the Rhenish provinces to Rome. Domitian, afterwards emperor, came to this city on the overthrow of Vitellius, to establish the authority of his father Tiberianus in Gaul.

In the contest of Clodius Albinus with Septimius Severus Lugundum became the scene of contest. In an engagement near this town Albinus was totally defeated and slain (A.D. 197). Lugundum, which had afforded a retreat to the vanquished, was pillagéd by the victor, who put most of the inhabitants to the sword, and burned the town, which Herodian describes as being then large and wealthy. In the reign of Probus, Proculus was elected emperor by the people of Lugundum, who had been ill-treated by Aurelian, and were fearful of the severity of Probus. The latter however defeated Proculus, and caused him to be put to death (A.D. 280).

The usurper Magnentius, having been defeated by Constantine, sole survivor of the sons of Constantine, took refuge in Lugundum, which was seized by the townsmen, who thus made their peace with Constantine (A.D. 353). Magnentius slew himself to avoid being delivered up. While Julian held the government of Gaul under Constantius, the environs of Lugundum were ravaged, and the town nearly captured by the Alamanni. The emperor, however, a usurper Maximus, was overtaken and slain at Lugundum (A.D. 383). In the beginning of the fifth century, in the reign of Honorius and his successors, the Burgundians again established themselves on the south-eastern part of Gaul, under the sanction of the emperors, who employed them to oppose other barbarians of a fiercer character. [Burgundians'] On the overthrow of the Burgundian kingdom, Lugundum came into the power of the Franks.

Lugundum, during the Roman period, occupies a considerable place in ecclesiastical as well as in civil history. The Gospel had been early introduced into this part of Gaul, and here a severe persecution raged in the reign of Marcus Aurelius Antoninus (A.D. 172 or 173). The churches at Vienna (Vienne) and Lugundum sent a relation of their sufferings to those of Asia and Phrygia. This account, ascribed by some to Irenæus, is written with simplicity and beauty, and is one of the most affecting passages in the writings of Christian antiquity. [Catherine of Sinai, 'Library of Useful Knowledge.']. Pothinus, bishop of Lux, and perhaps the person who introduced the Gospel in these regions, was one of the martyrs in this persecution. His successor was Irenæus, one of the most eminent of the early fathers.

In the division of the Frankish kingdom under the Merovingian princes, Lyon, as we may now call it, was included in the kingdom of Bourgogne or Burgundy (A.D. 541-11), but the city was depopulated by a fearful pestilence, and the result of the period of the Carolingian empire, was that it became a royal residence, was unfavourable to it. In the division of the Frankish empire among the grandchurls of Charlemagne (A.D. 843), Lyon, with the district of Lyons, fell to the lot of the emperor Lothair, and the subsequent division of his states (A.D. 855) it fell to Charles, king of Provence, who made it his usual residence. On his death (A.D. 863) it was seized by Charles le Chasteau, king of France. On the re-establishment of the kingdom of Bourgogne under the kings of France (A.D. 798) Lyon received no formal recognition. In the troubled period of the later Carolingian kings of France, Lyon was subject alternately to that kingdom and to the kingdom of Transjurane. It was in these troubled times that the counts or governors of Lyon were established; an abbeys of several general councils was held in the city of Lyon so much as over the districts of Lyon and Beaujolais.

From about A.D. 955, Lyon was under the kings of Bourgogne Transjurane, and, upon the union of that kingdom with the Germanic empire, A.D. 1035, it became part of the domains of the emperors. Under the kings of Bourgogne the counts of Lyonnais exercised the functions of governors. The city was not however considered as a part of their hereditary fief; and in the reign of Robert III. (1081) it was created a duchy, independent of the petty forces of the counts of Ile-de-France, and the lordship of the city, which appears to have remained annexed to the see. The emperor Frederick Barbarossa, in the 11th cent. confirmed the privileges of the bishops, extended it over all that part of their diocese which was in the kingdom of Lyonnais (i.e. on the east of the Rhône and Saône), and made them princes and emperors. The archbishops received the title of exarch; they were allowed free and independent jurisdiction, except so far as it was subject to the supreme authority of the emperial court, and the general laws of the kingdom. This archbishopric was an object of jealousy of the then count of Forez, and stirred up a war between him and the archbishop. Soon after this time Ferwaldus, or Waldenais, one of the reformers of the church in the 12th and 13th cent., also attempted an attack on the archbishopric.

At Lyon was held, A.D. 1245, the thirteenth general council, in which the pope Innocent IV. pronounced sentence of excommunication and deposition against the emperor Frederic II., on the ground of sacrilege and heresy. A crusade for the recovery of the Holy Land, and preached by him, was determined to render aid to the emperor Baldwin of Constantinople.

The citizens of Lyon appear at this time to have formed a powerful body. There was considerable trade carried on between the Rhone and Saône, and the commerce of the city was not confined to the products of these two rivers, but were by no means satisfied with the government of ecclesiastical rulers. Learning that Philippe II. Augustus had established or extended the power of the monastery of Paris, they determined (in the early part of the thirteenth century) to form the city of Lyon into a principality, which was accordingly done. The differences between them and the archbishop's chapter at last led to open hostilities; and the king of France (St. Louis) being one of the arbitrators appointed in order to heal these disorders, his successors managed matters in this city on the principal of lymphatic, which became the de facto government. After the death of Philippe IV., Le Bel, received the citizens of Lyon as his especial safeguard and protection. The archbishop struggled stoutly for their rights; but in the reign of Philip V., the regular authority was firmly established. In the year 1274 another attempt was made upon Lyon: at which the Greek church was proscribed and to the Latin church, and several other important acts brought under notice.
Lyons was the scene of great disturbances.

In 1834 Lyons was the scene of great disturbances.

Unions for the protection of their interests had been formed by the artisans, who took the name of Mutuels; and a reduction of wages by the masters occasioned a general turn-out. Political feelings mingled with the irritation caused by these circumstances; acts of disorder were committed by the interferences of the municipal authorities, and several arrests were made. The determination to bring the parties arrested to trial led to an insurrection. The rioters fortified themselves with barricades, took possession of the suburbs, and the place was contested for two days, with a loss of more than that number to the insurgents, who, finding it hopeless to continue the contest, laid down their arms.

Lyons is situated at the confluence of the Saône with the Rhône. The general direction of the Rhône previous to the junction is from east to west, but in the city and vicinity its course is from north-east to south-west. The general direction of the Saône is from north to south, but it makes a bend, convex to the east, round the hill Fourvière just before its junction with the Rhône. The two rivers enclose between them a long tongue of land extending to the south or south-west, on which part of the city is built. The junction of the streams formerly took place just south of the then existing rampsarts built along the junction; but the towns of Mognat, or Mogniat, and several shoals; but about sixty years since (A.D. 1775) a new and straight channel was cut for the Rhône, carrying the point of junction above a mile farther down the stream, converting a considerable part of the island of Mogniat and the shoals with the main. The prolongation of the bed of the Saône between the former and present points of junction was formed on the western side of what had previously been the bed of the united streams. By the gradual sediment the ground was gained, over which new streets and buildings are continually extending. Another considerable part of the city is on the hill Fourvière and the base of it, along the right bank of the Saône; it is surrounded by elevations and is connected with the rest of the city by numerous bridges, the most important of which is the Pont de la Guillotière, forming the limit between the two rivers. These bridges run along the hill of La Croix Rousse, which rises on this side, and which occupies the whole area of land between the rivers. The city is divided into two districts, the one on the right bank of the Rhône, called, from the architect who planned it, the Presqu'île (or Peninsula) Perrache.

The Rhône has a medium breadth of about 500 feet. Its current is very rapid, and it is liable to sudden and great disturbances; to prevent the disastrous effects of which, an embankment has been formed to protect the suburb of La Guillotière. There are three bridges over it: the Pont Morand, a wooden-bridge; the Pont Charles X., which has the foundation of the pier of stone and the other parts of wood; and the Pont La Croix Rousse, a stone bridge, which is the main suburb of the same name. On the right bank of the river is a range of quays, not much used for commercial purposes, and partly planted with trees; south of the city, on the same bank, an avenue extends along the Presqu'île Perrache, the Presqu'île being another avenue, extending northward from the quays, forms the commencement of the road to Bourg-en-Bresse and Geneva. These quays and avenues form a tolerably direct line of more than three miles in length, and near the mouth of the Rhône a promenade, the 'Cours Bourbon,' and several public gardens and houses of entertainment much frequented on holidays.

The Saône has a slower current and a more winding course than the Rhône. It skirts the hill of Fourvière,
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projecting crag of which stretches down to the river. A passage was made by the Romans along the bank by cutting away part of this crag, which derived from that circumstance the name of Petra Excisa, now Pierre-Scie. On the summit of the crag stood a Gothic castle, long the residence of the archbishops. One wing of the city. After the fall of the League, in the sixteenth century, it was made a state prison; and demolished after the siege of 1793. The crag, which consists of granitic rock, is perpetually diminishing, being quarried for building. Both banks of the Saône are lined with piles of stones and have several docks or floating boats. It is crossed by seven bridges in the city. The Pont de l'Archevéché (formerly Pont du Tilsit) and the Pont du Change are of stone, and are remarkable, the first for its elegant architecture, and the second for its antiquity. The Pont St. Vincent and the Pont Volant are wholly of wood. There is one suspension iron-bridge and it was designed to throw another over from the suburb of Vaise that of Serin. We know not if this design has been executed.

Besides these seven bridges, there is one below the city, partly of stone and partly of wood, just at the junction of the Saône with the Rhône. Over this bridge the railroad from Geneva to Lyon passes. The traffic by boats on the Saône is very great.

Between the Rhône and the Saône, in the Presquile Perrenache is a cut with a basin for boats; another large basin is in the suburb of Vaise on the Saône.

The ancient part of the town has narrow, wet, and dirty streets, paved with inconvenient round or projecting stones, and lined on each side by a row of curbstones, designed not for footpaths, but to preserve the shops from accident by carts or other carriages. The houses are old and gloomy, six or seven storeys high, with narrow courts and yards into which the rays of the sun rarely penetrate. They are chiefly built of stone, and are of solid construction. In the newer parts of the town are some handsome streets. The houses on the steep streets, with good balconies, those on the banks of the Saône are older than those on the bank of the Rhône. The whole number of the streets was variously estimated ten years since at from two hundred and fifty to three hundred. The houses and other open spaces amounted to near sixty. The principal is the Place Bellecour, otherwise Place de Louis le Grand. It is above 300 yards in length and has a varying breadth of from about 200 to 240 yards; it is planted with lime-trees, and has in the centre a fine equestrian statue of Louis XIV., in the place of one destroyed at the French Revolutions. The square, two hundred and forty yards, in which the Place, and the fine houses which surrounded it, were destroyed after the siege of 1793, and the Place remained long in ruins. In the north of the city is the Place des Terreaux and at the southern extremity the Place Louis XVIII. The lowest quarter of the town is the residence of the most wealthy people; there are many good houses in the quarters of St. Chir, Les Terreaux, Perreache; the quarter of St. Jean, on the right bank of the Saône, is occupied principally by the members of the bar. Lyon is remarkable for the contrast frequently presented by the mean hovels which may be seen in immediate juxtaposition with the most splendid mansions.

Of the public buildings the cathedral is one of the most remarkable. The western front, which is praised by its magnificence, is on the whole heavy, but it has three richly ornamented doorways, and over the central doorway a fine circular window. The interior of the building is of simple but striking architecture. In this cathedral there is a large clock, which shows the day, the month, the hour, the minute, and the second; the sun's place, the phases of the moon, and the saints' days of the calendar. It is now out of repair. The church of the Chartreux, on the slope of the hill of La Croix-Rousse, in the northern part of the city, has a good dome and a handsome façade; that of St. Irene (Iremens), rendered a mere shell by the siege of 1793, has a handsome front; that of Enay is remarkable for four granite columns which support its cupola, and dedicated to St. Anthony of Padua; that of St. Augustine, that occupied the same site; that of St. Nuiez is of Gothic architecture with a Grecian portico, the work of Philibert Delorme; that of the Collège has a fine nave, and that of St. Just is a modern building in good taste and of elegant proportion. The churches of Lyon generally are

but little worthy of notice. The Protestants occupy a church a building originally designed for an exchange.

The archbishop's palace, though it has some fine rooms, the finest public building in Lyon. It has a front with a large architrave, which is one of the oldest in France; it was built in the sixteenth century, and is considered the finest building of the kind in Europe, except that of Amsterdam. It forms one side of the Place des Terreaux, another side is formed by the former Benedictine abbey of St. Paul, or St. Paul-Guillaume, in the east and west parts. It is used as an exchange, a repository for several museums or collections of objects of science and art, a place of meeting for several learned societies, and a school of instruction in drawing, anatomy, &c., and for other purposes.

The prefect's office, formerly a Dominican convent, is remarkable for its extent than its beauty. It is a tolerably extensive garden. The Hôtel Dieu, or hospital, and the Hôpital de la Charité, destined for foundlings on the aged and infirm poor, front the banks of the Rhône; the former is a building of noble aspect and appearance, with a fine dome in the centre. There are several theatres; the Grand Théâtre built by Soufflot has been lately replaced by a new building.

The city of Lyon has 145,675: the number probably includes the inhabitants of Vaise, La Croix Rousse, and La Guillotière. In 1831 the population of Lyon was 133,715; that of the commune of Vaise was 4237 (of whom 3596 were in the town); that of the commune of La Croix Rousse was 18,294 (of whom about 12,000 were in the town); and that of the commune of La Guillotière was 18,294 (of whom about 15,000 were in the town): together 165,439. In 1836 the population of Lyon was 130,491; and if we estimate the increase of population in Vaise, La Croix Rousse, and La Guillotière at 2000, we shall have a total population of 180,491. A large proportion to that of Lyon, the aggregate population of the city will be little short of 1,500,000. Lyon is the greatest manufacturing town in France. Its staple manufactures are silk, which is highly esteemed for durability of the coaters and tambours, and good quality. Mixed fabrics of silk and cotton and of silk and wool are manufactured; also slawas, crepes, silk stockings, gold and silver stuffs, ribands, and embroidery. The greatest part of the silk produced in France is worked in and near to Lyon; and a large supply is drawn from Italy. The wool from the sorows reared in the immediate vicinity of the town is of a pure white. In 1828 the number of factories or smaller establishments for the silk manufacture in and near to Lyon was 11,491; the number of looms was 16,829, to which may be added, for the suburbs and the communes within about fifteen miles of Lyon on every side, about 5000 or 6000 looms: making in all 24,000 to 25,000 looms for silk manufacture in and near to Lyon. The manufacture of silk is considerable of silk; in 1836, the number of looms was 24,000; 9241 were in Lyon; 8989 were in the communes within about fifteen miles of Lyon; and 5670 were in the suburbs of Lyon. There are some factories for the manufacture of printed cottons, paper hangings, artistic flowers, iron goods, plate, jewellery, glass, and hardware. There are breweries and carriers' shops. Trade is carried on by water, and is considerable. One of the most considerable article of trade: they are brought chiefly from the departments of Ardèche, Loire, Isère, and Var, and sent from Lyon to various parts. The city is the emporium of the fine wools of Elbour, Sedan, and Louviers, which are brought by the high and low roads, by the Rhône, from the lower lakes, and by sea from Brest, the ports of Brittany, and by the Mediterranean from the coast of Italy. The manufacture of printed cottons, paper hangings, artistic flowers, iron goods, plate, jewellery, glass, and hardware is considerable. Wealth is more equally diffused than in other commercial towns, and capitalists are less subject to great vicissitudes. Luxury has made less progress here than in similar places. Fondness for the country is as
characteristic of the inhabitants. The beautiful environs of the town are studded with country-houses; and on holidays the vast population pours out of the town in swarms to enjoy a purer air. Science and art are more cultivated than in most other towns on the same coast; they are particularly interesting for their bearing on commerce and manufactures. The town is the seat of an Académie Universitaire, the circuit of which comprehends the departments of Ain, Loire, and Rhône. There is a public library of 92,000 volumes and about 8000 periodicals. There are schools of theology and medicine; a seminary for the priesthood; a royal academy of sciences, belles-lettres, and arts; and various other institutions for the promotion of knowledge. There are three hospitals, a subscription dispensary, a maternity society, a deaf and dumb institution, and many other charitable institutions. The abbey-church of Lyon (now united to that of Vienne) is very ancient. The diocese comprehends the departments of Rhône and of Loire, the valley of the Saone and the bishopric of Autun, Langres, Dijon, St. Claude, and Grenoble. There are a Protestant consistory and a Jews' synagogue. The Court Royal of Lyon has under its jurisdiction the departments of Ain, Loire, and Rhône: there are two prisons in the town, and several subordinate judicial courts and fiscal offices. There are a mint, a royal powder refining-house, and a royal knife manufacturing. Lyon is the capital of the nineteenth military division, which includes the departments of Rhône, Loire, Cantal, Puy de Dôme, and Haute Loire.

Among the eminent natives of Lyon were the Roman emperors Claudius and Caracalla, the poet Sidonius Apollinaire, the architect Philibert Delorme, who built the Tuileries, the botanist Jussieu, and Murée Suchet.

The area of the province of Lyon comprehended an area of 401 square miles; it had, in 1651, a population of 292,370; in 1836, of 330,044. It contains 126 communes, and is divided into 16 cantons, or districts under a justice of the peace.

Mr. Swannom arranges the form as a subgenus of Tamaia (Puff Birds) [Barbets, vol. ii., p. 434], under the family Halyconidae. [Kingfishers, vol. xii., p. 227.]

LYRA (the Harp), one of the old constellations, representing the lyre of Mercury (Auratus), of Mercury or of Orpheus (Hyginus). It is surrounded by Cygnus, Aquila, Hercules, and the head of Draco. Its brightest star, ce, also called Vega, is a conspicuous object. If a line be drawn through the middle of Cassiopeia, the pole-star, and the middle of Ursa Major, this star may be seen nearly in the perpendicular to that line drawn through the pole-star. When Aquila is known, a line drawn through its four neighbouring stars, &b, b, a, and y, will pass through a Lyra. Its principal stars are as follows—

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LYRA. (Ornithology.) [M. N. R.]

LYRE (λ) μορφή, a musical instrument of the stringed kind, known, under various names, from the earliest historical period. It is described in its various forms, some to Mercury, some to Apollo; but it is possible that they may have had it from the Egyptians, and the Egyptians from Asia. Indeed Holy Writ leads us to conclude that it was of antediluvian origin. Jubal, the seventh only in descent from Adam, was "father of all such as handle the harp and organ;" and as by the word λυρα we are to understand either the lyre itself, or some instrument analogous to it, we must, on such authority, grant to the son of Lamech the merit of being its inventor. In our version of the Scripture, μινορ (μινορ) is rendered by the word harp, while the Septuagint and Vulgate give the Hebrew term a Greek form—ἐλαφρά, cithara, a word generally, though we believe erroneously, supposed to be synonymous with λυρα, or lyre. ERRONEO, we must have been in our conclusion that λυρα and Cithara (or guitar) were generic terms; the first being the parent of all instruments of the harp kind, having no neck, or finger board; the last, of all those furnished with a neck, and which finger-board probably was divided by facts.

LYRE. (Musical.) [G. A. T.]

It is true that in all the remains of Grecian art, no instrument with a neck is to be found. Artists perhaps preferred the more compact and elegant form of what is now called the lyre. The name was given to the Grecian lyre. The same name is also given to the moderns; witness the statue of Handel in vasehall Gardens, as Dr. Burney well remarks. Montfaucon tells us that he had examined the sculptured representations of six hundred ancient lyres and citharas, and found not one with a neck. But had the learned father—who was a most exact and indefatigable antiquary—lived in the present day, he would have met with abundant evidence in Egypt to prove that instruments with necks—instruments of the guitar kind, such as were subsequently called fiddles—existed at least three thousand years ago. The greatest artist says Mr. Wilkinson [Manners and Customs of the Ancient Egyptians], was in use at the earliest period of the Egyptian history; "those at the pyramids are apparently of a date long previous to Osiris, or the arrival of the 'Arab.' And in the ellinik's splendid war, 'I Monticelli delli Egitto e della Nubia' are many engravings, some coloured, exhibiting instruments of great antiquity, resembling in essential points the modern guitar, or lute, with a neck, but this much elongated.

The most antient Grecian lyre—said to have been formed by Mercury from the shell of a tortoise, and of which the subjoined is a representation, as given by Mercenne—

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had but three strings. That of Terpander (from Blanchinus) had seven, and took the annexed form—

Timoleon increased the number to eleven; and others were gradually added, till they reached sixteen, fifteen of which rendered the principal sounds in the Greek scale, and the sixteenth was the Proslambanomenos, i.e. the added or supernumerary sound.

LYRIC POETRY is commonly understood to be that kind of poetry which is composed in order to musical recitation, but the epithet has been transferred to all kinds of verse partaking in any degree of the same nature as that to which it was at first applied. Thus we hear of musical ballads, the greater part of which might with as great propriety be called epic, and of lyric measures in Horace, where there is no ground to suppose that they were sung, and no fitness for the purpose of musical rehearsal. In a former article [ Epic Poetry] we have endeavoured to point out a distinction between epic and lyric poetry more satisfactory than common language allows; but there is surely no impropriety in giving a decided meaning to words which have usually been understood in a confused sense, particularly when, as in the present case, the same senses have been applied to each, so as not only to confuse but to confound them. Pursuing then the course which we have pointed out, lyric poetry must be defined as that class of poetry which has reference to and is engaged in delineating the composer's own thoughts and feelings, in distinction from epic poetry, which details external circumstances and events.

A very slight glance at the growth of society will be enough to show us that lyric poetry is posterior in point of time to epic. Men think of war and hunting, of anything and everything which surrounds them, before they look at themselves; and consciousness in the child comes much later than the exercise of all the senses, so that it learns the names of many objects before it begins to call itself 'I'; so in the development of national life the epic period comes before the lyric. Homer and Hesiod were favourites for centuries before the invention of an epigram or a chorus; the narrative novel or romance precedes the novel of manners, and our own epical cycles existed long before anything in the form of lyric poetry.

The history of lyrical poetry is perhaps subject to greater difficulties than any other species of composition. In that nation where it attained to its most perfect growth, it is precisely that class of literature which is to us, except in regard to one author, a total blank. Pindar is nearly all that remains to us of the whole lyre poetry of Greece, and great as his reputation has deservedly been, we have no reason to consider him as paramount to his class, and very good reason for denying to him what has commonly been considered his right, that of presenting us with the pure type and example of a lyric poet. With almost as good reason might he be called an epic writer, for many long passages occur in which he does not deviate from the path of narration, while in others again he is all but a dramatist. Thirlwall has observed, too, that even if we should not feel that his genius was unequaled, still it could not be replaced the freshness which we might expect to find in the earlier shades of the lyric vein, nor that peculiar charm which distinguished each of the other poets, nor that which belonged to the several schools formed by the great tribe or branches of the nation. We have thus to deplore in Tyrannus the loss of writings which kept up the patriotism of a younger age; in Hippodes and Archilocho, the circle of Greek satire; in Ammianus, the first poems on the fruitful subjects of love and feasting; and in Minnesingen the Greek elegy, that offspring of the sadness which reflection on the fleeting nature of human enjoyments produces. But most of all we have to regret that scarcely any remains of that link between epic and lyric poetry was the origin of Greek tragedy. This was perhaps the national form of lyric poetry among the Greeks, the more so as it had the most part in their individual imaginations, which gained popularity in proportion as they found sympathy, much in the way in which modern poetry makes its way into notice. Ulrici, in his very elaborate work on the history of Greek poetry, gives us as the principal sources from which lyric poetry was derived—religious worship, and the mirth of the people; the first of which elements is traceable in one of the two kinds of epic poetry, which we may call hieratic, while the second is that in which consists the fervent feeling of the lyre and lyric. The Greek lyre in the Doric, Aeolic, and Ionic kinds: correspond nearly, the first to what is to be found in choruses; the second to love-songs, such as Sappho's drinking-songs, or scolia; and the third to the elegy, or the lament. The famous songs of Callimachus, paeons, and others. We have no space to do more than notice his division of the subject, but the whole work repays a far closer attention.

It has been remarked that both in epic and in lyric poetry the Greek poet devoted nothing like a school of poets, we in Greece there was a regular progression from epic to lyric, from one school to another, each of which supplied many individuals who rounded a principal figure in each class. Virgil and Lucretius are the types of Roman epic poetry, and Horace and Propertius of Roman lyric. The history of Roman lyric would be little else than to enumerate every man who wrote verses from Ennius downwards, I almost every one of them attempted that as well as all the others. The whole of the Latine poetics is a Greek model, even the most original of the Latine having borrowed his metres, though he might make something else his own.

It might perhaps startled any one to be told that such a branch of literature as in the modern world is considered incomparably the most important branch of Roman poetry is lyrical. But a careful review of the definition with which we started cannot fail to explain this. Satire is essentially lyrical or subjective in its nature; the Roman satire more so than the Greek, insomuch as it is only less the expression of the nature of the mind and the noble spirit of Rome in her best days, and it is astonishing how far this liberty was employed. Xenophon was in earlier days we cannot tell, except as far as expression is concerned, for the words may mean anything, but we should be inclined to suppose that it took much more of the nature of lampoon than satire. To the satire we may add its powerful auxilliary, the epigram, the same in name but very different in nature from its Greek fellow, which ought rather to be called a graph, or even epitaph.

The Horatian lyrics merged in the later ages of empire into a species of poetry much though undervalued, neglected, we mean the rhyming verses of the masks, which contain much Horatian substance, and are expressed in most sonorous verses. They are curious as affording the best specimens of
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‘γεναινει μεν άριστον ἀλήμενον
dίδυμον δι', καθός φανε γνώσε\nτο τρίτον δι', πλούτων ἀνέδωσ\nκαι τό πταινόν, ἤρθεν τοις μεν φιλαν.

Hesiod would probably have spun them out into five or six hexameters, inserting epithets and expanding at pleasure, but concerning each from the expression of a moral sentiment in which the heater is supposed to agree, into the inculation of a precept of prudence which he is to follow. (Hermann, *Eleantia Doctrina Metrice*)

LYRICO-PHALUS. [Iguandri.]  
LYRICO-TRIADONIKE.  
LYS. (BELGIUM; SCHELDE.)  

LYSANDER, a Spartan, who rose to eminence towards the end of the Peloponnesian war, and was placed in command of the Lacedaemonian troops on the coast of Asia Minor, b.c. 468, 464. At the battle of Deluxe, he defeated the Athenian fleet, commanded by Antia, as lieutenant of Archidamias, at Notium. In September, 408, he was superseded by Callicratidas; who was defeated and his fleet destroyed by the allies. Lysander then petitioned that Lysander might be re-appointed. It was contrary to Spartan law to entrust the fleet twice to the same person; but this difficulty was evaded by nominating another person commander-in-chief, and sending Lysander as a lieutenant with the command in the western waters. Whereupon he marched into Attica and invested the city, which, unassailed, was reduced by the sure process of famine. The capitulation being settled, b.c. 404, Lysander had the proud satisfaction of entering as a victor the Periclean, unviolated by the presence of the Persians. He was exalted to the highest society and renown threw his superior into the shade; and an estrangement resulted, in which Lysander behaved with temper and wisdom. About b.c. 396 he retired to Sparta. In the following year, on occasion of a quarrel with Thebes, he was sent in Ptolemy to collect their allies, the northern allies, a task for which his name and popularity rendered him peculiarly fit. Having done this, and being on his way to join the Lacedaemonian army, he was taken by surprise, and slain by the Thebans, at Haliartus in Boeotia. The force which he had collected dispersed, and the war came at once to an end, with no credit to the Lacedaemonians, b.c. 393.

It is said that, urged by ambitious hopes, he meditated a scheme for allying his native northern allies with the Persians; and, as a disguise, he offered to join the Spartan throne to the Persians; and, as a disguise, he offered to join the Spartan throne.
Lyssipus, one of the most celebrated statues of antiquity, was born at Sicyon. He was particularly distinguished by his statues in bronze, which are said to have been superior to all other works of a similar kind. He introduced great improvements in his art, by making the head smaller, and giving to the body a more natural position than was usual in the works of his predecessors. It is said that he was so anxious to obtain his works; and Alexander reported to have said, that no one should paint him but Apollo, and
no one represent him in bronze except Lysippus. (Plin., vii. 37; Cic., Ad Dion., v. 12.) His reputation survived his death; many of his most celebrated works were brought to Rome, in which they were held in so much esteem, that Tiberius is said to have almost excited an insurrection by removing a statue of Lysippus, called Apoxyomenos, from the warm baths, where it had been placed by Agrippa, to his own palace.

Lysippus is said to have executed 610 statues, all of the greatest merit (Pliny, xxxiv. 7); many of which were colossal figures. Pliny, Pausanias, Strabo, and Vitruvius have preserved long lists of his works; of which the most celebrated appear to have been, various statues of Alexander executed at different periods of his life; a group of equestrian statues of those Greeks who fell at the battle of the Cynosseus; the Sun drawn in a chariot by four horses at Rhodes; a colossal statue at Tarentum; a statue of Hercules, at Abyzia in Acharnania, which was afterwards removed to Rome; and a statue of Opportunity (An Nephes), represented as a youth with wings on his ankles on the point of flying from the earth.

Among the numerous pupils of Lysippus, the most celebrated was Chares, who executed the colossal figure at Rhodes. (Plin. H. N. 12. 8; Pausanias; Juni. De Pugna Vetaram, p. 109-110.)

LYSTMATA. Rivo's name for a genus of Macrurus Daplid Crustaceans, allied to the Shrimps.

LITHRAEAE. E, a natural order of polytelous Exogens, the essential character of which is to have a tubular calyx with conspicuous complete ribs, petals inserted into the orifice of the calyx, stamens springing from its base or middle, and a superior peltiform ovary. They are most frequent in the Mediterranean and Oriental regions. A few plants of any interest. Some of the genus Lageretria are handsome Indian large-flowered bushes, represented in South America by Diphusula; a few Ammannias have acrid leaves, which act as vesicants when applied to the skin; and the Honé dye used by Oriental women for their nails is the juice of the fruit of Lawsonia. Lythrum Salicaria, the subject of the preceding cut, is an English type of the order.

LYTTELTON, GEORGE LORD, born in January, 1744, the eldest son of Sir Thomas Lyttelton, Bart., of Hagley, in Worcestershire, was educated at Eton, and Christchurch, Oxford, at both of which his scholastic acquirements and promising talents gained him much credit. After travelling on the Continent for some time, he entered parliament in 1770, connected himself with the leaders of the opposition to Sir Robert Walpole, and acquired eminence and weight as a parliamentary speaker. He was a favourite of Frederic, Prince of Wales, at whose court he filled the office of secretary. After Walpole's retirement, Lyttelton was made a lord of the treasury, in 1744. He was raised in 1756 to be chancellor of the exchequer, a place to which his qualifications were but limited, if the story be true that he never could comprehend the simplest rules of arithmetic. He resigned that office to Mr. Walpole in less than a year, and went out of office altogether on the dissolution of the ministry in 1759; at which time (his father being dead) he was raised to the peerage by the title of Baron Lyttelton of Frankley. The rest of his life was chiefly devoted to literature. He died in 1775.

Lord Lyttelton's literary talents in early life won the affection of Pope. His poetry, though elegant and tasteful, does not rise above mediocrity; it has however gained for him a place in Johnson's 'Lives.' Of his prose works the chief are: 'Observations on the Conversion and Apostleship of St. Paul,' 1747, the result of those studies by which, in middle life, he was converted from scepticism into a sincere and zealous believer in Christianity. This work has enjoyed a high reputation. 'Dialogues of the Dead,' 1760, a popular and amusing work. 'History of Henry II.', to which is prefixed an account of the Revolutions of England, from the death of Edward the Confessor to the birth of Henry II., 1764. This is a learned, laborious, and valuable work, the fruit of twenty years' research. Miscellaneous Works, 1774. Poetical Works, 1785. Lord Lyttelton took a leading part, by his 'Account of a Journey in Wales,' in opening the eyes of the English to the beauties of their own country; and by the tasteful and expensive improvements in his celebrated park at Hagley, in introducing the modern practice of landscape gardening.

Lord Lyttelton's private character was exemplary; his acquirements extensive; his judgment as a politician and man of the world penetrating. But his indolence prevented him from doing justice to his own powers, exposed him to imposition, and led him into some embarrassments. His son Thomas lord Lyttelton, who died early in 1779, also possessed great abilities, but wasted and debased them in a profligate and unhappy life.
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MAAR, the German term for certain extinct volcanic craters, especially in the Eifel, which are filled with lakes. Others not different in origin are called See. Each term alludes to the watery expanse. Thus the Lacher See, the Maars of Daun, Ulmen, &c., are all volcanic craters, situated on eminences, but sunk so much below the level of the country as to have received the surface drainage, and to have formed a sort of most remarkable and have no apparent outlet for the waters are considered by Dr. Daubeney specially to have claims to the title of 'Maars.'

MAAS. [RHEIN.]

MAASLUYS (or Maaslandluys) is a pretty considerable town of the kingdom of the Netherlands, in the province of South Holland, about 10 miles west of Rotterdam, in 51° 55' N. lat. and 4° 14' E. long. It is situated on an arm of the Maas called 't Scheuer or Stuys-diep, which here empties itself into the North Sea. It has a tolerable harbour. The inhabitants, 7800 in number, are chiefly engaged in the coal and herring fisheries, the produce of which is exported in considerable quantities.

MAASTRICTH (Mastricht, or Maestricht, Trajectum ad Moenum), the capital of the Dutch part of the province of Limburg, is in 50° 38' N. lat. and 5° 42' E. long, on the banks of the Maas (or Maase), at the junction of that river with the small stream of the Jaar. It is divided by the Maas into two parts, which are connected by a handsome stone bridge 200 feet in length. The part on the right bank is nearly a suburb of the town of Wyck, whose houses are regular, and well built town. It contains some large squares, such as the extensive market-place, and the parade, which is surrounded with avenues of trees. Among the public buildings may be numbered the town hall, with a public library, in the great market-place, and the church of St. Gervais. There are six Roman Catholic, one Lutheran, and three Calvinist churches, twenty-one churches belonging to dissolved monasteries, two hospitals, and an orphan asylum.

The population is 22,000 inhabitants, who have considerable manufactories of woollen cloth, flannel, leather, fire-arms, soap, and extensive breweries and distilleries.

In the adjacent country they likewise cultivate malt, tobacco, and flax. In Maastricht is one of the strongest fortresses in the Netherlands, and the key to the kingdom on that side. On the west side of the Maas is St. Peter's mountain (Petersberg), upon which a citadel was erected in the year 1592. The walls encircled the town and St. Peter's church, and could be left under water by means of sluices. This mountain is very remarkable on account of its fine stone quarries, to which there is an entrance on the side next the Maas, through which, which is the main entrance, which convey to the banks of the river. This quarry, extending over a tract twelve leagues in circumference, is traversed by a great number of horizontal passages, which are supported by square pillars. In various places there are openings for the admission of air and light, and small water-cisterns. At one place, called the Fountain, there is a pretty large basin of water, into which a small stream flows, that issues from the foot of a fossil tree. In time of war, the inhabitants of the surrounding country, with their cattle, found a secure refuge in this quarry, which is said to be capable of receiving 40,000 persons. The passages, said to be 20,000 in number, intersect and cross each other in all directions, forming such an intricate labyrinth, that it is dangerous to venture into it without an expert guide.

(Beschrijving van het Kon. der Nederlanden, &c., van N. G. van Kampen; Hassel's Handbuch; Stein, Geog. Lexi- kon; Cannabich, Lehrbuch.)

MAASTRICTH ROCKS. The rock of St. Peter's mountain is generally of a granular texture, and to geological observers presents a sort of middle character between chalk and particular parts of the 'calcareous gosser' of the Paris basin. The geological relation thus suggested is confirmed by the organic remains, which, with many points of special resemblance to the ordinary fossils of the chalk, exhibit likewise some generic relations to the Tertiary series. Ac-
cordingly, the place in the scale of strata now assigned by common consent to the Maastricht rocks is in immediate superposition above the chalk of England, and at some small interval below the calcareous gosser of Paris. It may be considered as an upper part of the chalk formation, and is paralleled by observed cases in the south-west of France. It is principally to Dr. Fitton ('Proceedings of Geol. Soc. of London,' 1829) that English geologists owe the establishment of this important classification.

(4) The mountain is rich in fossils, some of which lie in flint nodules, and others in the stone. A few years ago the bones of some ruminant quadrupeds were offered for sale at Maastricht, and were described as this from hill, but they did not really belong to the ancient rock. The genuine remains are found remarkable in the Green, an aquatic reptile, imagined to be a crocodile by Faussat St. Fond, but determined to have other analogies to the Lacer- tudiae by Cuvier, who named it Mosasaurus; vertebrae of this animal have been found in the chalk of England. A very large species of marine turtle (Chelonias) has also been completely examined by Cuvier from this locality. Beautiful teeth of fishes, shells of Nautilii, Baculites, Belonites, Hippurites, Inocerami, Ostrea, Echinos, Teretellus, and Potamoceras may be seen in some of the interesting collections at Maastricht, and go far to prove the truth of the prevalent opinion, that the strata of St. Peter's mountain are more allied to the chalk than to the calcareous gosser—the newest of the Secondary, rather than the oldest of the tertiary formation.

(Dr. Fitton in Geol. Proceedings and Transactions; Meyer, Palaeontologia, &c.)

MABILION, JEAN, born in 1632, studied at the college of Rheims. He took vows in the congregation of St. Vincent de Paul, in 1646. He afterwards assisted Father D'Achery in his collection entitled 'Spicilegium,' and also edited the works of St. Bernard. In 1668 he published the first volume of his 'Acta Sanctorum Ordinis S. Benedicti,' being the Fasti of his order for the year 1667. He published in 1675 the 'Acta Sanctorum.' Mabillon was afterwards sent to Italy by Louis XIV. to make a collection of books and MSS. for the royal library. On his return he published his 'Museum Italicum,' 1689, a kind of literary and antiquarian dictionary, in which he briefly describes the towns that he visited, and more at length churches and convents, especially those of his order, such as Monte-Cassino, Vallowronza, &c., the libraries and colleges, the rare MSS., and other antiquities of Italy. This work is followed by learned dissertations upon subjects of ecclesiastical history and palaeography. The second volume of the 'Museum Italicum' is occupied by a 'Commentarius in Ordinem Romanum,' or Commentary on the ritual of the vespers and Compline, and the ceremonies of Mass in the Church, which are there exhibited at full length. He had previously published 'De Liturgia Gallicana libri tres,' 1685, in which he compares the Gallican with the Mozarabic liturgy.

Mabillon wrote also the 'Iter Germanicum,' being a similar tour through part of Germany, namely, Suabia, Helvetia, and Bavaria, which he likewise undertook by order of Louis XIV. In this journey he visited the abbeys and libraries of St. Gall, Augsburg, &c., and among others the secluded Benedictine convent of Tegernsee, where his companion met with a very sevevy reception from the librarian, a rough Bavarian, who hated them as being Frenchmen, and the more so as they caused him to be called out of the refectory to attend upon them. He also wrote an 'Iter Britannicum,' which is another account of his travels in England in which he censures the cruelties practised in several monastic houses against those monks who transgressed the rules of their order, and speaks among others of the famous 'Isle of Man,' which he describes as a forasenous island in which some were confined till they died. This same monarch was attacked by communities over the liberty and life of individuals, uncontrolled by and unknown to the state, is one of the most repulsive features of the monastic system.

In the above collection of Ouvrages posthumes are:

'Discours sur les Anciennes Sepultures de nos Rois, Remarques sur les Antiquités de l'Abbaye de St. Denis.' Il est nécessaire de poursuivre l'histoire de la Contestation sur l'Auteur de l'Impétration de Jesus Christ' [Kempis, Thomas A.], 'Les Clures et Erits sur les Edus Monastiques.' These last concern a certain controversy between the Abbé de La Trappe, the founder of the order of the Trappists, and the Benedictines. De Raee, in his ascetic enthusiasm, had forbidden his monks all scientific studies, and indeed all reading except the Breven and a few monastic tracts. The rest of the clergy, both Mular and regular, took different views, and Mabillon was requested to defend monastic studies and learning as perfect, compatible with piety and religious discipline, as the Benedictine order had fully proved. Mabillon accordingly wrote his 'Traite des Edus Monastiques,' which was published in Latin, and was translated into Italian and other languages. This led to a controversy with Raee, who had the worst of it: 'Remesxions sur la Réponse de l'Abbe de la Trappe,' 1692. Another controversy which Mabillon had with the Benedictines arose upon the history of St. Louis, when some of the Benedictines, who were persuaded that the bones were found in the catacombs, filled part of the posthumous works: 'Lettres et Erits sur le Cuite des Saints inconnus.' They contain also 'Vita D. Io. Mabillonis de quibusiam Sacri Vossus Opuscula,' and 'Vita Mabillonis.' The learned society of the congregation of the Index concerning some writings of Isaac Vossius, in which that scholar gave the preference to the chronology of the Septuagint over that of the Hebrew text, and in another place maintained that the deluge was caused by a meteoric, universal hail. Mabillon believed that the opinions of Vossius, especially the latter were not correct, yet he did not think that they constitute heresy, and accordingly the Congregation did not place Vossius in the Index.

MABLY, DE ABBE DE, born at Grenoble in 1709, studied at Lyon in the Jesuit College, and afterwards went to Paris where he was introduced to the Cardinal de Ternay, who then was his secretary. He wrote in 1740 his 'Paraphrase sur les Romans de la France,' which gave him much popularity. He was employed by the cardinal as his secretary, and while in that office he compiled his 'Droit des peuples de l'Europe, fondé sur les Traités,' a useful work devoted to the rights of nations. He was appointed ambassador to Madrid in 1749, where he was engaged in negotiations between 1743-6, after which he appears to have quarrelled with the cardinal, in consequence of which he gave up his official prospects for a studious retirement. His historical works are:—1. 'De la manière d'écrire l'Histoire.' 2. 'De l'étude de la langue grecque.' 3. 'Observations sur les Romains.' 4. 'Observations sur l'Histoire de la France,' 2 vols. 12mo. 1730, with a posthumous continuation in two more volumes, published in 1796 (this is the best of his historical works). 5. 'Entretiens de Phineas, où le Rapport de la Monarchie et de la Politique.' Many of the author's views, especially in last work, are visionary; such as a community of goods: he would also banish commerce and the fine arts from republic. Mably was a great admirer of the institutions of Sparta, and wrote his 'Etudes de Sparte' in Paris in 1785.

MABOUIA, FITZINGER'S name for a genus of Seara allied to the Skinks (Scinca).

MABUSE, or MAUBEUGE, JOHN. This emeritus painter, whose proper name was John Gosseart, was born at Maubeuge, and became a painter of scenes from Scripture, his parents, or of the name of the master under whom he studied. It is evident however that in early life he must have very assiduously devoted himself to the study of nature, and have acquired habits of industry. Considering that he was afterwards a most industrious man of letters, now in disolute and licentious habits, and especially addicted to immoderate drinking, we cannot but admire the patience, fidelity, and labour which appear in his works. His writers have affirmed that he went early to Italy, but this is not clearly ascertained; but whatever advantage
may have" derived from the study of the great masters and of the antique, he never attained the elegance of the Roman school.

After his return from Italy he lived for some time at Utrecht, at the service of the prince Philip of Burgundy. From Utrecht he went to Middelburg, where he painted the celebrated altarpiece, representing the Descent from the Cross, for the great church. This picture, which was of extraordinary dimensions, was highly admired by Albert Durer. The church, with this picture, and all the treasures of art that it contained, was destroyed by lightning. He seems to have lived in a very extravagant manner at Middelburg, and was at last thrown into prison; but whether for debts or for some excess is not known. It seems to have been after the reception of his liberty that he went to London, where he was employed in the service of Henry VIII.

He painted the king's children, and many portraits of the nobility, which gained him great reputation. Several of his pictures painted in England are still in existence, and others were brought to this country; and he seems to have had a good state of preservation as if it had been finished only yesterday. Most of the great galleries on the Continent have specimens of his works. Among these are three in the celebrated collection formed by Messrs. Bissière, which contains the highest-priced portraits of German masters, which they saved from neglect or destruction during the wars of the French revolution, and which are now in the possession of the king of Bavaria. These pictures are a very large and splendid composition, representing the Crucifixion, and in the original state of the picture, which was painted about 1511-1512, it was seen by Clement VII. He made the Virgin and Child of the picture one of the chief monuments of his rule. This nobleman having to entertain the emperor Charles V., put all the persons in his service into the picture; and it is a splendid example of the rest ordered suits of rich white brocade for his painter and two others of his household. Mabuse, under some pretence, got possession of the brocade, which he sold, and spent the produce at a tavern. When the great day came, and the retainers of the emperor appeared, the portrait of Mabuse appeared to be of such superior whiteness and beauty, that the emperor desired to examine it, and to his astonishment, discovered it to be paper: thus the secret came out, and greatly amused the company. It may be said that the great Mabuse was lost by the art of nature, but neither the place nor manner of his death is known.

Such are the particulars which we have been able to collect of the life of this artist. Three different accounts of him now before us agree in giving the dates of 1499 and 1549 as those of his birth and death. There is, however, the circumstance which is absolutely irreconcilable with these dates. In the catalogue of the pictures belonging to King Charles I. is "The children of Henry VII.; Prince Arthur, Prince Henry (afterwards Henry VIII.)," etc. Prince Margaret, who was at the Hampton Court, says, 'As Prince Henry, who was born in 1492, appears to be about seven years old, the picture was painted about 1493, which fixes the time when Mabuse was in England, but 1492 was the year in which all the accounts fix the birth of the artist himself.'

MACACUS. [Lemure, vol. iii., p. 419.]

MACACUS, a barbarous word founded on the term Macaco (written by the French Macaque), which, according to Cuvier and the author of the natural history of the monkey, has no connection with the original name. The word Macaco appears for the first time in Marcgrave's 'Nat. Hist. of Brasil,' as the native appellation of a kind of monkey found in Congo and along the coasts of the Gulf of Guinea. The author of 'The Natural History of Monkeys,' etc., observes that its application to an Asian species of a genus totally distinct from that to which the animal properly bearing it really belongs, is one of the many similar errors of nomenclature committed by Buffon, at that time indeed unavoidable from the very limited knowledge which naturalists possessed on the subject of specific distinctions, and especially from the confusion which reigned in the geographical part of zoology.

Laëbéle seems to have been the first who Latinized this term, and he was followed by other French zoologists as the zoologists of other countries. The Quandrouch or Wanderow appears to be considered the type of the genus, at least it stands at the head of the heterogeneous species comprehended under the title.

Thus Cuvier arranges under the Macacées the following species: Silenus, Sinicus, radiatus, cynomolgus and cynocephalus, rhesus, nemesrata, etc.

Mr. Gray arranges the genus as the last of his subfamily Cercopithecina (family Hominidae).

Mr. Lesson, who makes the characters of the genus con- sulted in a facial view, thinks that in 40 years' work there is strong development of the supraorbital and occipital crests; the presence of pouches and callioli, and a tail more or less long, gives as its dental formula that which is common to so many of the Simiidae, viz.:

Incisors 4; Canines 1-1; Premolars 3-3; Molars 2-2-3-3.

and he arranges under it the following species: Silenus, Sinicus, carbonarius, radiatus, cynomolgus, rhesus, nemesrata, and niger.

Sir William Jardine adopts the genus with the following species: Macacus, Silenus, Sinicus, radiatus, cynomolgus, rhesus, nemesrata, and niger.

Mr. Swainson, who also adopts the genus, gives the species the English appellation of "the brown baboons," and he considers that they are distinguished by an elongated muzzle, as in Macacus carbonarius, much more prominent than in the Cercopithecus, and by a tail more or less lengthened: he is also of opinion that they differ from the Cynocephalus (Cynocephalus) with which it was confused in the time of less accurate observation, which is 'open obliquely on the upper part of the muzzle.'

Mr. Swainson thinks that the form of these animals, notwith- standing, shows a strong resemblance to the Cercopithecus, which is further increased by their possessing a tail; although this character is generally possessed by the sub-family of the length of the body. The muzzle, he observes, is so much elongated, that the facial angle does not exceed 35°, and the canine teeth are strong and large. He further re- marks that they are distinguished from some of the species (as M. Silenus, Sinicus, and radiatus) are remarkable for having crests, which either assume the form of a mane or of a radiated tuft. The Chinese Bonnet Monkey has the hairs disposed in this manner, while its elongated muzzle, as the panther, is very characteristic of the genus, and he states that the form of these animals separates them widely from the monkeys: it is, he says, strong and robust, while their disposition is cunning and mis- trustful. He concludes by remarking, that the crested species inhabit the cold portions of Asia and Africa. (Nat. Hist. and Classification of Quadrupeds.)

The author of the 'Natural History of Monkeys, Lemurs, and Opossums' rejects, for substantial reasons given in that work, the genus Macacus, and applies the term Baboons, as usually understood and applied in the English language, to a group of Simia co-ordinate with the apes and monkeys, as described by him, distinguished from the apes by the equality of their members, their cheek-pouches and external follicles, and from the monkeys by the robust and strong body and extremities, their tubercular tail, too short to execute the functions usually assigned to that organ, and the mountain rather than the sylvan habitat which this conformation necessarily induces.

The most peculiar of these traits of structure, continues the author, the abbreviated or tubercular nature of the tail, is the idea usually attached to the word baboon, and it is certainly the most prominent and characteristic attribute of the group; since, as we have frequently had the opportunity of ascertaining, the majority of the species of monkey, if not the immediate cause, is at all events the most certain index of the habits and economy of these animals: and he makes the baboons thus defined comprise two dis- tinct genera, Papio and Cynocephalus, respectively con- fined, with one or two exceptions, to the continents of Asia and Africa.

The author then introduces to the reader's notice the genus Papio as the last and lowest of the groups which in- habit the Asiatic continent and the great islands of the Indian Archipelago, which appear to occupy in these
regions the situation which the Cynocephali fill in Africa. Of the forms placed by the author under this genus the Wanderoo and Gelada (Papio Silenus and Papio Gelada) are the only species in which the tail acquires any length: it never reaches, he remarks, beyond the houghs, nor is it ever employed to assist the progressive motions of the animals as among the Cercopithecus. These species, therefore, he thinks cannot be separated with any kind of propriety from the Papios with tuberculous tails, merely on account of their comparative length; because that organ, though rather more developed in the Wanderoo and Rhesus than in the Magot and Papio niger, is still greatly abbreviated as compared with the tails of the Cercopithecus, and entirely devoid of influence as an element in the habits and economy of animal life.

The following is given by M. F. Cuvier as the dental development of the Macques and Cynocephales, and is taken from the Chinese Bonnet Monkey (Macaque Bonnet Chinois).

![Dental Development Diagram]

Tooth of Macaque, &c.

Reverting to the arrangement of the author of the Natural History of Monkeys &c., we find the Papios divided into two small groups, distinguished by the greater or less length of the tail on the one hand, and its tuberculous form or total absence on the other; of the latter the well-known Magot, or Barbary Ape, is an example, and the Wanderoo (Macaque Silenus of the author of the Nat. Hist. of Monkeys), is an illustration of the former.

Description of the Wanderoo.—Hair deep black throughout, with the exception of the long beard or mane, which descends on each side of the face in the form of a ruff, extending downwards over the chest, and varying from an ash-gray to a pure white. The upper part of the face between the eyes naked and flesh-colored: the muzzle perfectly black. Check-pouches large, callosities of considerable size, and flesh-colored. Tail about half as long as the body, and when perfect, which in captivity is not often the case, terminating in a brush of tufted hairs. (Bennett.)

Geographical Distribution.—Peninsula of India, Ceylon! (Knox). M. Duvaucel saw the animal in the messuery at Barracpore, and states, according to M. F. Cuvier, that the Indians give it the name of Nil bandar, or perhaps, as the author of Nat. Hist. of Monkeys observes, more proper is as or neel blunder, signifying the dark blue or blue blunder; but this, continues the last-mentioned author, evidently refers merely to the colour of the hair, and can scarcely be the real appellation of the animal, which, not being a native of Bengal, is not likely to have a Bengai name.

Habits, &c.—Father Vincent Maria gives the following quaint account of this species. ‘There are found,’ says the Padre, ‘four sorts of monkeys on the coast of Malabar; the first is quite black with glossy hair and a white beard round the chin, measuring rather more than a palm in length. The other monkeys pay to this so profound a respect that they are humble in his presence, as though they appreciated his superiority. The princes and mighty lords hold him in much estimation for his endowments of gravity, capacity, and the appearance of wisdom above every other monkey. He is readily trained to enact a variety of ceremonies and affected courtesies, which he goes through with so grave a face, and so perfectly, that it is a most wonderful thing to see them so exactly performed by an irrational creature.

The general posture of the species is on all fours or seated; in which positions it usually takes its food, either by the hands or by bringing the mouth to it. Its first operation in feeding is generally to fill the cheek-pouches. It sleeps either on its side or sitting, bent forward, and with the head on the breast. Those which we have seen in captivity have exhibited varied temperaments. One in particular was all life, spirit, and mischief, while another was melancholy and staid in its deportment; and yet the health of both these animals appeared to be equally good, nor was there much difference in their ages.
stretches southward from the island of Macao, which is separated by a narrow channel from the larger island of Kiang-shan-hien. The town extends across the central part of the peninsula from the roadstead of Macao on the east to the coast of Canton, and is some eight miles in length, and is some eight miles in this direction, whilst from north-east to south-west it occupies about two miles. The streets are regular, but mostly narrow. A considerable number of houses have been built by the Portuguese and other European nations. This is the first town on the coast, and is somewhat more exposed to the prevalent gales during the monsoons.

The interior harbour is spacious, well sheltered, and has excellent anchoring-ground; but being situated out of the reach of Canton, and open only to the south-west, it cannot well be used by the south-western vessels. For that reason it is rarely entered by vessels, which commonly lie in the harbour, called Typa Cabrado, which is formed by four small rocky islands, lying south of the southern extremity of the Parow Castle, which is the principal town of Macao. About 30 miles north-east of Macao, farther up the estuary, is the rocky island of Lintin, on the western side of which is excellent anchor-ground, where the larger vessels lie to before they proceed to Canton, and where an extensive smuggling trade is carried on.

It is commonly supposed that the Portuguese possess the sovereignty of Macao; but that is so far from being the case, that they pay a ground-rent amounting to 500 taels per annum, and Chinese mandarins inspect periodically the Portuguese in the town of Macao, and occasionally of the provincials. A civil mandarin, called Tsoo-tung, resides within the town, as governor in the name of the emperor of China; he keeps a watchful eye on the inhabitants, and communicates information to his superiors. The only privilege which the Portuguese possess is in the government of the island, and their power, apart from the resident Chinese, is limited to a small community of European and Chinese subjects of the province. The majority of the population of the town are entirely under the control of the mandarins. The former, including slaves, does not exceed 20,000, while the Chinese are calculated to be above 30,000. Besides, the town itself, and the island, the great majority of these representatives of the foreign nations reside in the town, especially Englishmen, who pass the summer months there, and go to Canton in autumn, when the vessels arrive.

The trade of Macao was formerly considerable, but it has been greatly diminished in recent years. The Portuguese were permitted to employ twenty-five vessels in this trade, but they actually do not possess much more than half that number. The most lucrative branch was the smuggling trade in opium, which has almost entirely passed to the island of Lintin.

MACARTNEY, GEORGE MACARTNEY, EARL OF, was the only surviving son of George Macartney, Esq., a gentleman of Scottish descent, but whose family had been for some generations settled on their estate of Lissaneour, near Belfast in Ireland, and had been of subject of the province of Ulster. He was born in 1742, the 14th of May, 1737. At the age of thirteen he was admitted a fellow-commoner of Trinity College, Dublin, and in 1759, after having obtained his degree of A. B., he was also admitted to the Inner Temple, but without any intention of prosecuting the profession of law. He then made the tour of Europe, and on his return home in 1764 it was arranged, through the interest of Lord Holland, with one of the members of the impared board, that he should go in as a clerk in the Continent, that he should be returned to the British parliament for Midhurst, under the patronage of the earl of Sandwich, then one of the secretaries of state; but this destination was changed by his appointment, 22nd August of the same year, as envoy extraordinary to the emperor of Russia, for the purpose of concluding a commercial treaty with that country. He was knighted before proceeding on this business, which, after a long and arduous negotiation, in the course of which he was not only opposed by rival interests at the court to which he was sent, but thwarted by very annoying conduct on the part of the British cabinet, he at last brought to a satisfactory conclusion. He returned to England in June, 1767, and soon after received the appointment of ambassador extraordinary and plenipotentiary to Russia, which however circumstances induced him to resign.

In February, 1768, he married Lady Jane Stuart, second daughter of the earl of Bute; and in April was returned to parliament for Cowpermouth. In July following he exchanged this seat for one in the county of Flint, having been elected for Armgav in contemplation of his appointment to the office of chief secretary for Ireland, which took place on the 1st of January, 1769, on the nomination of Lord Tryon as lord-lieutenant, and the assumption of government by the earl of Shelburne, though the lord-lieutenant should be, not as heretofore, an occasional visitor only, but a permanent resident in the country.

Macartney, who was now sworn of the Irish privy-council, greatly distinguished himself by his exertions in the defense of the Hboy of Commons against Pinto's, Dr. Lucas, and the other leaders of the opposition. He held his office till June, 1772, when he was made a Knight of the Bath, and in 1774 was appointed to the sinecure of governor of the Isle of Man, with an immediate pension of £1000.

In October, 1774, he was returned to the British parliament as member for the Ayr burghs; but in December, 1775, he was sent abroad as governor of the island of Granada. He was raised to the Irish peerage by the title of Baron Macartney, of the town of Granada in Ireland, in 1780. He returned to Granada till July, 1779, when after a most gallant defence he was compelled to surrender the island at discretion to the French admiral Count d'E斯塔ingt, and was himself sent prisoner to France. He was however very soon exchanged, and after having resided in France for some years in a confidential mission to Ireland, was in September, 1780, again returned to the British parliament for Beeston.

On the 14th of December of the same year he was appointed by the East India Company governor of Madras. He arrived there in July, 1781, before that he had been appointed governor-general; but the state of his health and other considerations induced him to decline that post, and it was eventually given to Lord Cornwallis. Very soon after his return home, in November, 1782, he was made a Knight of the Bath, and in 1792, when he was appointed to his most memorable public employment as ambassador extraordinary to Pekin.

Having on the 25th of June been made an Irish viscount, he sailed on the 26th of September, taking with him as his private secretary Sir George Staunton, by whom the account of the embassy was afterwards given to the public. The amount of the benefit gained by this first diplomatic communication on the part of England with the court of Pekin has been matter of dispute; but it is generally agreed that no other person could have accomplished more than was done by Lord Macartney, whose conduct at least was well calculated to impress the subjects of the Celestial empire with a respect for the country which he represented. He left China on the 17th of March, 1794, and landed at Portsmouth on the 5th of September of the same year, having on the 1st of March 1794 been made Lord Macartney, in the Irish peerage.

In June, 1795, he was sent on a confidential mission to the United States, and returned in June, 1796; and in 1798, on the 8th of June been made a British peer by the title of baron Macartney. He was in the end of the same year appointed governor of the newly captured territory of the Cape of Good Hope. Here he remained till November, 1798, when he was assigned as a Member of Parliament, and occupied the bench of the House of Commons in the next Parliament, from March, 1800, to March, 1806. The same cause induced him to refuse the office of president of the Board of Control, with a seat in the cabinet, which was offered him on the formation of the Addington ministry in 1801; and he lived in retirment suffering severely from gout, till his death, which took place at Chankwick, 19th March, 1806. The manner in which Lord Macartney discharged his duties in the various public services in which he was employed procured him from all parties the reputation of very considerable ability and the highest honour. An account of his public life, with a selection from his unpub-
were employed: but so many were thrown out of work that the number was reduced to 3022 in 1832. This valuable trade of spinning raw silk flourished in consequence of the provision it offered against the introduction of thrown silks from France and Italy. Some notion of the growth of the silk-trade in Macclesfield may be formed, when it is considered that every variety of silk article is now produced in this town, from the narrowest ribbon to the different kinds of handkerchiefs, and figured silks, and velvet, and various kinds of handkerchiefs from India. This last market-place, connected with the silk-weavers of the Continent, has reduced wages in Macclesfield more than one-half, and occasionally involves the silk-weavers in the greatest distress.

Macclesfield is situated on the west side and at the base of a range of high land which is on the borders of Cheshire and Derbyshire, and is a part of the mountain-region of the latter county. The Bollon, an affluent of the Mersey, runs through the town, the lower part of which is called the Wye. A canal which ascends this stream for a considerable distance connects it with the Manchester Canal, and the Peak Forest Canal passes close to Macclesfield, and thus opens a water communication with most parts of England.

Macclesfield contains four principal streets, diverging from the market-place in various directions; and there are four chief entrances from London, Chester, Manchester, and Buxton. The town-hall is a good building, designed by Goodwin, and decorated with great taste, and the public room is well adapted for concerts and meetings. A subscription library is established, containing nearly 1700 volumes, and is also a depository of the public records. The butchers' market is a very neat, compact, and suitable range of buildings adjoining the general market. The court-house and gaol for the hundred of Macclesfield are also situated in the market-place. The town has a fire-engine and water conducted in pipes from the adjoining hills, and the money paid for it goes to the borough fund. There are two fire-engines, and the town is lighted with gas. The various factories are situated on the Bollon, and the factories cost 30,000l., and some of the silk factories 14,000l.; but the value of the latter has been much depressed by the deterioration of the silk-trade. The common at the foot of the range of hills on the east side of the town has been enclosed in consequence of an act passed for that purpose in 1791; it is now partly built upon, and the rest highly cultivated. There is an excellent steam-mill for grinding corn in this part of the town. There are two banking establishments, and a branch from the Imperial Bank of Manchester. The butchers' market takes place on Tuesday and Saturday. The fairs for cattle, cloth, toys, &c., are, May 5th, June 22nd, July 11th, October 4th, and November 11th. The dispensary, erected in 1814, has one physician, three honorary surgeons, and one house-surgeon, with a salary of 100l. per annum. There is one savings'bank, eight benefit societies for males, each consisting of 400 or 500 members, and four for females, of about 300 to 400 members each. There are many trusts for charitable purposes. The free grammar-school was endowed with lands in 1322 by Sir John Perycaul, sometime lord-mayor of London, who is said to have been born in this city. It afterwards fell into the hands of the crown, and in April 26th, 6th of king Edward VI, was restored, and took place the following year, when the annual revenue now amounts to 1300l. per annum. By act of parliament (1838) four exhibitions of 50l. each for Oxford and Cambridge are established, and a commercial school is to be connected with the grammar-school.

MAC, originally a club of metal, whence it derived the name of Macé or Macú, and whence its diminutive Macué is derived. In a more ornamental form it is a ceremonial insign of authority borne before magistrates.

The mace in military use was appropriated to the cavalry, and in the Bayeux tapestry are represented in the hands of the combatants. It is not clear when the fashion of suspending them from the saddle was introduced into Europe, but it is probable as it seems to have been borrowed from the Arabs, we may perhaps assign it to the middle of the thirteenth century. Muratori observes that in a close conflict of cavalry it was exceedingly difficult to overthrow or wound powers of men in armour sitting on horseback, for their persons were enclosed in hauberks, helmets, and other iron arms, and the mace excluded the power of swords, darts, arrows, and such like weapons. For this reason it was usual to strike men defending with iron maces, or to turn the attack on those who were making a rush, or who had fallen from the saddle; or if he had tumbled on the ground, the weight of his armour might render him unable to contend with an effect.

Maces seem to have been much used from Edward II, both in battles and sieges, and in most of the principal campaigns of the fifteenth and sixteenth centuries, though they sometimes gave way to the short battle-axe and horseman's hammer. The invention of pistols in the reign of Henry VIII occasioned their disuse in the time of the Reformation.

Ellis, in his notes to the "Fabliaux," says the mace was a common weapon with ecclesiastics, who, in consequence of their duties, frequently took the field, but were by a cano of the church forbidden to wield the sword. Maces were used by the Turkish horsemen. "Maccagius, Anagy. Macc."
The origin and early history of the Macedonians are involved in much obscurity. Some moderns have attempted, against all probability, to derive the name from the Kittoni (Κιττηνος) or Kittem (Κιττημ) mentioned in the Old Testament, (Gen., x. 4; Num., xxvi, 24; Jer., ii. 10; Ezek., xxvii, 6; xxxi, 30). This opinion appears to have arisen in part from the description of some of the countries inhabited by the Kittem, which is supposed to answer to Macedonia; but still more from the fact that in the book of Maccabees, Alexander the Great is said to have come from the land of Chethheim (Στρυμωνία), and Perseus is called king of the Kittoni (κιττηνος, 1 Macc., xxviii, 1). In inquiring into the early history of the Macedonians, two questions, which are frequently confused, ought to be kept distinct, namely, the origin of the Macedonian people, and the origin of the Macedonian monarchy under the Temenides; for while there is abundant reason for believing that the Macedonian princes were descended from an Hellenic race, it appears probable that the Macedonians themselves were an Illyrian people, though the country must have been inhabited by different tribes at various times by many Hellenic tribes. The Greeks themselves always regarded the Macedonians as barbarians, that is, as a people not of Hellenic origin; and the similarity of the manners and customs, as well as the languages, as far as they are known, of the early Macedonians and the Illyrians, may be taken by many as a proof of the identity of the two nations. In the time of Herodotus, the name of Macedonia comprehended only the country to the south and west of the Lydias, for he observes that Macedonians, though distant from the Dardanians by the united mouth of the Lydias and Helicon, as Herodotus doubts of the former, and inland Herodotus conceived that Macedonia extended does not appear from his narrative. According to many ancient writers, Macedonia was originally called Emathia (Πην. M. N., i, iv. 17; Justin, vii. 1; Ge. xiv. 6) but was usually called Macedonia from the name of the river (Μακεδόνες, from the name of the river) which ran through the country. The name of the Macedonians (Μακεδόνες) is derived from the name of the river which ran through the country; and the name of Macedonia (Μακεδονία) is derived from the name of the country. There are various accounts of the origin of the Macedonian monarchy, but all agree in ascertaining that the royal family was descended from the royal family of Darius (David), the name of the Macedonians, which was originally called Macedonians (ι. e. 65; compare viii. 43) and although it may for many reasons be doubted whether the Macedonians had any particular connection with the Dorians, it may be inferred from the statement of Herodotus that the Macedonians once dwelt in the west of Greece, whence they emigrated in a north-easterly direction.

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literature and refinement. He is said to have invited So- cretes to settle at his court, and Euripides resided there during the latter period of his life. [ARCHELAUS.]

On the assassination of Archelaus, B.C. 399, the greatest confusion prevailed for many years; and it was not till the accession of Amyntas II. (B.C. 397) that anything like stability was restored to the country. But even during the greater part of his reign Macedonia was distracted by intestine commotions and foreign enemies; and on his death, B.C. 369, the same state of confusion prevailed that had followed the death of Archelaus. Of Amyntas was succeeded by his eldest son, Bessus, who was assassinated at the end of the first year of his reign by Ptolemy Aristo, who held the supreme power for three years as regent during the minority of Perdiccas; but, in consequence of abusing his trust, he was put to death by Bessus, B.C. 364. After the death of Bessus, after a reign of five years, fell in battle against the Illyrians, B.C. 359, and was succeeded by his younger brother, the celebrated Philip, who succeeded to a kingdom assailed by numerous enemies and weakened by intestine commotions, and left the Macedonian monarchy in Europe. [PHILIP; ALEXANDER.]

The immediate consequences of Alexander's death are given under ANTIPATER and CASSANDER; it may be sufficient to state here, that in the commotions consequent upon the division of his kingdom, his family was destroyed. Cassander obtained at first the power, and eventually the title of king of Macedon. Cassander was succeeded by his son Philip, B.C. 296, who reigned only two years; and on his death, in B.C. 294, his two younger brothers, Antipater and Cassander, quarrelled for the succession, and the throne was seized by Demetrius, the son of Antigonus, who reigned for seven years. He was driven from his kingdom, B.C. 297, by Pyrrhus, king of Epirus, who was however deposed in his turn, after a short reign of seven months, by Cassander, grandson of the last king of Macedon, B.C. 290.

On the death of Lysimachus, who fell in battle, B.C. 281, the country remained in almost a state of anarchy for many years. The invasion of the Gauls from B.C. 280 to B.C. 275, and the conflicts between the numerous pretenders to the throne which brought the country to the brink of ruin. Eventually Antigonus (surnamed Gonnatas), the son of Demetrios, was proclaimed king; but was dethroned by Pyrrhus, who again obtained the kingdom on his return from Italy. After the death of Pyrrhus, Antigonus regained possession of the throne, which he retained till his death, B.C. 233. The two following monarchs, Demetrius II. (B.C. 239-229) and Antigonus II. (B.C. 229-220), were principally occupied in the Greek wars which followed the formation of the Achaean confederacy.

Philip V., who succeeded Amyntas, alarmed at the increasing power of the Romans, entered into an alliance with Hannibal; but was never able to afford him any effectual assistance, in consequence of continual wars with the "Bou- laconians" the Romans and Macedonians found occasion to excite against him. On the conclusion of the war with Carthage, Philip found that he was unable to cope with the Roman power; and after continuing the contest for a few years, was obliged to sue for peace on such terms as the victor thought fit. Philip was succeeded by Perseus, B.C. 178, who carried on war against the Romans, and was finally conquered, B.C. 168. [EMILLI.] Macedonia was not immediately converted into a Roman province, but was divided into four districts, which were considered independent, the government of which was entrusted to their own citizens: Amphipolis, Thessalonica, Pella, and Pelagonia. Macedonia was reduced to the form of a Roman province, B.C. 142.

It is very difficult to determine the boundaries of the Roman province of Macedonia. According to the "Epitome of Strabo" (vi.), it was bounded by the Adriatic on the west; on the north by the mountains of Scardus, Orbeus, Rhodope, and Hermonis; on the south by the Via Egnatia; and the sea extended as far as Cypsela and the mouth of the Hebrus. But this is an inaccurate statement; the southern boundary of Macedonia cannot be correct, since we know that the province of Macedonia was bounded on the south by that of Achaea; and although it is extremely difficult, if not impossible, to fix the precise boundaries of these provinces, yet it does not appear that Achaea extended farther north than the south of Thessaly.

Macedonia was inhabited from the earliest times by numerous tribes, whose names continued to be given till a late period to various districts of the country. The most important of these divisions were—Mygdonia, Bottica or Botticiana, Pieria, Ilmeia, Symphalae, Orestis, Lysus, Eotria or Eotrides, Emathia, Paeonia, and Chalcedon. Mygdonia, on the Thermaic Bay, was separated from the district of Bottica by the Juktos or Juktus (Hesiod, vii. 123); but its boundaries on the east are obscure. Thucydides makes it extend as far as the Struma (ii. 99); but this is at variance with the statement of Herodotus, who speaks of the land to the west of the Thermaic bay as forming part of the district of Bottica (Herodotus, vii. 123). It was a large and prosperous town, and exists at the present day under the name of Saloniki. The Apostle Paul addressed two epistles to the Christian converts in this town. The lake Bys- tan, B.C. 290, was on the coast of the Axios, on the north of the united moun- tains of Emathia and Eotria, and is clearly the "Limni" of Euxynus, a peculiar "Emathia." The principal town of Bottica was Pella, and it is at twelve miles in length, and six or eight in breadth. The Bottica, or Bottica of Herodotus, was bounded by the Axios, on the west by the united mountains of Emathia and Eotria, and on the north by the "Limni" of Euxynus. The Bottica of Strabo (xiv. 503) is the "Limni" of Euxynus, and is the same as the "Limni" of Pella, at the foot of Mount Bermionis (Plin. H. N., vol. ii. 130). The ruins of Pella may still be seen at Alkaliis, near the mouth of the Axios, the town of Ileia, celebrated for an antique temple. [Herodotus, ii. 125; Pliny, H. N., iv. 17; Melos, ii. 6. 24; Strabo, vi. 505; Pella, at the foot of Mount Bermionis (Plin. H. N., iv. 17).]

Proceeding along the coast we come to Pieria, an ancient district of Macedonia originally intervened between Bottica and Pieria. According to Strabo (iv. 503, vol. ii. 130), and Livy (ix. 19), Pieria was bounded on the north by Diun; but in more ancient times the name was extended to the whole of Media. This was the condition of Macedonia, was fought near Pella, and at the foot of Mount Bermionis (Plin. H. N., iv. 17), the ancient city of Bermica, or Bercea, which is mentioned in the Acts of the Apostles (xv. 10).

Proceeding along the coast we come to Pydna, the chief place in this district, also called by Ptolomy, Pydna (xii. 26), and by Herodotus, Pydna (ii. 104). Forty stades to the north of Pydna was Mount Bermionis (Strabo, vii. 505, vol. ii. 130), at the same point the name of Kyries, is said to have been a Greek city, and for some time in possession of the Athenians; but afterwards taken by Philip and given to Orestes. The district of Pydna, like the whole of the Macedonian monarchy, was fought near Pella, and at the foot of Mount Bermionis (Strabo, vii. 505, vol. ii. 130), at the same point which Philip, the father of Alexander the Great, lost an army.

In the interior, to the west of Pieria, in the valley of the Halacmon, was the district of Elimeia, the inhabitants of which were called Elimeians. During the reign of Philip II., Elimeia was subject to the Macedonian monarchia, but was governed by its own princes (ii. 99). There was a town called Elimeia, which was annexed to Macedon on the conquest of Persia by the Romans (Livy, xiv. 30), together with the country of the Atiata and Paraves, which extended to the west of Elimeia, in Illyria and Epirus. North and west of Elimeia was the district of Orestis (Ptol. xx. 38; Liv. xxxiii. 34), which probably was as far as Muller has remarked, from the mountains, the country (spec. mountain), and not from Orestes, the son of Agamemnon. The Orestis appear to have been the principal of the Macedonian kings for a considerable period.
The peninsula of Acét, or Athos, was inhabited in the time of Thucydides by a few people of Chalcidian origin, principally by Pelasgians, Baisale, Crestomaniacs, and Euboeans who dwelt in small fortified villages. (Thucyd., iv. 109.) At the extremity of this peninsula was Mount Athos, called at the present day Monte Sanito. The canal of Xerxes can still be seen at the north end of the river. The Romans assembled a huge army within this peninsula: Sane, founded by the inhabitants of Andros (Thucyd., iv. 199); Diom, Olyphus, Aetolochon, Thyssus, and Cleone. Acanthus, situated on the low flat isthmus which connects the peninsula of Acét with the mainland, was once an important town. (Arrian.) The chief towns in the interior of the peninsula of Chalcidice were Chalcis and Apollonia, mentioned in the Acts of the Apostles (xvii. 1). The Via Egnatia, which formed one great line of communication between the Ionian Sea and Byzantium, commenced at Apollonia in Illyria, and was joined at Ciodina on the Genesus by the Via Candavina, from Dyrrachium, which however is also called the Via Egnatia (Strabo, vii. § 3). The Via Egnatia entered Macedonia in the district of the Iliana and passed through six walled towns, 48 towns with communal councils, and 235 villages and hamlets. The general inclination of the surface of the country is to the northeast, as it spreads from the foot of the central Apennine chain to the coast of the Adriatic. The principal rivers are the towns of the Potenza, Chienti, and Muserone, which rise in the Apennines and flow into the Adriatic.

The principal towns are: 1. Macerata, on a hill in a fine country watered by the Chienti, a nest, well-built, pleasant, with 15,000 inhabitants, several churches and convents with good paintings, a college, and a university, with a library containing 20,000 volumes, a court of appeal for all the provinces of the Marches, a handsome town-house, and several fine private palaces, among which are the most remarkable the Palazzo Farnese, now a bishop's see and the residence of the delegate. It carries on a considerable trade in corn, silk, and cattle. An annual fair for horses is held at Macerata; 2. Loreto, 3. Recanati, near the Adriatic, with 4000 inhabitants, and several churches and convents; 4. Fabriano, near the river Trebbia, the sea, near the foot of the Apennines, with 3000 inhabitants, and known in modern history for the treaty of peace of February, 1797, between General Bonaparte and Pope Pius VI.; and the battle of May 16, 1615, between the Austrians under General Bianchi and the Neapolitans under Joachim Murat, which by the defeat of the latter decided the fate of Naples. 5. Camerino, the ancient Cumæum, an old town among the Apennines, and a bishop's see, with 7000 inhabitants, several churches and convents, and some silk manufactories. It is the birthplace of the painter Carlo Maratti. 6. Fabriano, farther north, a bishop's see, with 7000 inhabitants, manufactories of paper and parchment, and a considerable trade in wool. 7. Severino, with 7000 inhabitants. 8. Matelica, an old town, with 3000 inhabitants.

The province of Macerata is in part very mountainous and barren, but the valleys and plains towards the sea-coast produce abundance of corn, wine, most kinds of fruit, and vines along the Apennines, with fertile pastures which deserves the name. Recanati has a kind of port or anchoring-place for small vessels at the mouth of the river Potenza, where some trade is carried on. (Calidri's Saggio Statistico; Neapolitania.)

MACERATION is the exposing of any substance, and generally those of vegetable origin, when reduced to coarse powder, to the action of water or any other liquid, without the assistance of heat, in which last circumstance it differs from digestion. The object of maceration is to soften and prepare for other substances operated on, so as to allow of the more ready subsequent action of heat, as when cinnamon or cloves are macerated in water, previous to distillation; or it is employed to dissolve the aromatic.

MACERATORE
parts of a substance, when digestion would not merely dissolve but dissipate them.

MACHAIRODUS, a genus of extinct animals established by Professor Kaup upon those canine teeth with serrated or dentilated edges which have been attributed to bears (Ursus cultratus, &c.) by Cuvier and others, and to great cats (Felis) by Bravard. Dr. Buckland (Bridgewater Treatise), in his catalogue of the animal remains found in strata of sand, referrible to the second period of the tertiary formations (Miocene of Lyell), at Epulesheim near Altezey, about twelve leagues to the south of Mayence, and recorded by Kaup, includes Machairodus, which Dr. Buckland places between Felis and Canis, and notes as 'albied to bear, Ursus cultratus.' Professor Kaup however remarks, that these 'canine teeth' and even the dentilations on their edges have a complete resemblance to those of Megalosaurus, and indeed their flatness and thinness do not correspond with the canine teeth of any of the existing Carnivora, while the dentilations strongly resemble those of the Saurian above mentioned. We here figure a tooth of Megalosaurus, a tooth of Machairodus (Ursus cultratus) and a cast of another, from specimens in the museum of the Geological Society of London.

without existing ruminants with very long canine teeth in the upper jaw with serrations on their edges, though not so broad in proportion as those of Machairodus. [Bana, iv. p. 95.]

MACHETES, Cuvier's name for the Ruff (Tetraga pugnax, Linn.) [Scopolarum]. MACHIAVELLI. NICCOLO, or NICCOLO, was born at Florence in 1469, of an old though not wealthy family of that republic. Having received a liberal education, he was employed in the office of Marcelli Adriani, chancellor of the community of Florence, and afterwards, when twenty-nine years of age, he was made secretary of the Ten, a body under which the management of foreign affairs and diplomatic negotiations Machiavelli's abilities and penetration being soon perceived by his superiors, he was successively employed on many and very important missions. This was in 1492, to Jacques Appiani, lord of Piombino, for the purpose of engaging him to join the Florentine troops which were besieging Pisau, whilst his general Vitelli was defending the Florentine territory against the Venetians, whose jeneck the emigrant prisoner of Rome had taken signs from the borders of Romagna. In the following year, 1499, Machiavelli was sent to Catherine Sforza, countess of Fauè, in order to make arrangements with her son Ottano to engage as a condottiero in the service of the republic. The instructions given by the Ten to Machiavelli for the execution of his missions, and his letters or reports to them during the course of his negotiations, have been published, at least in great part, and they occupy volumes iv. and v. of the 4to. edition of his works (Florence, 1792). They are marked by a very laudable sense of duty, and they are also most useful for the understanding of Machiavelli's political and historical works which he wrote later in life. Many letters however, and some of great importance, written to or by Machiavelli, remain still unedited. There is a collection of them in the library at Paris; three more volumes of autographs were purchased in 1826, at Florence, by Lord Guilford; and another copy remains at Florence in the libraries Pitti, Rinuccini, and others. (Vacher, Voyage en Italie.) Mr. Aron, three pages on the French translation of the works of Machiavelli, in Péris, which appeared in vols. 41 and 42 of the Revue de cycléopédique.)

In the year 1500 Machiavelli was sent as a commissary to the Florentine camp before Pisau. He was present at the arrival of a body of French and Swiss auxiliaries under De Beaumont, sent by Louis XII., who had just recovered Lombardy and had formed an alliance with Florence. Dissensions however arose between the allies concerning the pay of the auxiliaries. The Swiss mutinied, and called in Albizzi, one of the Florentine commissioners; and French abandoned the attack against Pisau, throwing all the blame upon the Florentines, and took possession of Pisa, of Massa and Carrara, and other districts belonging either to the Ten or its allies. This was a blow to Florence, which saw itself entirely at the mercer of France, while it was threatened on the other side by Cesare Borgia, then the terror of central Italy, who, supported by his father Pope Alexander VI., and also by the French, was making himself master of Rome by force of treachery, and threatening Florence, where he wished to re-establish the Medici. [Borgia, Cesare.] In July, 1500, Machiavelli was despatched to France in order to explain to Louis XII. the untoward occurrences at Pisa, to endeavor to keep the king, or rather his all-powerful Master, Cardinal d’Amboise, archbishop of Rouen, in a friendly disposition towards Florence, and thus screen the republic from the ambition of Borgia. This was a very delicate mission. The former ambassador, Lorenzo de’ Pitti, who was the envoy of the Florentines; they had an interest in favouring the Borgia and they were also instigated against Florence by Trivulzio, Beaumont, and other persons of influence at the French court. If his mission was not successful, he must face punishment and lose his post. He succeeded, however, in accomplishing his object, and it was by his influence that the pope, after the death of Cesare Borgia, approved the salvation of the republic a few months after when the ferocious and unprincipled Borgia entered Tuscany with 8000 men, and encamped a few miles from Florence. The citizens showed firmness, and in the meantime...
letters came from the French king forbidding Borgia from molesting the republic. A convention was concluded in May, 1501, between Florence and Borgia, by which the latter, after receiving a sum of money, went his way to the Oxford treaty and quietly at Rome after committing many depredations. But in the following year Borgia, having returned to Romagna, drove away Guidobaldo, duke of Urbino, and took possession of Camerino, whose lord, Giuio Varano, he caused to be strangled with his three young sons, with whom his troops to Romagna and the castles of Arizzo, Cortona, the Val di Chiana and other districts against Florence, and in favour of the Medici. Here again the French interfered, and Vitelli, who was to be alarmed at the cruelty of Borgia, entered into an agreement with the Medici, and fortified the cities of Senese, Siena and other towns were restored in August, 1502. On this occasion Machiavelli, being requested by the government, wrote his opinion concerning the manner in which the revolted districts ought to be treated: 'Sul metodo di trattare i popoli di Val di Chiana.' The opinion of L. Furius Calvisius after the subjugation of Latium, and the conduct of the Roman senate towards the Latin cities, he advised moderation in the present instance, except towards Arezzo, which he compared to Velletri, and advised to be treated accordingly.

In September of the same year, 1502, the Florentines, alarmed at the dangers by which they were encompassed, saw the necessity of giving greater stability to their executive, by appointing a gonfaloniere perpetuo, a kind of dictator for life. Machiavelli, who was elected to this office, was upright and disinterested, and without children, and therefore less likely to excite suspicions or jealousy. About the same time Machiavelli was sent on a mission to Duke Valentino, to ask him to send his troops to assist Romagna. Borgia had just returned from Lombardy, from an interview with Louis XII, in which he endeavoured to clear himself from the charge of having countenanced the insurrection against Florence, and moreover to obtain assistance from the French king for the purpose of subduing Bologna, which he intended to make the capital of his duchy.

During his absence in Lombardy, his own friends and former colleagues, Vitellozzi Vitelli, Baglioni of Perugia, the Emilian municipals, and the alliance of the Roman states, were losing the influence of the French, whose displeasure the Florentines were afraid of incurring, they sent Machiavelli to make professions of friendship to Borgia, and at the same time to watch his movements. The Florentines were too busy with internal affairs to send an easy thing, for Borgia was the busiest man of the age, and to obtain something in return for their friendship. The account of this mission is extremely curious: there was deep dissimulation on both sides: Borgia hated Florence as much as the Florentines hated him, but anyhow, both kept in check by the fear of France, and both Borgia and Machiavelli made the fairest and apparently most candid professions towards each other. Borgia even assumed a confidential tone, and began to tell Machiavelli of the treachery of his former friends; he added that he knew how to deal with them, and was only waiting for his own time; he also expatiated on his well-disciplined forces, his artillery, and the assistance he expected from France; and all this in order to persuade the Florentines of the great virtue of his friendship, and that this was more maintained by condotta, that is to say, the chief command in their army. Borgia however had to do with a negotiator who, though young, was a match for him. 'I answered,' says Machiavelli, in the 21st letter of that mission, 'that I had retained the friendship of other generality of other Italian lords, but that he must be considered as a new potentate in Italy, with whom it is more fit and becoming to make a treaty of alliance than a mere condotta or mercenary convention. And I added, that the strongest security of being trusted, which are the only binding security for either party, your lordships (the magistrates of Florence) could not see what security there would be for them if three-fourths or three-fifths of your forces were to be in the hands of the duke! Still the negotiations hasted him but anyhow, whilst Borgia was meditating another stroke of his usual policy, Machiavelli had a foresight of it at Cesena, where a certain Rimino, a confidential agent of Borgia, and, as such, hateful to the people, was suddenly arrested by order of his master, and the next morning (on the 26th of December) was found in the middle of the square cut in two pieces, and saw Machiavelli, 'has been the duke's pleasure for his wishes to show that he can do and undo his own men as he thinks proper.' On the last day of December, Borgia, followed by Machiavelli, marched with the Florentine troops to Orsin, Vitellozzo, and Oliverotto were waiting for him, to have them in his presence to do as he liked. As soon as his troops had entered the town he arrested those chieftains, stripped two of them of their arms, and went to Rome, where they also were put to death. On the very night Borgia sent for Machiavelli, and said that he had done a great service to Florence in ridiculing the world of those men who were the sowers of discord. He then expressed his wish to attack Siena and to engage himself to Petrucci; but the Florentines, being cautioned by Machiavelli, took measures to thwart his plans, and Petrucci was saved. Machiavelli returned to Florence in January, 1503, after three eventful months passed in the court and camp of Borgia, who, as the most probably, had not much confidence in the policy which he afterwards illustrated in his treatise 'Del Principe.' His letters (fifty-two in number) written during that mission have a certain dramatic character which excites feelings of surprise, terror, and intense curiosity. Machiavelli was himself, at this time, entirely disgusted and repelled by the Florentine state, and the whole tragedy: 'Descrizione del modo tenuto dal Duca Valentino per ammazzare Vitellozzi Vitelli, Oliverotto da Fermo, il Sig. Pagolo o il Duca di Gravina Orsini.' He obtained this unique privilege through the intervention of the Pope, who was a friend through Romagna to all Florentine travellers and merchants, and their goods and other property. This document is headed 'Cesare Borgia de Francia, Dei gratia Duc Romanopolis, Valentianus, Princeps Hadri im Venetari, Dominus Baglioni, Comitatus Romani, Baronius Cupi et Capitaneus Generalis,' and dated 'Imolese, 19 Octobris, A.D. 1502. Dacutus vero nostri Romandi secundo.'

In August of that same year, 1503, Alexander VI. died, and his successor, Pius III., died a few days after. A new pope, Paul II., was elected, and was permitted to return to Florence, where he was present at the election of Julius II., and soon after witnessed the fall of Cesare Borgia, who was arrested at Ostia by order of the pope, and all his ill-gotten dominions were taken from him. His troops were disbanding, and the Pope proposed to advance from Naples towards North Italy. The truce between France and Spain put an end to this mission.

After several minor missions to Pumbleo, to Baglioni of Perugia, Petrucci of Siena, and the duke of Mantua, all of whom were hostile to the Florentines, and had been dealt with and disregarded accordingly to Machiavelli's secret advice.

In January, 1504, Machiavelli was sent to France to rouse Louis XII. to the danger threatening both Florence and the state of the Empire. The Emperor was about to advance from Naples towards North Italy. The truce between France and Spain put an end to this mission.

In December, 1507, Machiavelli was sent to the emperor Maximilian in Germany, who had signified his intention of going to Italy to be crowned, and had demanded money of the Florentines. He proceeded by Geneva and Constance, where, finding that the emperor had moved southwards to be crowned at Tyrol, he returned to Florence, and opposed the passage of Maximilian, and Machiavelli returned to Florence at the end of 1563. On his return he wrote several reports on the affairs of Germany, besides the letters which he had sent home during his mission: 'Rapporto sullo stato del Papa in Spagna,' 'Discorso sopra le cose delle Alcmeugna,' 'Ritratti di Lammegna.'

In February, 1509, he was sent to the camp before Pisa, which was again besieged by the Florentines, and he there addressed a report on the state of affairs: 'Discorso fatto di stato sulle cose delle Fiandre.' In June of that year Pisa surrendered, through famine
In July, 1510, Machiavelli was sent to France a third time. The Cardinal d'Amboise was lately dead. The object of this mission was to encourage the French court to maintain the alliance with the pope, and the emperor, and to induce Louis to prevent the Swiss from enlisting in great numbers in the service of the pope, for fear that Julius, feeling himself independent, should take some new whim into his head and make war on France. This was a very welcome mission for Machiavelli, who had been in France before, and had obtained a command in the French army. Machiavelli was in France, Julius formed a league to drive the French out of Italy. The letters of this mission are very important. The advertisements of Louis to Machiavelli, and the conferences of the latter with the cardinal of Paris, the chief of France and of others, and the general of the French army, on the projects of Louis, on the proposal made by the emperor Maximilian to Louis, of dividing Italy between them, which Louis refused to accede to, are extremely interesting. Machiavelli returned to Florence in September, 1510, having consolidated the alliance of France with Florence.

On his return he wrote his second 'Decennale,' or short chronicle, in torza rima. The first 'Decennale' went as far as 1504, after the fall of the Borgias. It thus alludes satirically to the death of Anne Boleyn, and the fall of the house of York. The second 'Decennale' commences down only to the year 1510, but Machiavelli intended to complete it till 1514. In September, 1511, he was sent again to France, concerning the council which assembled at Pisa, by order of Louis XII, to depose and dethrone his uncle, and to make the last of the Jagiellon family king of France. He soon broke up without effecting anything. Machiavelli fell ill, and soon returned home. In 1512, the battle of Ravenna was fought, and the French lost it. Julius, who was irritated against his Florentine connections, sent the Spanish viceroy of Naples to send a body of troops against it, and re-establish the Medici by force. The catastrophe took place soon after.

In September, 1512, when Giuliano and Giovanni de' Medici, the sons of Lorenzo de' Medici, were taken prisoner by the French, by means of the Spanish infantry, and overthrew the popular government, the gonfaloniere Soderini made his escape. The Secretary and the Secretary, with Machiavelli, and the other popular part, was dismissed from office, and banished for a time. In the following winter a conspiracy was discovered against the Medici, in which Machiavelli was accused of having participated; being arrested in February, 1513, he was put to the torture, which was the usual means then employed under all the governments of Florence and Italy, as a means of discovering the criminal party. He however maintained that he had nothing to confess. From his prison of La Stinche he wrote a sonnet to Giuliano de' Medici, who was then governor of Florence, his brother Giovanni having gone to the conclave at Rome, where he was to be elected pope. The sonnet, which is half sad, half humorous, describing his sufferings, his own torture, the annoyance of hearing the screams of the other prisoners, and threats that he had of being hunged, is given by Ariosto in his biography, entitled 'Machiavel, son Gente e sac Errours,' 2 vol. 8vo. Paris, 1833.

He was soon after released, in consequence of a pardon sent from Rome by Leo X. To all those concerned in the conspiracy, as far as we know, were added to them, Pietro Boscoci and Agostino Capponi, had been executed.

Machiavelli now withdrew for several years from public life, and retired to his country-house at San Casciano, about eight miles from Florence. He there engaged in the history of Florence by means of Cesare Frobenius, and in history, by means of the Spanish infantry, and overthrew the popular government, the gonfaloniere Soderini made his escape, and the Secretary, with Machiavelli, and the other popular part, was dismissed from office, and banished for a time. In the following winter a conspiracy was discovered against the Medici, in which Machiavelli was accused of having participated; being arrested in February, 1513, he was put to the torture, which was the usual means then employed under all the governments of Florence and Italy, as a means of discovering the criminal party. He however maintained that he had nothing to confess. From his prison of La Stinche he wrote a sonnet to Giuliano de' Medici, who was then governor of Florence, his brother Giovanni having gone to the conclave at Rome, where he was to be elected pope. The sonnet, which is half sad, half humorous, describing his sufferings, his own torture, the annoyance of hearing the screams of the other prisoners, and threats that he had of being hunged, is given by Ariosto in his biography, entitled 'Machiavel, son Gente e sac Errours,' 2 vol. 8vo. Paris, 1833.

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The style of Machiavelli is remarkably nervous, concise, and comprehensive, and very different from that of his contemporary (and, it may be said, dominant) Guicciardini. Machiavelli has leftfewer
which bring down the history of Florence to 1499. 2. La Mandragora, and La Chitina, two comedies; 3. L'Asino d'Oro, an imitation of the "Golden Ass" of Apuleius; 4. Vita della Cacciata. It is often called the "Dialogues on the Dangers of Lucca," which is a political and statistical account of that republic; 6. Sette libri dell'Arte della Guerra, which were highly esteemed by Frederick the Great of Prussia and other competent judges; 7. Discorsi della lingua italiana, Toscana, o Fiorentina, besides minor prod-
uctions and a multitude of letters. The best editions of his works collectively are those of Florence, 1785, 6 vols.
MACCHIACOLATION. [Gorric-Architecture, p. 321.] This term, which is obviously enough from the two French words miche and couler, afterwards compounded into the
barbarously Latinized one muschicholatum or mucchicholatum, was significantly bestowed on those openings in the
ceiling of a fortified dwelling through which air could be
ventilated (miches), or melted lead, stones, etc., were poured
and hurled down upon the besiegers. The apertures were
formed in the soffit or under surface of the projecting para-
cet, which were thrown at the heads of the perfora-
tions themselves being in the soffit, between those of the
muse. By this ingenious contrivance the besieged were en-
abled to harass their assailants in a most formidable manner, while
they themselves were protected by the parapet and its bat-
tlements. MACHIN, JOHN, a Frenchman, was appointed by
Turriano as professor of astronomy to Gresham College, 16th May, 1713. His death is announced in the "Gentleman's Magazine," 7th June, 1751, but the date of his birth is unknown. He is the
author of a method for determining the quadrature of the circle, by means of the known development of an arc
according to the ascending powers of its tangent, which he
modified as to render rapidly convergent. It was how
ever by means of Dr. Halley's method that he computed
the positions of the planets; and he added in 1727 the
mathematical analysis of computations as far as one hundred places of decimals. In the "Philoso-
phy Transactions" he wrote: 1. A paper "On the Curve of Quickest Descent," xxxi. 1718; 2. "A Case of distem-
pered Skin," xxxiv., 1722; 3. "Solution of Kepler's Prob-
lem," cxli. xxvi., 1727. He lectured on the "Laws of the Moon's Motion according to Gravity," which was printed at the end of Motte's Translation of Newton's "Principia," 8vo, 1729.

(Hutton's Tracts, vol. i.; Philosophical Trans., &c.) MACHINE, an object by the intervention of which a
motive power is made to act upon any body and overcome
the force by which the latter resists the effort to change its
state of rest or motion. A machine differs in no respect
from a tool, an instrument, or an engine, and any one of
these terms may be used in its stead. The word machine
or the word tool is however generally applied to an object con-
taining in its construction some mechanical power, and which,
when in use, is held in the hand of the oper-
ator. The advantage which any machine affords for overcoming
resistance, consists in the reaction by which it supports a
certain portion of the weight producing that resistance, so
that the motive power has only to counteract the remainder. This may be illustrated by observing in those simple machines
the mechanical powers. For instance; in the lever, the
wheel and axle, and the pulley, whose properties depend on
the theory of parallel forces [when, consequently, of the
resistance, the moving power, and the reaction of the machine,
with the same effort to overcome the same resistance, the same
portion of the resistance may be made to rest on the point of support, or the point of suspension.
The momentum of resistance (commonly called the performance of the machine) is equal to the momentum of impulse. Whatever objection may be made to this rule with respect to the measure of the power in action, no doubt can exist that it affords a correct value of the useful effect.

But the latter must be therefore evolved by the work which might be raised by the machine to a given height, vertically in a given time. The fact is sufficiently evident when a mass of any material is to be conveyed from one place to another, or when a body is let fall on any object form a peak height. It follows that, an algebraic expression be obtained for the momentum of the resistance in terms involving that resistance, the motive power and the distances of their points of application from the axis of motion; on making the differential of that expression equal to zero, the motive power for the useful effect of the machine is a maximum, may be found from the resulting equation.

If \( M \) represent the mass of any body moved, \( W \) its weight, \( g \) the acceleration of gravity, \( V \) the velocity which a body would acquire by falling vertically through a height equal to \( V \), we shall have, by the theory of motions,

\[
V = gH; \quad \text{hence} \quad W = gh \times \text{force of body moved}; \quad \text{and it expresses the force of a body in motion, in contradistinction to the simple pressure exercised by a body at rest.}
\]

It is commonly asserted that, in the employment of machinery, as much is lost in time as is gained in power, or that the momentum of resistance is proportional to the power employed; but this rule requires some modification.

It can be shown to hold good in a well-constructed machine when the object moved resisted motion with the inertia. It is not a part of the resistance, the momentum of the latter, or the work done, is found to increase nearly as the square of the power employed.

The changing of one species of motion into another, are noted in the article WHEELS.

Descriptions of the several mills, engines, and machines employed in manufactures and trade will be found in Robertson's 'Mechanical Philosophy,' in Gregory's 'Mechanics,' and under the word Machines in the 'Encyclopædia Metropolitana.'

MACKENZIE, SIR GEORGE, of Rosehaugh, and Seaton, Lord of the Bedchamber to the Prince of Wales, was born in the Plantation of Dr. Bruce, principal of St. Leonard's College. St. Andrew's, was born at Dundee in 1636, and having finished his grammar education, which he did with most applause, he proceeded to Bourges, 'the Athens of Science,' where he spent three years in philosophical studies, in order to study philosophy, and thereupon he passed to Leiden, where he studied medicine. Thus by degrees, 23 years old. The next year he published his Arethusa, or the Serious Romance, where, says Rudder, he gives 'a very bright specimen of his gay and exuberant genius.'

The year following we find him in the important situation of a justice-depute, an office in the nature of an English justice at eyre, or of assize; and in that character appointed to repel with his colleagues 'once a week at least to Musselburgh, Dalkeith, and to try and judge such persons as were there or within the circuit of the said court.' On one occasion, afterwards, though at what time is not quite certain, he had the honour of knighthood. In the meantime he continued his literary labours. In 1663 his Religion Lacii, or Sacer Doctrina, or several Divine and Moral Subjects, appeared; two years afterwards, On Manners, in which he exalts that state above public esteem, with all its advantages; and in 1667, his Musa Gallanira, a treatise in which he attempts to establish in his turn, representing to county of Ross, where the influence of his family was powerful and extensive; and in 1674 he was appointed knav advocate in the room of Sir John Dalrymple, continued in the office till the accession of King James when it was given to Sir John Dalrymple; but in the time he was reinstated and continued in office till the Revolution. Previous to this last event he published...
several of his legal works, and had been instrumental in founding the Advocates’ Library. It was in 1682 that this library was founded; and at its foundation he delivered an oration, which was preserved among his manuscripts. In 1683, he published his ‘Discourse on the Laws and Customs of Scotland in Matters Criminal.’ In 1684 he published his ‘Institutions of the Laws of Scotland,’ a concise and, generally speaking, excellent compendium of the law; and in 1686 he published his ‘Discourse on the first of which places he took the degree of M.D., intending to exercise medicine, with which view he repaired to London. He afterwards however changed his destination, and was called to the bar in 1795, by the Society of Lincoln’s Inn. In 1804 he went to India as Commissioner of Calcutta. He returned to England in 1812; in 1818 he was appointed to the professorship of law and general politics in the college instituted for the education of the civil servants of the East India Company at Haileybury. In 1830, when the Whigs came into office, Sir James was appointed a commissioner for the affairs of India. He died on the 30th of May, 1832.

Sir James’s principal works are his ‘Vindiciae Gallicae,’ his ‘History of England’ (which he left unfinished at his death) and his ‘Dissertation prefixed to the Encyclopaedia Britannica,’ of which new edition of 1817 he was the reviser, with notes, &c., by Professor Whewell. The ‘Vindiciae Gallicae’ is written in an easy flowing style, and displays a considerable surface of reading, the principles of which are derived from the writings of the great French jurists of the 17th century, and from the track of English study at that time. This gave him a very great advantage over his opponent Burke, whose ignorance of the writings of the French Economistes was happily exposed. The ‘Vindiciae Gallicae’ obtained for its author great and sudden reputation.

The ‘History of England’ (published in Dr. Lardner’s ‘Encyclopaedia,’ in which work the ‘Life of Sir Thomas More’ is also from his pen) he left unfinished by his some- what premature and unexpected death; and this may in part account for its being so long executed. Particular passages of the story are rather carefully investigated; the survey of others is very slight and unsatisfactory. The remarks on some constitutional points are interesting. The general spirit is that of a very courteous and tolerant Anglican. Besides the history above mentioned, Sir James published a History of the Revolution in England in 1688, a fragment ‘completed by the editor.’

In respect to his ‘Dissertation prefixed to the Encyclopaedia Britannica,’ and purporting to be ‘A General View of the Progress of Ethical Philosophy, chiefly during the Seventeenth and Eighteenth Centuries,’ it will be necessary to say a few words.

To write a good outline of the progress of ethical philosophy, from Seneca to Bayle, tracing the course of error to its exposure, and of truth to its establishment, would require extensive reading, patient thinking, and rigid impartiality, and remains to be done; to compose a smooth, connected, and interesting essay, is easier, and Sir James Mackintosh has done it. The retrospect of antient ethics (p. 2) is fairly written, and may have been the result of a careful perusal of Enfield, with occasional references to Cudworth. The respect of scholastic ethics (p. 4) bears a like relation to Bayle. The section on ‘Modern Ethics,’ the ‘Controversies on the Moral Faculties’ (p. 5), and the ‘Foundations of a more just Theory of Ethics,’ contain a review of the principal authors, and some ingenious efforts to establish Dugald Stewart’s opinions on the moral sense. It will be a curious point with the learned world, whether the authors whom he criticises, except Stewart; and from the hasty and rather flippant way in which he speaks of some, particularly Mandeville and Mil, it would be less injurious to his memory to suppose that he is not the opinions of others, than that he expressed his own after actual reading.

The language of the ‘Dissertation’ is fluent, but not clear and precise, and thought seems to have been sacrificed to effectual expression, or to the representation of a family which, for the want of clearness and precision in the language, and the habit of mistaking words for thoughts. In the former coin instance of the latter, we should consider it as rather a pernicious book to place in the hands of the young.

There is little danger of the more mature (at least of those whose taste has been formed on a severe and masculine
he became one of the ministers of the city of Edinburgh.

Here he continued for the remainder of his life, used in the ministry, though not accounted one of the most active and engaging of the preachers in that city. His communication to his theological studies was unabated, and in 1717, at the age of 74, he produced his 'LITERAL TRANSLATION OF THE APOSTOLIC EPISTLES,' with a large apparatus of Commentary and Notes, and a Life of the Apostle Paul.

There is an account of the life of Dr. Mackintosh by son.

MACLAURIN, COLIN, one of the most eminent of Scottish mathematicians, was descended of an ancient family in Argyllshire, and was born at Kilcrean, in that county, in 1698. His father was a minister of the kirk, and died shortly after the birth of his third son Colin: his mother also died when he was very young, and the care of his education devolved upon an uncle, who sent him to a university of Glasgow at the age of fifteen.

It is said that in the following year, meeting accidentally with a copy of Euclid, he made himself master of the first six books in a few days, a story utterly incredible upon the mere statement. It is said also, and with much more likelihood, that at the age of sixteen he had thrown out several of the propositions afterwards published in his 'Geometria Organica.' However this may be, he took the degree of Master of Arts with distinction in the fifteenth year of his age (1713), and afterwards lived in studious retirement at the Marischal college, Aberdeen, in which, by a sudden and welcome reconsideration of his condition, he determined to return to a son of Lord Petherick; but the death of his pupil during their tour occasioned his return to Aberdeen.

In 1725 he was appointed to assist James Gregory, whose strength was declining, as one of the chairs at Edinburgh. The want of funds to pay an assistant placed difficulties in the way of this arrangement, which were removed but is not clearly stated. We mention them here to record, in honour of Maclaurin, that Newton, on hearing of this obfuscation of money, wrote to Dr. Corntell, the housekeeper to a son of Lord Petherick, saying: 'Dr. Gregory, towards the assistant's salary, if Maclaurin were to be appointed. At Edinburgh he remained almost the whole of his life. When the Rebellion broke out in 1745, he exerted himself vigorously for the existing government, and the subscribers of Edinburgh were planned and superintended by him in a strict and exposure said the foundation of a mortal discord.

When the pretendee entered Edinburgh, Maclaurin wrote to the Jacobite king, offering to defend the town and the estate of all who had volunteered to defend the town: but he had previously managed to introduce a good telescope into the castle, and to contrive a method of supplying the garrison with provisions. He accepted the invitation of Dr. Hendry, the Moderator, with the additional assurance, that he would be safe to return to Edinburgh. Shortly after his return he died of a broken foot, June 14, 1746, aged 48 years and four months.

The preceding particular comes originally from a speech spoken before the university by his friend and colleague Dr. Menzies, the substance of which was affixed, in a classical form, to the posthumous work on Newton's discoveries, by the editor, Patrick Murdoch. This has been copied into 'Biographia Britannica,' 'Martin's Excerpta Philosophica,' &c.; being the only authentic account of which we are aware.

Maclaurin married in 1733, and his wife, with two and three daughters, survived him. Of his character only can be stated, from the general eulogy, that it was not so much distinguished by his personal qualities as by his political and philosophical views, which, in his relations with others, were carried into practice. The number of Maclaurin's pupils was considerable, and they have exercised considerable influence upon the mathematical studies of this country; more however we think, what has been taken from them, or on their model, than in the original. The Scotch philosophy is both originality and depth in all of them. We will proceed to notice them separately.

1. The various papers which he published in the 'Philosophical Transactions' are on subjects intimately connected with his life and labours. We shall therefore divide these papers, under the two following heads:

1. *Geometria Organica, sive description linearum curvarum.*
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Macon has a high school, a school of mechanical instruction, and a drawing-school. There is a society of agriculture, science, and art, which possesses a good library. There are three hospitals or poor-houses, and a society for relieving the poor at their own homes. There are a primary court of justice, a tribunal de commerce, and several government offices.

The arrondissement of Macon has an area of 474 square miles, and comprises 133 communes, and 9 cantons, or districts, each under a justice of the peace. The population in 1831 was 114,061; in 1836 it was 115,777. The environs of Macon are fertile and pleasant. Macon had in the middle ages counts of its own. Their county constituted the district of the Mâconnais, which nearly coincided with the present arrondissement. This district had its own states or assembly for assessing the taxes. Louis IX., otherwise Saint Louis, purchased the county of Macon and united it to the domains of the crown. It formed part of the Duchy of Bourgogne, either at its reformation in the reign of Jean II., or by subsequent cession of Charles VII. to the duke Philippe le Bon. [Bouguennes.]

MacPherson, James, was born in 1758, at the village of Ruthven in Inverness-shire, and was sent in 1752 to King's College, Aberdeen, with a view to be educated for the Scotch church. On leaving college he was appointed schoolmaster at Forres. The village was so remote, and lying in a situation that he gave to the world what appears to have been his first publication, a poem entitled 'The Highlander,' in 1758. Before this date however he had written a very critical piece, 'The Battle of the Clans,' which are mentioned one called 'Death,' and another called the 'Hunter,' which last is said to have been only a rude sketch of the 'Highlander.' Soon after he sent to the 'Scott's Magazine' several contributions in verse, which have been preserved from oblivion by a great controversy that afterwards arose about his capacity for manufacturing the poems ascribed to Ossian, which he professed to have only translated. Some attention appears to have been first given to the traditional poetry preserved in their native dialect among the Scotch Highlanders by Sir John Stuart, a well known correspondent, himself a mountaineer; by him an interest in the subject was communicated to his friends the Rev. Dr. Carlyle, minister of Inveresk, a gentleman of extensive connexions among the literary men of his day, and John Home, the author of 'Douglas.' The latter met with Macpherson in the autumn of 1759, when he showed them some fragments of Gaelic verse, of which they prevailed upon him to furnish them with translations. These were shown to Dr. Blair, and the poets Sheenstone and Gray, by all of whom they were highly admired. These first fragments were published under the title of 'Fragments of Antient Poety, collected in the Highlands of Scotland, and translated from the Gaelic or Erse Language,' with an anonymous preface by Sir John Stuart. This publication was given in the second volume of Dodsley's 'Fugitive Pieces,' London, 1761, pp. 117-163. The fragments are sixteen in number.

The effect was to induce the faculty of advocates in Edinburgh to raise a subscription for enabling Macpherson to make a tour through the Highlands with the object of collecting more poetical treasure of the same kind. What he found, or pretended to have found, he brought to London, and published there in two successive volumes, the first of which appeared in 1762, under the patronage of Lord Bute, with the title of 'An Epic Poem and other lesser Poems.' The second in 1763, with the title of 'Tenors, an Epic Poem in eight books, with other Poems.' From the first, the genuineness of these Gaelic epics was questioned by many persons; but it was more zealously assailed by the Scotch pamphleteer to Macpherson, who, in the number which he acquired was the beginning of a long course of good fortune. In 1764 he obtained the situation of private secretary to Captain Johnstone, on the appointment of the latter to the government of Pensacola; and he was also made surveyor-general of the Floridas, in 1765, he was sent out to America and the West Indies, and returned to England in 1766, retaining his salary of 200l. a year for life. Some of the years that he spent there he spent chiefly in literary labour, much of it, from the popularity of his name and works, highly profitable. In 1771 he published, in one vol. 4to., 'An Introduction to the Antiquities of the Scottish Celtic race, under the title of: 'An Introduction to the History of Great Britain and Ireland; and in 1773 a prose translation of the 'Iliad' of Homer; in 1775 a 'History of Great Britain from the Restoration to the accession of the House of Hanover,' in 2 vols. 4to., together with 2 vols. of 'Original Papers,' which last work he sold to the booksellers for 3,000l. During this period of his life he also wrote several pamphlets for the ministry, in support of the war against the Americans, and the constitution of the colony of Georgia. He was now a member of the society for the appointment to the lucrative office of agent of the nabob of Arcot. He turned his versatile mind and pen to Indian affairs, upon which he also produced a succession of publications of temporary interest. This post brought him into prominence in 1769 as member of the committee. At last he retired to a considerable property which he had purchased in his native county of Inverness, where he died 17th February, 1796. His body was brought back to England for interment in Westminster Abbey. [Addalton Genealogist, the editor of which, Dr. (now Sir David) Brewster, married a daughter of Mr. Macpherson.] [Ossian.]

Macquarie, River. [Australia.]

MACRAE'S FLY (MacLeay), a genus of Coleopterous insects of the section Lampelus, and, according to Latreille's classification, belonging to the third division of that group, the Xylophilidae. The genera Macraspis and Chasmodia constitute two closely allied groups of the family Rutelidae, the species of which are remarkably frequent and are large, and are remarkable for the large size of their scutellum. They are of extremely large size (averaging about three-quarters of an inch in length, or rather more), usually smooth and glossy, and often exhibit the peculiar flattened heads, as in the past of that part of the skull known as the 'carina,' which is double and flared. In the most common hives observable in the various species. There are several other groups which are of a glossy-black colour, and which have yellow markings on a black ground (Macraspis quadriovittata, Olivier). The body is of an oval shape, the head and thorax being at one greenish with that of the abdomen, or nearly so, convex above and below. The sternum is produced anteriorly over-pointed, which projects between the anterior pair of legs.

In the genus Macraspis the mentum is longer than broad, slightly contracted anteriorly, and without any fringed hairs on the anterior margin; the mandibles are almost triangular, and have the apex pointed and notched; the maxillae have several denticles.

The genus Chasmodia (MacLeay) is chiefly distinguished from Macraspis by the obsolescent terminated mandibles, which have no notch at the extremity; the maxillae having a tuft of hairs and only two denticles, and the mentum being of a somewhat obsolete form, distinctly contracted towards the base, and not nearly so the term as simple, whereas in Macraspis one of the claws of each tarsus at least of the four anterior legs, is bifid.

The insects of these genera fly by day about trees, emitting a humming noise, and feed upon flowers. A collection formed in Brazil usually contain many of these insects.

Dejean, in his 'Catalogue des Coleopteres,' enumerates twenty-six species of Macraspis and five of Chasmodia.

Macrauchenia, Professor Owen's name for a large extinct Mammiferous animal, referrible to the order Pachydermata, and by affinities to the Ruminantia and specially to the Camelidae.

The remains on which the professor found this species include a number of biblic bones belonging either to a quadruped resembling a rabbit perhaps a little smaller, or less or less; a portion of the carcass, or comminata; fragments of the left scapula; of the right humerus and ulna, and right femur, or the right femur and the left scapula; of the right ulna and the left humerus and radius. These portions of the skeleton were discovered by Mr. Darwin in a small bed of sandy soil, overlying a hornace accumulation of gravel on the south side of Port St. John, on the east coast of Patagonia, and belonged to the same species.

Mr. Owen observes that what is described as a perfect generation of a single transverse process in a cervical vertebra essentially a space intervening between two transverse processes, a rudimental rib, and the body of the vertebra, and proves that the same generation of this structure is found in the cold-blooded saurians and in the Ornithoherporines. He observes that the Camelidae differ not only from other ruminants, but from all other existing Mammalia.
the absence of perforations for the vertebral arteries in the transverse processes of the cervical vertebrae, the atlas excepted; and though it is true that in other Mammalia the two transverse processes are manifested on each side with their extremities united by a distinct cartilage, this appears in the fetal state only, for the cartilage of the articular processes becomes ossified and ankylosed to them. After referring to the structures of the inferior transverse process or its representatives in the Hippopotamus, the Mammals, and the Giraffe, Mr. Owen proceeds thus: 'In the long cervical vertebrae of the Camel and Llama, the transverse processes are not developed in the same perpendicular plane on the side of the vertebrae, but at some distance from each other; the lower transverse processes (fig. 1, a) being given off from the lower part of the anterior extremity of the body of the vertebra; the upper ones (fig. 1, b) from the base of the superior arch near the posterior parts of the body of the vertebra. The extremities of these transverse processes do not become united together, but they either pass into each other at their base, or continue throughout life separated by an oblique groove. This groove would not however afford sufficient defence for the important arteries supplying those parts of the brain which are most essential to life; and accordingly the vertebral arteries here deviate from their usual course, in order that adequate protection may be afforded to them in their course along the neck. From the sixth to the second cervical vertebra inclusive in the Auchenia, and from the fifth to the second inclusive in the Camel, the vertebral arteries enter the vertebral canal itself, along with the spinal chord, at the posterior aperture in each vertebra, run forwards on the outside of the dura mater of the chord, between it and the vertebral arch, and when they have thus traversed about two-thirds of the spinal canal, they perforate the posterior part of the spinal lamina, and emerge directly beneath the anterior oblique or articulating processes, whence they are continued along with the spinal chord into the vertebral canal of the succeeding vertebrae, and perforate the sides of the anterior parts of the superior arch in like manner; and so on through all the cervical vertebrae until they reach the atlas, in which they dispose, and consequently the structure of the arterial canals, resemble those in other Ruminants. The two cervical vertebrae of the Macrauchenia present precisely the structure and disposition of the bone canals for the vertebral arteries which are peculiarly characteristic of the Camelidae among existing Mammalia.' Fig. 2 shows the groove and orifices of the canal for the vertebral artery in a section exposing the spinal canal. Mr. Owen then goes on to show that the vertebrae of the Macrauchenia also closely resemble the middle cervical vertebrae of the Vicuña and Llama in their elongated form; approaching the Auchenial division of the Camelidae, and deviating from the true camels in the relations of the length of the body of the vertebrae to its breadth and depth, and in the much smaller size of the inferior processes. The author observes that, excepting the Giraffe, there is no existing Mammal which possesses cervical vertebrae so long as the Macrauchenia; but that the cervical vertebrae of the Giraffe differ in the situation of the perforations for the vertebral arteries, and in the form of the terminal articular surfaces. Both the cervical vertebrae described by Mr. Owen are of the same size, and each measures 6½ inches in extreme length, 2 inches in breadth, and 2 inches 4 lines in depth. Among the peculiarities of structure, a small longitudinal process (fig. 2, c) is given off immediately below the base of the anterior process, and this is not observable in any of the cervical vertebrae of the Giraffe or Camelidae. In the form of the articulating surfaces of the bodies of these vertebrae the Macrauchenia deviates from the Giraffe and Camel, but resembles the Auchenia. The anterior articulating surface is convex and almost hemispheric in the Giraffe and Camel, whilst the posterior surface is proportionally convex; but the neck of the neck is articulated by ball and socket joints, yet not, as in most reptiles, with intervening synovial cavities, but by means of the concentric ligamentous intervertebral substance characteristic of the Mammals. The degree of convexity and concavity of the articulating surface of the bodies of these vertebrae in the Llama and Vicuña is much less than in the Camels, and the former consequently carry their necks more stiffly and in a straight line. The anterior articulating surface in Macrauchenia is less convex than it is in the Llama, and the posterior surface is less concave. From an analysis of the comparative structure of these vertebrae in the Camel, the Llamas, and the Macrauchenia, Mr. Owen infers that the latter carried its neck in the same stiff and upright position as is manifested in the Llamas.

There is not in the collection a fragment of dorsal vertebra, ribs, or sternum; but the seven lumbar vertebrae form a consecutive series from the same individual as that which the cervical vertebrae belonged; and though these lumbar vertebrae do not possess such distinctive characters as those of the neck, they contribute not unimportantly to the illustration of the osteology of the animal and its affinities. No existing Pachyderm has more than six lumbar vertebrae; the Camels and Llamas only, among the Ruminants, possess seven; and here Mr. Owen discovered modifications of form in which the Macrauchenia deviates from the Camelidae and approaches the Horse and Hippopotamus. In the Macrauchenia, as in the Rhinoceros, Tapir, Hippopotamus, and Horse, the transverse processes of the last lumbar vertebrae are of considerable thickness and extent, and are joined by anarthrosis to the transverse processes of the sacrum; but the bony structure of these joints would indicate that they were not subject to be obliterated by ankylosis. Sufficient of the sacrum and osa innominata remain to enable Mr. Owen to state that the sacrum was ankylosed to the ilia: the lower boundary of this ankylosis is marked below by an external ridge, and by vascular canals and grooves in the substance of the bone, as in the Hippopotamus.
Of the remaining portions, the anchylosed fore-arm and leg, and the fore-foot, are the most characteristic. The portion of the antebrauchium which is preserved presents a condition of the radius and ulna intermediate to those which respectively characterize the same bones in the Pachydermus and Camels. In the former, the radius and ulna are separate bones, united in the same position by a ligament, but so organized that the movement of supination cannot be effected. A bony confluence joins these bones partially in the ordinary Ruminants, but this rarely extends to the proximal extremities. In the Camel and the Llama the anchylosis is complete, so that no trace of the original separation of the radius and ulna, is perceptible, and the olecranon, or elbow, appears as a mere process of the radius. The anchylosis in Macrauchene is also complete, but the boundary-line is clearly defined, and the proportion which each of the bones contributes to the great articulating surface for the distal end of the humerus is easily distinguishable.

Macrauchene the fibula is indeed entire, but it is confluent with the tibia through nearly its whole extent. The fibula and tibia are distinct bones in both the Palaeotherium and Anoplotherium. It is to the former genus, and especially to Palaeotherium magnus, that the Macrauchene presents the nearest approach in the general form of the tibia, the principal leg-bone; but in the Macrauchene the tibia is relatively shorter and thicker, and straighter, and less expanded at its extremities, especially the upper one, than in any of the Palaeotheres.

Of the few bones of the part which are preserved the astragalus is fortunately one. Mr. Owen has compared the bone, which he justly says is the very one that an anatomist would have chosen, had his choice been limited to a single bone, with the astragalus of the Giraffe and other Ruminants: the Camel, the Anoplotherium, the Hippopotamus, Rhinoceros, Tapir, and Palaeotheria, and he comes to the conclusion that it is with the Pachyderms having three toes to the hind-foot that the Macrauchene agrees in the most distinguishing characters of this valuable bone. The results of a paper of minute detail, great research, and happy combination, are thus summed up by the professor.

Thus we obtain evidence, from a few mutilated bones of the true long-legged and true long-legged animals of the race, that there once existed in South America a Pachydermatous quadruped, not proboscidian, which equaled in stature the Rhinoceroses and Hippopotamuses of the Old World. But this, though an interesting and hitherto unlooked for fact, is far from being the sum of the information which is yielded by these fossils. We have seen that the single unequal phalanx bespeaks a quadruped of the great series of Ungulata, and this indication is corroborated by the condition of the radius and ulna, which are fixed immovably in the prone position. Now, in the ungulate series there are but two known genera—the Rhinoceros and Palaeotherium—which, like the quadruped in question, have only three toes on the fore-foot. Again, in referring the Macrauchene to the tridactyle family of Pachyderms, we find, towards the close of our analysis, and by a detailed comparison of individual bones, that the Macrauchene has the closest affinity to the Palaeotherium. But the Palaeotherium, like the Rhinoceros and Tapir, has the ulna distinct from the radius, and the fibula from the tibia; so that even if the Pachyderms had actually presented the same peculiarities of the cervical vertebrae as the Palaeotherium—a fact we may have been hazardous, to say the least, while ignorant of the dentition of the latter, to refer it to the genus Palaeotherium.

Most interesting indeed will be the knowledge, wherever the means of obtaining it may arrive, of the structure of the skull and teeth in the Macrauchene. Meanwhile we
cannot but recognise in the enclosed and confluent state of the bones of the fore-arm and leg, a marked tendency in it towards the Ruminant order, and the singular modification of the cervical vertebrae have enabled us to point out the precise family of the order with which the Macrauchenia is more immediately allied. In first demonstrating this relationship it was shown in how many particulars the Cameliidae, without losing the essential characters of Ruminants, manifested a tendency to the Pachydermatous type; and the Anoplotherium, bear to a reciprocal transition from the Pachyderms to the Ruminants through the Cameliidae, cannot but be viewed with extreme interest by the zoologist engaged in the study of the natural affinities of the animal kingdom.

The Macrauchenia is not less valuable to the geologist in reference to the geographical distribution of animal forms. It is well known how unfrequent and unlikely was the announcement of the existence of an extinct quadrapod entombed in the Paris basin, whose closest affinities were to a genus (Tapirus), at that time regarded as exclusively South American. Still greater surprise was excited when a species of the genus Didelphys was discovered to have come from Europe, or even from Asia; but on the other hand, we find in South America, besides the Tapir, which is closely allied to the Palmothere, and the Llama, to which the Anoplotherium offers many traces of affinity, the remains of an extinct Pachyderm, nearly akin to the Elephant, but more or less companied by the Macrauchenia, is itself in a remarkable degree a transitional form, and manifests characters which connect it both with the Tapir and the Llama. (Zoology of the Voyage of H.M.S. Beagle.)

MACRinus, Opilius, a native of Mauritania, was prefect of the praetorium under Antoninus Caracalla, whom he accompanied in his expedition against the Parthians, and caused to be murdered on the march. [Caracalla.]

Macrinus was immediately proclaimed emperor by the army, ad 218, and was afterward proposed to the senate, which, after a long discussion, was proclaimed Caesar; both elections were confirmed by the senate. Macrinus, after a battle with the Parthians near Nisibis, concluded peace with them. On his return to Antioch he was assassinated by a party introduced by Caracalla. But his excessive severity displeased the soldiers, and an insurrection, excited by Messa, the aunt of Caracalla, broke out against Macrinus, who, being defeated near Antioch, fled as far as Calchedon, where he was arrested and put to death. (Juv. Sat. 3. 142.)

A life was composed by E Machinery, who succeeded him.

MACROBIUS, AMBROSIUS Aurelius Theodosius, probably lived about the middle of the fifth century of the Christian era. He is said to have been born at Apulia, in Southern Italy, and to have passed his life in study and peace. He is generally supposed to be the person who is mentioned in the Cod. Theod. vi. 8, as 'chamberlain of the royal bed-chamber' (acri cubiculi prefectus), during the reigns of Honorius and Theodosius the younger, but he does not appear certain. It is said whether he was a Christian or a pagan; it has been supposed, from his occupying so high a rank at the court of a Christian emperor, that he must have belonged to the Christian religion; but this opinion seems quite at variance with the whole scope and tenor of his writings. The place of his birth is uncertain; but he informs us himself, in his preface to the 'Saturnalia,' that the Latin language was not his mother-tongue.

Three works of Macrobius have come down to us: a commentary on the Republic, a work on the lower world, 'Scipio,' the sixth book of Cicero's 'Republic,' 'Dialogues' which were supposed to have taken place during the Saturnalia at the house of Vettius; and a 'Treatise on the Latin and Greek Verb,' which however is imperfect.

The Carpe in various, but in general triangular, very often not extending upon the last thoracic ring. The anterior feet short, and nearly always very slender; those of the succeeding pairs more or less diliform; the length of the second pair varies from nine to ten times the length of the post-frontal portion of the carapace, and always much exceeding the double of that portion; the succeeding feet in general very long also. The basal joint of the external annex is nearly always constitutes the major part of the leg, and projects itself to the front. In the greater portion of the tribe the third joint of the external two-feet is inclined to oval or triangular, longer than it is wide, and does not support the succeeding joint as far as the external angle, as in the other Ozyrhynchis. (M. Edwards.)

Habits. Food, etc.—The localities of the Macropodians are considerable depths in the sea, where they lie hid among the sea-weeds; they are also found on oyster-banks. They live slowly and quietly. The young must not be exposed to other marine animals, and the probability is that they live principally on Annella, Planaria, and small mollusks. (M. Edwards.)

Genera. Leptodipus. (Leach.)

Established at the expense of the genera Inachus of Facbricius and Macropus of Latreille. M. Milne Edwards.
observes that it is very remarkable for the general form of its body and the excessive length of the feet; and states that it presents in an exaggerated manner all the distinctive characters of the family and of the tribe to which it belongs.

Generic Character.—Carapace nearly triangular, and not covering the last ring of the thorax; rostrum styliform and of enormous length; eyes large and not retractile; internal antennæ, when folded back, following the longitudinal direction of the body. First joint of the external antennæ very long and completely confounded with the neighbouring parts of the shell, the second inserted at a considerable distance in front of the orbits and below the rostrum. Epistome much longer than it is wide. Third joint of the jaw-feet nearly triangular, and carrying at its external angle the succeeding joint, which is very much developed. The sternal plastron as long as it is wide, but very much narrowed between the first pair of feet, which are very short and extremely long, but less than any of the rest; the length of those of the second pair equals nine or ten times the length of the post-pectoral portion of the carapace. Abdomen in both sexes composed of six joints, of which the first, which is very much developed, and as long as it is wide, occupies the dorsal surface of the body, while the last is formed by the ossification of the sixth and seventh abdominal rings. (M. Edwards.)

Geographical Distribution of the Genus.—Coasts of America and of the Antilles, as far as is present known.

Example, Leptopodia sagittaria, Leach (Cancer seticornis, Horst.; Inachus sagittarius, Fabricius).

Stenorhynchus Phalangium.

Achirus. (Leach.)

This genus is very nearly allied to Stenorhynchus and Inachus, but is distinguished from the other genera of this family by the form of the posterior feet and some other characters.

Generic Character.—Carapace, as in the greater part of the family, not extending on the last segment of the thorax; nearly triangular, and convex on the branchial region. Rostrum nearly null; eyes not retractile, and curved upward rather long peduncles; first joint of the external antennæ solid to the front and advancing above the level of the internal canthus of the eye; the second joint inserted on the sides of the rostrum and entirely exposed above. Epistome nearly square; third joint of the external jaw-feet longer than wide, nearly triangular, and giving attachment to the succeeding joint near its anterior and external edge. Sternal plastron suddenly narrowed between the anterior feet, which are slender and short, while those of the succeeding pairs are styliform; the second pair are nearly twice and a quarter longer than the post-pectoral portion of the carapace, and terminate by a styliform and entirely straight joint; the succeeding feet are much shorter, and the terminal joint of the four last is large, compressed, and styliform. Abdomen composed of six joints in both sexes. (M. Edwards.)

Geographical Distribution of the Genus.—Achirus has hitherto, been only found in the British Channel. Example, Achirus Crotchii.
Description.—Rostrum formed of two small triangular teeth and not extending beyond the second joint of the external antennae; a spine on the anterior face of the ocular peduncles; genital and cardinal regions elevated in the form of tubercles; feet with very long hairs, and hooked.

Locality, Habits, &c.—Falmouth in England, and the mouth of the Rance near Saint Malo. The species lives among the sea-weeds and oysters.

Camposeia. (Leach; Latreille.)

Generic Character.—Carapace convex and nearly pyriform, but truncated anteriorly; rostrum rudimentary and scarcely reaching beyond the internal canthus of the orbits. Eyes supported upon a stalk and very long; in the female the first pair are the shortest and are not stouter than the succeeding ones; those of the third, the fourth, and the fifth pair are a little longer, and are also terminated by a cylindrical nail slightly curved downwards. Form of the feet of the male, and disposition of the abdomen in this genus, known not. (M. Edwards.)

Geographical Distribution of the Genus.—The seas of Asia. Example, Camposeia retusa. Locality unknown.

Camposeia Retusa. a, details of head.

Eurypodius. (Günther.)

A genus forming in certain points a passage between the Macropodians already noticed and some of the Maitide, such as Halinus auritus; approaching the latter in the form of the feet, and resembling the former in the length of those members and in the disposition of the eyes.

Generic Character.—Carapace triangular, twice as long as it is wide, rounded posteriorly, narrow anteriorly, convex and unequal above; rostrum formed by two long and horizontal horns; eyes carried on peduncles of moderate length and not retractile; disposition of the internal and external regions in Stenomorphus Inachus, &c.; epistome wider than it is long; third joint of the external jaw feet nearly square, as wide as it is long, and deeply notched anteriorly and internally, in order to give insertion to the succeeding joint. Anterior feet of the length of the body in the male, and much shorter in the female; they are a little convex and the fingers are slightly curved inwards. The succeeding feet are very long, their third joint is cylindrical, but the fifth is compressed and dilated below; its greatest width is below the middle; the finger is large, recurved, very sharp, and capable of being bent back against the lower edge of the preceding joint, after the manner of a subcheliform claw; the length of the second pair of feet is nearly twice and a half that of the post-frontal portion of the carapace, and the succeeding feet diminish successively in length yet very little. Abdomen composed of seven joints in both sexes. (M. Edwards.)

Geographical Distribution.—Indian Sea.

Example, Eurypodius Latreilli.

Eurypodius Latreilli.

Locality.—Falkland Islands.

Amathea. (Roux.)

This genus agrees in some respects with the Pericerae of Latreille; indeed the aspect of both is the same, but the external antennae of Amathea have not the peculiar disposition which is visible in Pericera, and the space which the orbits leave between them is scarcely wider than the base of the rostrum, whilst in Pericera it is more than double.

Generic Character.—Carapace in the form of an elongated triangle with a rounded base; its upper surface and its borders beset with enormous spines; the rostrum, which is terminated by two large divergent horns, nearly as long as the post-orbital portion of the carapace. Eyes small and partially protected by a spine which occupies their external canthus, but, as in the preceding genera, they are not retractile and always remain projecting. External antennae presenting nothing remarkable; the basial joint is long, very narrow, and soldered to the front; the stem is inserted under the rostrum, at some distance before the level of the eyes; it is very slender, and its two first joints are of equal length. Epistome large and nearly as long as it is wide; the third joint of the external jaw-fest is dilated outwards and truncated at its two internal angles. The first pair of feet are shorter than the succeeding ones; they are filiform in the female and a little convex or swollen in the male. The succeeding feet are long and filiform; the second pair are more than thrice as long as the post-orbital portion of the carapace, without including the posterior spine; the others are much shorter, their terminal joint is long, sharp, and without either spines or teeth on its inferior surface. Abdomen composed of seven joints in both sexes. (M. Edwards.)

Example, Amathea Rissoana.

Description.—Carapace armed with thirteen enormous spines, three of which elevate themselves from the stomatinal region, one from the cardinal, and the others occupy the border of the carapace; one on the intestinal region, three on each side upon the branchial region, and one upon each of the hepatic regions: there is a small spine in front of the eyes, and a larger one at the anterior angles of the carapace. Feet very long as the carapace, covered with a sort of down. Length about two inches; colour yellowish, with two spots, red upon the front.

Locality.—Toulon.

Inachus. (Leach.)

The genus Inachus, as established by Fabricius, comprehended nearly all the Ozyrhynchi, with the exception of the Parthenopidae. The genus is now much restricted.

Generic Character.—Carapace nearly triangular, not much longer than it is wide, and highly embossed above.

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The second section consists of Inachus dorynchus and thoracicus, and the third of Inachus leptorrhynchus.

Egeria.

This genus is Asiatic in its geographical distribution, and M. Milne Edwards divides it into two sections; the first with the third joint of the external jaw-feet deeply notched at its anterior and internal angle (Egeria archoooides and E. Herbotti), and the second with the third joint of the external jaw-feet not notched at its anterior and internal angle (Egeria Indica). [Egeria, vol. i., p. 304.]

Docea. (Leach.)

Generic Character.—Carapace nearly globular, hairy, and more or less beset with spines; front raised, and the lateral edges of the carapace, instead of joining the orbit, directed towards the anterior border of the buccal tent; rostrum short and very narrow; the orbit directed obliquely forwards, and entirely lodging the eyes, which are very small, and have no trace of a spine at the inner angle of their upper border, a character which renders them easily distinguishable from the Libinia. The basi-cerato of the external antennae advances much beyond the internal canthus of the eyes, and terminates nearly in a point under the front, to which it is intimately united; the second joint of these antennae is short and placed between the edge of the rostrum; the third and the fourth joints are very small. Epistome very little developed, and much wider than it is long. The third joint of the external jaw-feet is nearly square, slightly dilated outwardwards, and rather deeply notched at the internal and anterior angle. Sternal plastron nearly circular; the anterior feet weak and very small, not more than once and a half of the length of the carapace, the hand nearly cylindrical. The succeeding feet very long, though not always equaling those of the Egeria, slender, and cylindrical; their terminating joint long and styliform; the second pair from twice to three times as long as the post-frontal portion of the carapace, and the succeeding pairs diminishing progressively. The abdomen rare; sometimes only five distinct joints are to be detected in that of the female; sometimes there are seven, as in the male.

M. Milne Edwards, who gives the specific character here stated, observes that the Docea bear the greatest analogy to the Egeria, and establish the passage between those Macropodidae and the Libinice which belong to the tribe of Maianus. [Madr.] Geographical Distribution of the Genus.—Where known, the Indian Seas.

Example, Docea Rissoi.

Locality unknown. (Hist. Nat. des Crustacés.)

MACROPUS, the scientific name for the Kangaroo. [Marupialia.] The term is also used by M. Latreille to designate a genus of brachyurous decapod crustaceans. [Macropodians.]

MACROHAMPUS. [Scopolo.] MACROURA, or MACRURA, the scientific name for that section of Crustaceans which have the abdomen, usually called the tail, long in contradistinction from that section (Brachyura), which have the tail short. The American lobster is an example of a Macuroura crustacean, and the common crab of a Brachyurous crustacean. [Crustacea, vol. viii, p. 197.]

MADAGASCAR (called by the natives Madagasca), a large island in the Indian Sea, about 240 miles from the coast of Mozambique on the eastern shores of Africa, extends from 12° lat. to 25° 43' S. lat., and between 45° and 51° E. long. From north to south, between Cape Ambroise, Natal, and Cape Mary, or Romain, it is 960 miles long, with a width varying from 200 to 500 miles, so somewhat more than the extent of France. It is separated from the continent of Africa by the Channel of Mozambique.

Though a short description of this island occurs in Maria Polo, and it was discovered by the Portuguese in 1556, we are still very imperfectly acquainted with its natural features and riches. It is stated that a mountain-range traverses the island in its whole length, and that some of the summits...
rise to an elevation of 10,000 or 12,000 feet. Its effects cover the greater part of the interior, and in some places approach to the very shores of the sea, especially along the western coast between Cape Passavant and Cape Ambré. The stupendous peak of Matowla raises its head not far from the shore, and also south of Cape St. Andrew in different places. But between Cape St. Andrew and Cape Passavant a low marshy plain extends along the shore, and runs 60 or 80 miles inland, which is covered by the great lakes, swamps, lakes, lagoons, and rivers, admirably adapted for commerce, but they are all neglected, with the exception of Bambatooka. The eastern coast seems to be high and rocky from Cape Ambré to the large bay of Antongil, one of the most spacious harbours of Madagascar, from which the island, low and swampy, is a distance inland varying from to 40 miles, and extremely unhealthy. In the interior the country in many places contains extensive plains, which are excellent pasture-ground, and frequently possess a soil adapted to agriculture. Bambatooka Bay, on the western coast, is the estuary of several rivers. It is 17 miles deep and three and a half miles wide at the entrance; but inside it is nearly eight miles wide. Bambatooka itself is an inconsiderable village, but Majunga, on the north side of the bay, is a large town, and the harbour of Thanana-avire, the capital of the Ovaas, is the most powerful, industrious, and civilised nation of the island. Vessels drawing 15 feet water can proceed to Majunga and 12 feet water to Thanana-avire, which is situated on a river Betsibokka, a distance of 10 miles, there is an extensive lagoon, deep enough to be navigated by vessels of considerable burden; in spring-tides the water rises 20 feet at the mouth of the river. From its mouth to Thanana-avire is a distance of 245 miles, and to the capital of the Ovaas Betsibokka; from the point where the navigation terminates merchandise is carried overland to Thanana-avire, a distance of about 145 miles. Following the road from Majunga along the Betsibokka to the capital, the country is low and marshy plain, but well adapted to the culture of rice: 40 miles farther, the land is more elevated and the rice tree (Sagus raffa) abounds. Then for 70 miles a barren country intervenes, and the remaining distance of 75 miles to the capital is rather a level country, in which rice, coffee, sugar, and tobacco are cultivated. Thanana-avire is situated in 18° 56′ S. lat. and 47° E. long., at an elevation of about 4000 feet above the sea level. In 1817 it had more than 60,000 inhabitants, but has since increased in population.

The inhabitants seem to belong to different races, which have mixed together, and speak only their own language, which is easily understood by the Malagasy. It is stated that silver and copper also occur in the mountains. The population is estimated at 168,500,000.

The Ovaas, who inhabit the elevated plains in the interior, are in height rather lower than the Estrots, but robust, and of a dark complexion, with very dark hair, and large eyes and mouths. Their hair is long but coarse. They are distinguished by their skin in manufa;

The Madagascar are divided into several tribes, and are of various races, each tribe having its own language and customs. They are divided into the following tribes: the Malagasy, the Berberris, the Merina, the Betsileo, and the Betsimis. The Malagasy are the most numerous, and are divided into the Northern and Southern tribes.

The Merina are the most powerful, and are divided into the Western and Eastern tribes. The Betsileo are the most numerous, and are divided into the Western and Eastern tribes. The Betsimis are the most numerous, and are divided into the Western and Eastern tribes. The Madagascan tribes are divided into the Northern and Southern tribes.

The climate of Madagascar is very different from that of the Indian Ocean, and is characterized by its great diversity of climate and vegetation. The country is divided into two main regions: the eastern coast, which is hot and humid, and the western coast, which is cool and dry. The eastern coast is subject to frequent storms, and is liable to be swept by the sea. The western coast is subject to occasional storms, but is generally calm and quiet.

The climate of Madagascar is highly varied, and is characterized by its great diversity of climate and vegetation. The country is divided into two main regions: the eastern coast, which is hot and humid, and the western coast, which is cool and dry. The eastern coast is subject to frequent storms, and is liable to be swept by the sea. The western coast is subject to occasional storms, but is generally calm and quiet.

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structed. Several young people were sent to the Mauritius and even to England to receive instruction. European mechanics were well received and employed by Radama. Fane, resigned into his arm y discipline and arms of the English. Besides the Ovahs, the Seclavas have distinguished themselves, but only as pirates. They inhabit the northwestern shores, from whence they send fleets consisting of several small vessels to the Comoro Islands and even to the eastern coast of Africa for the purpose of making war, but since the abolition of the slave trade, which Radama, their conqueror, effected at the request of the English, their excursions have been less numerous and destructive. Still however slavery exists in Madagascar. The French have tried to establish colonies on this island. The first attempt was made in 1665, and several others were made afterwards. These settlements never prospered, partly on account of the unhealthiness of the island, partly on account of the warlike character of the inhabitants. Since the return of peace in Europe the French have again made some attempts in two or three places. In 1821 they settled on the Isle Madame St. Mary, which is north of the fishing place, a very rich and deep soil, and most people live from two to three miles in breadth. This settlement is improving, though the French at first suffered much from the climate. There is another settlement at Foule Point Bay, but it is insignificant. There are also small settlements at the latter, and at the village of land, where the French have built a small fort, called Fort Dauphin. In these establishments the French cultivate sugarcane, coffee, and other tropical productions, which are sent to the island of Bourbon. The English of the French are obliged to cut down many of the trees, because the Gafras, cattle, tortoise-shells, amber, and some minor articles. Some parts of Madagascar keep up a commercial intercourse with the southern coasts of Arabia. (Owen's 'Voyages to Explore the Shores of Africa, Arabia, and Madagascar.' Lockie Lewis's 'Account of the Ovahs,' in the London Geographical Journal, vol. v.; and History of Madagascar, by the Rev. W. Ellis.)

MADALOINI. [LAVOLO, TERRA D] (Lorato, Terrea Dl)

MADALOINI (Fecoraum, Limmus), a plant which is cultivated in particular districts for the roots, which produce a fine red dye. It was formerly more extensively cultivated in England than it is now, when it can be imported at a less price than it can be raised. It requires more attention, besides occupying the ground for three years before it comes to perfection.

Any soil which is deep and dry, and in which there is a good proportion of humus, will suit this plant. A rich land, in which the roots can separate and swell, while they find sufficient nourishment, is preferable to the stiffer soils. If it has lain for a considerable time in grass before it is ploughed up, it will be all the better. The preparatory tillage of the land must be such as to provide a good root, so that the colouring matter is so penetrate that the bones of earth fed on madder for a considerable time have been tinged of a red colour. This practice however is not to be recommended, as it must injure the growth of the root. This should be ploughed or dug in the winter, which must be abundant, with every part, that, wherever the roots spread, they may find sufficient nourishment. The land is usually laid in beds, with deep intervals dug out with the spade, somewhat like asparagus beds. The width of these beds differs according to the natural moisture of the climate; in Belgium they are only three feet wide; and that width seems the best for a moist climate like that of England, except upon very light soils, where a greater width may be more advantageous. Fencing with the said m offered to the reaper and the roots, and the roots are gathered into heaps under a shed, or protected from the weather by straw, if it be rainy. They are afterwards dried in a kiln, and are then fit to be sold to the dyer. If the quality is good, the root on being broken has a bright colour varying towards purple. A yellow hue is an indication of inferiority. The produce of an acre of madder is from 20 cwt. to 20 cwt. If the rent and expenses of three years of taken into consideration, and the manure and labour required, it will be readily seen that unless the price of the root is very high, it will not be sufficiently remunerative, and will not pay the produce of the root, as well as the grass and potatoes, carrots, parsnips, which will not require so good a soil nor so much manure. This is a sufficient reason for the decrease of the cultivation of madder in England. If some particular instances great profits have been made, the madder is mostly cultivated for the in wooden vessels; but in the above cases it is sold to the dyer in the form of blocks. The quality of the dyeweed varies so much, that it is not a crop to be recommended, except a peculiar situations and circumstances.

Chemical and Colouring Properties of Madder. The root is the only part of the plant of principal use; it is subjected to the operations of picking, dying, from the earth and epidermis, and powdering. The powder is of a yellowish-red colour, and contains three distinct colouring matters, two of which, azurin and purpurin, which are not in the Levant name for madder (from whence, the Levant name for madder) is obtained by gradually m
Madder in fine powder with an equal weight of sulphuric acid, and allowing the mixture to remain for some days; by this all the vegetable products but alizarin are carbonized; the residue is to be washed with water to separate the acid, then dried, and treated with alcohol to separate a little matter, and afterwards with repeated portions of boiling alcohol, which dissolves the alizarin; this alcoholic solution is treated with water, the alcohol to be separated by distillation, and the residual liquor being thrown on a filter, the alizarin remains on it.

The alizarin may also be separated from the charred mass after it has been washed with water and alcohol, and dried, by boiling it even when boiling; it dissolves in alcohol and water in all proportions; the aqueous solution is of a pure rose-red colour, and the aethereal solution is of a fine golden yellow. Diluted acids do not dissolve it, but on concentrating sulphuric acid readily takes it up, and the solution is a blue or greenish blue in cold, but yellow when boiled; in concentrated nitric acid decomposes it, but chloroform acts finely upon it. Amonia, potash, and soda, and their carbonates, all dissolve alizarin, and yield with its solutions of most beautiful violet colours, which combine red in various tissues which have been mordanted, and forms with them very fixed colours, which resist even the action of soap and boiling water. It is stated to be composed of 20 hydrogen, it contains, and

Purpurin.—In order to obtain this, madder-root is to be treated with a solution of carbonate of soda till it ceases to yield colouring matter; it is then to be washed, and treated for some hours with a hot solution of a little sulphuric or hydrochloric acid to be added, which occasions a precipitate of a fine slightly-orange red colour; this, after being collected and washed on a filter, and treated with alcohol, yields a solution which, when subjected to distillation, deposits purpurin. The properties of this substance are, and include the properties of salt, and colour when dried, especially when hot, and after, both hot and cold, dissolve it readily; the aethereal solutions are of a brilliant cherry-red colour, and yield by spontaneous evaporation acicular crystals of four to five lines in length. This substance is distinguished from alizarin not only by difference of colour, but because it is soluble in a solution of soda, and insoluble in carbonate of soda and phosphoric acid; it dissolves in this last solution by the addition of a few drops of potash. The colours which it imparts to different substances are of a purple or violet colour, of a very extraordinary brilliancy, and but little durable than those of alizarin.

Xanthin, or the yellow colouring matter of madder, is obtained by very tedious processes; it possesses the smell of the root, is very soluble in water and alcohol, but less so in soda, and is not dissolved by an acid. Concentrated sulphuric acid renders a solution of xanthin green, and precipitates a powder of this colour, which is soluble in water. According to Berzelius it is most probably modified alizarin.

Madder yields colours of the greatest permanence. It is employed for dyeing linen and cotton red, and two kinds of it are fixed on cotton; one is called simply madder red, and the other, which possesses a much higher degree of lustre and brilliancy, is called Adriano red. Madder was for a long time obtained from the Levant. It does not afford a colour of sufficient brilliancy for dyeing on silk, and linen takes it with greater difficulty than cotton. It is also employed in calico-printing and in the preparation of madder lakes.

Independently of the colouring principles above described madder contains lignin, gum, sugar, resin, a bitter substance, a vegetable acid, vege-animal matter, and salts.

Trade in Madder and Madder Roots.—The quantity of this dyeing stuff imported in its natural state and grade, in each of the ten years from 1829 to 1838, has been as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Madder Root</th>
<th>Ground Madder</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1829</td>
<td>33,441</td>
<td>70,017</td>
<td>103,558</td>
</tr>
<tr>
<td>1830</td>
<td>37,074</td>
<td>51,624</td>
<td>88,698</td>
</tr>
<tr>
<td>1831</td>
<td>52,449</td>
<td>43,935</td>
<td>96,384</td>
</tr>
</tbody>
</table>

Nearly the whole of these imports are obtained from Holland, France, and Turkey. In 1837, the latest year for which we have such particulars, there were brought from Holland 34,275 cwt., from France we received 125,574 cwt., of which about one-half was in the like state of preparation; and from Turkey 36,673 cwt. of the unprepared roots. Some small quantities are brought in from Algeria and Italy. Of late years we have received from 3000 to 3000 cwt. annually from India. The duty chargeable on consumption is 2s. per cwt. on the prepared madder, and 6d. per cwt. on the roots.

Madeira, an island situated in the Atlantic Ocean, between 35° and 40° north latitude, and 15° and 20° west longitude, and about 400 miles from the north-west coast of Africa. It is nearly 45 miles long, and its greatest breadth nearly 20 miles. The area is said to be 360 square miles, or nearly that of Huntingdonshire.

This island is a mass of hills, rising with a rather steep ascent from the south and from the north towards the interior, where the highest part of the mass runs from south of east to the north west, between Cape de S. Lourenço on the east to Cape de Fango on the west. This, the most elevated point, is at the foot of the great cliffs which close the declivity of the rocks, to the height of 2500 feet: the Pico Ruivo, the highest summit, attains 5993 feet above the sea-level. Both declivities of the mountain-mass are furrowed by deep and generally narrow valleys and depressions, traversed by streams of clear water. These valleys contain the great and small rivers which have cut their way through the declivities of the rocks, to the height of 2500 feet above the sea. The rocks in most places come down to the very shore of the sea, and enter it with so rapid a descent, that soundings are to be only found close to the shore, and even then on a rocky and uneven ground, and at a depth of 35 to 50 fathoms.

The climate of Madeira is very mild. The mean temperature of the year does not exceed 68°. In the months of December and January the thermometer may usually stand below 60°; the mean temperature of that season being 63°. The mean temperature of the hottest months (August and September) is between 73° and 74°; but when the eastern and south-eastern winds bring to the island the hot air from the African desert, the thermometer rises to as high as 85° and even 90°. Rain is not confined to a certain season of the year, but occurs at all seasons. Madeira sometimes suffers from hurricanes. The climate is considered very healthy, and many persons in England who are suffering from diseases in a danger of recovery are introduced to it for the purpose of diminishing their sufferings and prolonging their life.

In the lowest region of the island, to about 750 feet above the sea-level, many tropical plants are cultivated, as the date palm-tree, the plantain, two kinds of cactus, the sweet potato, Indian corn, coffee, and the American agave (Agave Americana), as well as the sugar-cane, the olive-tree, the pomegranate, and the fig. Above this region, to the height of from 2500 to 2000 feet above the sea-level, the fruits and grain of Europe, especially wheat and maize, are raised; and in this region are also the extensive vineyards, which furnish the most important article of exportation. Then follows a tract covered with high trees, which rise to the height of from 2000 to 3000 feet above the sea-level, and trees and fruits which are found which do not occur in Europe. This region contains also extensive forests of chesnut-trees, the fruit of which is the common food of the inhabitants. Its surface is extremely broken, and bare rocks appear in many places. The highest plantations of coffee and tea are on the heights, where there is a sufficiency of earth and of rain and cold. No heavy dew.

New horses are kept, and most of them are imported. Cattle are more numerous, and of a large size. Asses are the most common domestic animals, and best adapted to the roads of the country as beasts of burden. Hogs are
rather numerous, as well as fowls. In the interior there are many wild swine and rabbits. Birds are not numerous, and fish is rare, on account of the great depth of the sea which surrounds the island. Salted cod constitutes one of the most important articles of import.

The principal town, and the only town of the island, is on the southern coast. It has only an open roadstead, with a rocky and very uneven anchorage, in which vessels are exposed to great danger from November to February, when gales from the south-east and south-west prevail. Yet this place is occasionally visited by ships to the Cape of Good Hope, or the E. Indies, as a place of refreshment, and from it the produce of the island is exported. The town consists of a pretty wide street along the sea-shore, where there are several good buildings, and numerous small gardens. It is about one mile's distance from the base of the hill. The number of houses amounts to about 2000, and that of the inhabitants to 20,000. The town is defended by four forts, and has eighteen churches and several convents. In the midst of the town is an open square, planted with exotic trees, Dracaena Draco, Jasminum azoricum, and Datura arborea.

The population of the island is estimated at 60,000, who are descendants of the Portuguese, but with a considerable mixture of African blood. The inhabitants talk still much Portuguese, and were formerly much greater. The inhabitants are a very industrious and enterprising people.

The commerce of Madeira is considerable. The exports are stated to amount to 600,000l., of which about 400,000l. is made up of sugar. The number of negroes on the island is about 5000. During the late war, when the Spanish wines were not brought to England, 30,000 pipes were exported from Madeira, according to the statement of Lord Valentia. The importation of Madeira wine into England in 1833 was 105,000 pipes. In 1853 the export was 146,000 pipes, and in 1862, 1491. The wine imported is Madeira wine and Malvasia de Madeira. The latter is cultivated on the northern coast, near the village of Machico, and amounts to about one-sixth of the whole quantity exported. Madeira wine is smuggled in hogsheads, and is of a different kind. It is a red wine, rich in flavor, and is very much esteemed for its healthful qualities. The Madeira wine is shipped in porto and salted, sole, and some tropical productions.

Madeira is said to have been visited by Robert Machin, an Englishman, during the reign of Edward III. It was discovered in 1419 or 1420 by Gonzales Zarco. It was then covered by an immense forest, which name is derived from the name of the island. The forest was set on fire, and it is said that the conflagration lasted seven years. Soon afterwards it was settled by the Portuguese, and the culture of sugar and wine was introduced. Sugar was grown to a considerable extent before the English settled; but upon that event the culture ceased, and was replaced by that of wine, which now seems to be giving way to coffee.

About 40 miles north-east of Madeira lies the small island of Porto Santo. It is a basalt rock, which does not exceed 500 feet in height. Indian corn and vegetables are cultivated for consumption, and a little wine for exportation. The population amounts to about 1200, of whom 600 live in the small town of Porto Santo, the roadstead of which is much exposed to storms before the wind. To the south-east of Cape St. Lourenco are three small basalt rocks, lying in a row from north to south. They are called Ilhas Desertas, and are only inhabited by sea-bowls, but they are visited from Madeira for the purpose of collecting bird's nests, which are the greatest part of their surface is covered.

(Lord Valentia's Voyages and Travels to India; Prior's Voyage to the Indian Seas; Spix and Martius, Travels in Brazil; Malte-Brun, Voyage round the World.)

MADIA, a genus of South American herbaceous plants of the Composite order, one of the species of which, M. sativa, is of value for the oil yielded by its seeds upon pressing.

The genus belongs to the tribe of De Candolle, a division of the family of Compositae, and is distinguished among its congeners by its roundish one-rowed involucre, the bracts of which are keeled and envelop the seeds, by a plane receptacle pellucidum at the margin and naked in the middle, and by its bald achene, which have four or five angles, and taper to the base. Madia mirabilis, which forms the only species, is an upright herbaceous annual, with oblong entire leaves, half axillary, opposite at the bottom of the stem and alternate at the top; the flower-heads are racemose, and the flower-stalk yellow. It has been cultivated in Europe, and apparently in California, for the sake of its oil, which is of excellent quality. It has lately attracted attention in Europe in consequence of Mr. Bosch, the superintendent of the gardens of the king of Wurttemberg, having succeeded in hybridizing it, and obtaining it in great quantities on a large scale. He found that as compared with rape and poppies the amount of oil yielded per acre acre was as follows:

<table>
<thead>
<tr>
<th>Oil Yielded Per Acre</th>
<th>Madeira</th>
<th>Rape</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poppy</td>
<td>264 lbs.</td>
<td>240 lbs.</td>
</tr>
</tbody>
</table>
Hamilton, with whom he was afterwards so closely united in forming the new constitution, and from whom he was so widely separated in carrying it into execution. It should be remarked that he did not offer the resolution which he had drawn up, on account of the jealousy even then entertained by Mr. Madison, of the thirty-fifth Congress, his authority and those who had been in congress, and it was confined to a member who was exempt from that suspicion.

While he was in the Virginia legislature he drew up the memorial and remonstrance against the project for a complete establishment of religion, in making an inquiry into the view to a permanent establishment; and he succeeded in defeating it. (Tucker's Life of Jefferson, chap. 4.) His talents and acknowledged influence at this time were all exerted in favor of a policy as liberal as it was practical and was so considered by many friends. From Virginia, he furthered his purpose, instead of making a fruitless opposition to it. He opposed the attempt to introduce paper-money; he was the efficient supporter of the laws introduced into the code prepared by Jefferson, With, and Pendleton; and he witnessed the recovery of said debt due to British creditors. He proposed liberal donations to General Washington and to Thomas Paine: the latter effort failed; the former succeeded; but the donation was refused. He carried an objection to the correspondence at this time with some French citizens; Against the proceedings of that body and in the opinions of its members, he was at the pains to keep a record of the debates, the only one extent which is either complete or authentic. He commonly wrote at night what had been said in the day, and his impression in pamphlet form has been made with A. H. Hamilton and John Jay in recommending it to the American people in newspaper essays, under the signature of Publius, which have since been published under the title of 'The Federalist.' The debates, which he would have been to publish during his lifetime, have lately purchased for 30,000 dollars, and they will soon be published.

After the federal constitution was submitted to the several States for their adoption, Mr. Madison went into the legislature, and in Mr. Patrick Henry he had the opposition to it; and it was to Mr. Madison's cool and powerful reasoning that its adoption in that State was mainly due. If it had failed there, it would have failed altogether. Mr. Madison had also more agency than any other individual in the admission of several States to the Union. In Congress no one had more weight personally; but soon finding that his views and those of Mr. Hamilton did not coincide as to the principles and spirit in which the federal government should be administered, he separated himself from the administration, and the late state of the United States. After the public debt was funded, he made an unavailing attempt to secure to the soldiers and other original creditors the benefits of the rise in value of the public claims, which speculators had purchased at about one-eighth of their nominal amount. Mr. Madison, who had so opposed the ministerial policy of which Hamilton was the chief author. He also opposed the unqualified assumption of the state debts by the federal government. After the French revolution broke out, Europe was in a political state of ferment, and the revolutionaries of the United States, for a time gave them their chief form and colour. Mr. Madison, who was inclined to the side of liberal principles, was a warm friend of the Revolution; and though its excesses were more unenlightened to no one than to himself, characterised as he was through life by mildness of temper, humanity, and love of order, yet he considered it as likely in the end to advance the cause of civil freedom, and it therefore had his hearty wishes for its success.

Though thus leading an organized opposition to General Washington, this city seemed to have no influence on their friendship, and it never produced positive alienation. Before his first term had expired, General Washington, being bent on retirement, conceived the purpose of a farewell address; and after a long and careful outline of his views he retained Mr. Madison to fill it up. Some years afterwards he greatly enlarged Mr. Madison's draft, which he then submitted to Messrs. Hamilton and Jay, and the document as published is found to contain some of Mr. Madison's original forms of expression. Through these and correspondence of these two great men continued until 1798.

After it was known that General Washington would retire in March, 1797, parties prepared themselves for the struggle of electing his successor, the federalists uniting in favor of Mr. Adams, and the republicans in favor of Mr. Jefferson. Mr. Adams succeeded by three votes. When parties were so nearly balanced, each redoubled its efforts for the ascendency. The administration party prepared two laws for removing dangerous and suspicious aliens, and for punishing libels upon the government (the Sedition Laws), which gave rise to controversies and a fit occasion to make a powerful appeal to the people. To further this object Mr. Madison, who was now withdrawn from congress, prepared a pamphlet; and when in 1798 prepared resolutions denouncing these acts of congress as infractions of the constitution, and inviting the concurrence of the other States. As some of the States opposed the doctrines, and the subject produced much excitement in the following winter, the resolutions were not published in time, but the resolutions of the Virginia legislature were published in the future. Mr. Madison's Report has since become a text-book for politicians on constitutional law and the relative rights of the States and government. When Mr. Jefferson was elected president, Mr. Madison was made his secretary of state, and from that time until his recent death he has been remembered in the history of the United States. But the principal parts which he acted will be briefly noticed here.

His pen was put in requisition in maintaining the claim of the United States to the right of deposit at New Orleans in the treaty with Spain, the true boundary of Louisiana; in corresponding with Mr. Rose and Mr. Jackson, ministers of Great Britain, on the subject of the attack on the Chesapeake; in drawing up the treaty with the Hesse land, and the objections to that which was made; and in corresponding with the American ministers on the French Decrees and British Orders in Council. Besides these official papers he wrote an 'Examination of the Doctrines of National Law' asserted by Mr. Stephens, which is perhaps the most compact piece of logic that he ever produced, and the most satisfactory exposition of the relative rights of neutrals and beligers that is extant.

In 1809 he succeeded Mr. Jefferson as president of the United States, and was re-elected in 1812, 125 votes out of 176. General Pinkney, of South Carolina, his opponent, obtained 47 votes. In Virginia the State appeared at first nearly divided between him and Mr. Monroe, but a majority of the legislature declaring informally a preference for Mr. Madison, that candidate is a candidate. It is known that after many fruitless efforts to induce Great Britain and France to respect neutral rights, war was declared against Great Britain during his administration, and that it continued in various forms until 1815. Mr. Madison, being aware how unprepared the United States were for war, and anxious to preserve peace as long as it could be preserved consistently with the neutral rights of America, wished to postpone the declaration of war, but was urged into it by circumstances which soon caused it.
Council, in which case the principal cause of war would have been removed.

After serving two terms Mr. Madison retired to private life, in March, 1817; and it may be questioned whether the eight years which he served as president were not too long to spend in the service of his country. When the Constitution of Virginia was submitted to revision, he consented to serve as a member of the convention, and no doubt contributed largely to soothe the irritation which the conflict of local interests created. He also acted as a visitor of the university of Virginia. [Jefferson.] Except in the discharge of these duties, he not only held no office after his retirement, but, we believe, never left his county after he quitted Washington. Although Mr. Madison lived to the age of eighty-five, he had a very delicate constitution, and was never enjoyed good health. He died on the 28th of June, 1836. His physician said that he had two or three diseases, any one of which was commonly sufficient to shorten life.

Monticello, his patrimonial estate, is a large tract of good land in Orange County, from which there is a fine view of the Blue Ridge, about twenty miles distant. The house, a large brick building, with a Tuscan portico, was sufficient for himself and his family. His was much visited in his lifetime by visitors of note. His character and home were attractive to many visitors, and his almost juvenile spirits and delightful conversation, with the very pleasing manners of Mrs. Madison, often tempted his guests to prolong their visits longer than they had intended. His visitors thus became a tax on his purse, which he had not previously foreseen with such確實, and were in fact a tax on his leisure time. For years he had been helping to carry the grain from the farm to the mill, and his hand was to be seen in the working of the water mill. He was called to his death. When his son, the present Mr. Jefferson, succeeded his father, the body was placed on a bier, and he was carried to the church. When he died, he was not more than forty years on the estate.

Madoc, the second son of Owen Gwynneedd, prince of Wales, is said by some authors to have discovered America long before Columbus. The Welsh chronicles are stated, that Madoc, having been compelled by civil disturbances to leave his native country, set sail in 1170 with a small fleet, and directing his course westward, landed after some weeks on a continent which produced abundantly the necessaries of life, and the inhabitants of which differed greatly from those of Europe. After remaining in the country a long time he left 120 persons, and returned to Wales, where he equipped a fleet of ten vessels, and set sail again, but was never afterwards heard of. Some of the voyages were made under the supervision of Bille, on the coast of Virginia or Carolina, and support it by an account of the discovery of an Indian population in North America, which spoke the Welsh language. If however there is any truth in the story, Madoc probably landed in a greater part of the southern part of Virginia. Settlement, and present State of Kentucky; with an Account of the Indian Nations within the United States," London, 1793, 3v.; also Burtch, "Ephémérid. Géogr.," September, 1819. The above narrative of Madoc's voyage is derived, for the most part, from the "Voyages," and is given in the "Histoire de Cambrie," now called Wales, a part of the most famous Ylandt of Bryttain, written in the English language, above 200 years past, by Gascoigne; translated into English by H. Lloyd, gent.; corrected, augmented, and continued out of records and best approved authors, by David Powell," London, 1584, 4to. Owen's "British Remains" (London, 1777, 4vo.; 1785, 2mo.) contains "An Account of the Discovery of America by the Welsh 300 years before the voyage of Columbus," written by Dr. Halford. The author is supposed to have been a countryman Madoc as the discoverer of the New World with more warmth perhaps than good sense. But the Northmen are said to have discovered America some time before the date of Madoc's alleged voyage; and this fact is still not more established by a more conclusive evidence than that of the expedition of the Welsh prince.


LEXO THOMAS. Of the personal history of Madoc little is known. He resided in the Middle Temple. He always writes from the Middle Temple. Thomas Madoc of London was called to the bar by that Society in 1794, and the son of a clergyman of Wales of the same name, in 1793. In 1794 the first Madoc is said to have been a feed for an Englishman of picnicum; or a Collection of antient Charters and Instruments of divers kinds, taken from the originals, from the Norman Conquest to Henry VIII. to which is prefixed a very learned dissertation on antient charters and instru-

ments. In 1791 he wrote an Essay on the History and Antiquities of the Exchequer of the kings of England, in two periods: from the Norman Conquest to the end of the reign of King John; and from the end of the reign of King John to the end of the reign of Edward I. He also wrote a line of short antient dialogue concerning the Exchequer, generally as-
scribed to Gervaisius Tiburiensis; and a dissertation con-
cerning the most antient great roll of the Exchequer, com-
monly styled the Roll of Quinto Regis Stephani. This work was reprinted with a valuable addition of an index, in 1795, begins with a de-
dication to the queen, followed by a long prologue by Lord Somers, in which the author says, 'The records which I here vouch were taken by my own pen from the
authentic membranes, unless where it appeared by my references to be otherwise, and except possibly in two or three instances, which it is not material to recollect; and in giving an account of the ancient state of the Exchequer, I have for the most part preserved the subject matter, with such variations as might be necessary, to make use of such memorials as serve either to make known or to illustrate the ancient laws and usages of this kingdom: for which reason the present work may be deemed not only a history of the Exchequer, but likewise a history of the commercial and civil law of England. This epistle concludes with 'a large digression concerning the Romanick dialect.'

The 'History of the Exchequer' treats of the court of the king of England during the two periods comprised in it, its great officers, the judges, the different kinds of officers, its officers and business; of the exchequer of the Jews, showing the peculiar mode in which they were governed and protected; and the king's 'villains' of the different sources of the royal revenue, fully considered in all its branches, with a minute illustration of the subject matter, in an immense mass of documents. The dialogue concerning the exchequer (which Mr. Madox ascribes to Richard Fitz-Nigel, bishop of London), in the form of questions put to the author and his answers, of the functions of the different officers of the exchequer in the reign of Henry II, and of some other miscellaneous matters, in the first book, and of the mode of collecting the king's revenue in the second. It is preceded by an epistolary dissertation addressed to Lord Halifax. The dissertation is almost a venture into this new and untried field, and the roll of the exchequer, commonly called the roll of Quinto Stephani, is addressed to Lord Somers. It has lately been ascertained by that eminent antiquarian the Rev. Joseph Hunter, that this roll ought to be referred to the 31 Henry I, instead of Henry II, as was supposed; and in obscurity in which this part of the reign of Stephen is involved. Though Madox doubted whether this roll belonged to the reign of Henry I, Stephen, or Henry II, yet in his table of the barons of the exchequer from the Conquest to the present day, he places them all in the list in the time of Stephen and are so placed upon the supposition that it relates to the 5th year of that king, at which time many of these barons were born and long had been the adherents of the rival claimant of the throne, the empress Maud.

In 1726 Mr. Madox published his 'Firma Burgi, or an Historical Essay concerning the cities, towns, and boroughs of England, taken from records.' A posthumous work from the hand of the celebrated writer, it is a history of the land-owners and baronies, and tenure in capita, verified by records, in which he corrects the errors into which Lord Coke and others have fallen in the use of these terms [MANOR], appeared in 1736, and, with merely an addition of 1,600 volumes, with nearly fourteen millions of inhabitants, is under the immediate government of the governor and council of Madras, but subordinate to the authority of the governor-general of India and his council.

The several districts contained within this presidency are—Northern Malabar, Malabar, Cochin, Kollam, Travancore, Tanjore, Tinnevelly, Trichinopoly, and Vizagapatam.

The greatest number of Europeans in the three years from 1833-34 to 1836-37 was as follows—

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1833-34</td>
<td>3,328,208</td>
</tr>
<tr>
<td>1834-35</td>
<td>4,490,925</td>
</tr>
<tr>
<td>1835-36</td>
<td>4,599,561</td>
</tr>
</tbody>
</table>

P. C. No. 864.

The value of the imports and exports from and to all parts of the world in the year 1835 was—

<table>
<thead>
<tr>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imports</td>
<td>£3,000,404</td>
</tr>
<tr>
<td>Exports</td>
<td>955,697</td>
</tr>
</tbody>
</table>

The greater part of this trade was maintained with the other British presidencies and Ceylon. The trade with Great Britain was valued at—

<table>
<thead>
<tr>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imports</td>
<td>£2,542,031</td>
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MADRAS, or FORT ST. GEORGE, the capital of the southern part of British India, is situated on the Coromandel coast, in the Bay of Bengal, in 13° 30' N. lat. and 80° 21' E. long. Madras was an open roadstead, and peculiarly ill adapted for a place of trade on account of the rapid current, which runs along the coast, and the dangerous surf which beats against the shore. This surf is so violent that a peculiar kind of boat is necessarily employed for communicating the goods ships and pinnaces of the coast. They are very light; they are made by seveng planks together with string between the seams, so that they yield to the shock without breaking when thrown upon the shore. They require to be managed with great dexterity by persons well experienced. The boats that belong to the ships, and are actually in bond, in the ordinary manner, are not allowed to approach nearer to the shore than the back of the surf, where they anchor and transport their passengers or lading of goods to the Madras boats already described. In rough weather even these boats are frequently wrecked, and the goods in them stop, excepted by means of a contrivance called a catamaran, used by fisher-men. These catamarans are made with two or three logs of light wood, each about ten feet long, lashed together. They are each managed by two men using paddles. It is very common for these boats to be landed from their vessel, which they regain by swimming. This is a service of much danger, not only for the reason just stated, but because of the sharks in the Bay of Bengal, by which the men are frequently attacked.

Fort St. George was built a few yards of the site. It was begun in 1639 by Mr. Francis Day, who obtained permission for the purpose from Sree Rung Rayel. This fortress was soon surrounded by a town, which has since become very populous; the inhabitants in 1832 were ascertained to amount to 462,000. It was again attacked by the French under M. Lally in 1758, but after investing the fort for nine weeks they were obliged to raise the siege and retire with considerable loss. Madras has since been threatened with attacks by Hyder Ali in 1787 and Tippoo, in 1798, but they are no longer so formidable.

Madras is 1030 miles from Calcutta, 756 from Bombay, 1158 from Agra, 1103 from Benares, 1275 from Delhi, 352 from Hyderabad, and 1661 from Lahore, all travelling distances.

MADRASTRAM. This name is given by De Blainville to a subsection of the Madrephoridae, including Astra, Euchinastrea, Oculina, and Branchiastrea. He attaches but little importance to it as a division. [MADREPHYLLIG.]

MADREPHYLLIG, the first section of the Stony corals. An appendix to this is the family of Zoantharia MADREPHORAE. The Linnean genus Madrepora included nearly all the species, and obviously required analysis, the more so that geological naturalists referred to the same genus a vast number of unknown forms of the rapid current and impeded fossil zoology, and prevented any right notion of the successive forms of spongothont life of the genus.

Solander proposed some useful divisions of this unmaeageable genus, derived from the genus of the coral;
Lamarck established many important genera, especially characterising some fossil genera; Lamouroux also laboured to improve the classification. Of late years Goldfuss has described additional fossil groups; and M. de Blainville has reorganised the labours of his predecessors, with a special regard to the soft animal parts figured and described by Lamarck, Quoi, Gaimard, and other voyagers.

The Madrephoriana of this writer seclude require that highly ramoso figure which belongs to the Laminarian genera Madrepora, Poecilopus, &c.; they are furnished with cells of various figure, always however radiated by lamellae, which are frequently numerous. There is no general distinctive character of the soft parts, or 'polypi,' as they have usually been termed.

Gasteropods.

Ostreae (fossil).

Animal unknown; solidified by a calcareous polyparium, of a short, simple, obicular, or elliptical figure, flattened, and marked with concentric lines below, convex above, with a great number of very fine entire lamellae, convergent to a subulacine centre.

Lamarck founded the genus; Goldfuss includes it with the Fungia. Only fossil species are known; they occur in the tertiary and upper secondary strata chiefly; Mr. Lonsdale notices it in the Silurian system.

Example. Cyclolites numerosalis (Madrepora porpita, Linn.). Goldfuss, tab. 14, fig. 4, a, b.

Montlivaltia (fossil).

Animal unknown; solidified by a calcareous polyparium of subconical or pyriform figure fixed; transversely wrinkled below; enlarged, excavated, and lamellato-radiate above. From the cole of Callo. Goldfuss refers it to Anthophyllum of Schweigger; and Blainville says it is closely allied to Cyclolites.

Example. Montlivaltia caryophyllata. Lamx., ' Zooph.' t. 79, figs. 8-10.

Fungi.

Animal gelatinous or membranous, generally simple, depressed, orbicular or oval; mouth superior, transverse in a large disk, which is covered by many thick cirriiform tentacula: the disk is solidified internally by a calcareous solid polyparium, of a simple figure (seldom complex), ornamented above by a star of radiating ascleted lamellae, and below by simple rugose rays.

There are about nine recent (mostly from Indian Seas), and as many fossil species. Blainville arranges them in three groups: simple and circular; simple and compressed; complex and oblong.

The animal, according to Quoi and Gaimard, is very like that of Caryophyllia: it covers the upper face, and returns over the lower, so that the whole polyparium is internal. M. Stutchbury has described the growth of this coral in the 'Linnean Transactions.'

Example. Fungia patellaria. Ellis and Soland, t. 11, figs. 1-4.

Polyphylla.

Animals numerous, confluent, with a rather prominent mouth, lobed at the margin; numerous tentacula, not round the mouth, but scattered on the surface of a polypary part, which entirely envelopes and encloses a calcareous solid polyparium. Polyparium a free, oval, elongated plate; above rather convex, and covered with lamellae, which are denticulated, prominent, very slender, and transverse, but without stelliform disposition; below rather concave, and roughened by close-set tubercles.

The whole mass is free on the sea-bed.

Example. Fungia talpa of Lamarck. 'Actinologia,' pl. 92, fig. 1.

Anthophylla.

Animal unknown, containing a calcareous polyparium of a conical or pyriform figure, fixed in the lower part, enlarged, flattened, excavated, and multilaminellous in the upper part. This genus includes fossil species from ancient rocks, and appears imperfectly distinguished from Turbinolia, unless the species of that genus were all free, which is at least doubtful.

Example. Anthophyllum Guettardi, Duf. Note. Ehrenberg unites in one genus, Monomyces, the Anthophylla Montlivaltia, and the two first groups of Fungia.

Turbinolia.

Animal simple, conical, ribbed externally with larger and smaller ribs; terminated above by a mouth beset with numerous tentacula, and solidified by a calcareous polyparium.

Polyparium free, conical, furrowed externally, attenuated to one extremity, enlarged at the other, and ending in a large shallow radiated cell. Most of the species are fossil; they occur in rocks of all ages, particular species belonging to each; but if the genus is not very obscurely characterized, the use of the term is not very accurate. According to Blainville, the recent T. amicorum has twenty-four ribs; but this number is exceeded vastly in some of the fossil species referred to the genus, and in others there are fewer than twenty-four.

Diploecentrum of Goldfuss is a compressed turbionula, according to Blainville.

Example. Turbinolia amicorum, Bl. South Seas.

Turbinolopha (fossil).

Animal unknown, solidified by a calcareous polyparium of a simple turbinated figure, and free. This polyparium is laconous, furnished above with radiating lamellae, named at short equal intervals, and marked externally by longitudinal flexuous striae, inclining between their united edges vertical lines of pores or cells.

M. Lamouroux describes this genus. It has been recently adopted by Mr. Lonsdale for specimens which occur plentifully in strata below old red sandstones. ('Silurian System,' by Murchison.) De Blainville appears to think it should be reunited with Turbinolia, but he had not examined the specimens noticed by Lamouroux.

Example. Turbinolia ochracea, Lamouroux. 'Gen. des Poly.' t. 82.

Caryophylla.

Animals actiniform, subcylinrical, provided with a simple or double crown of short, thick, perforated tentacula, which project from the surface of stars or cylindroconical cells furnished with radiating lamellae internally complicated, externally striated, and aggregated into a solid conical polyparium, fixed at the base. The species are grouped according to the simple or faciculated character of the mass. There are both recent and fossil examples of each group.

Lamarck is the author of this genus, distinguishing it from Turbinolia and from Oculina: he has been followed by nearly all zoologists; but Goldfuss has reunited Caryophylla and Oculina into his genus Lithodendron.
Caryophyllia cyathus.

Example. Caryophyllia cyathus. Ellis and Sol., t. 28, f. 7.

Ehrenberg divides this genus, and forms the following new ones:

Desmophyllum. Example, C. dianthus.
Cyathina. " C. cyathus.
Cladoeca. " C. calicularis.

Sarcinula.

Animals unknown, contained in cells at the end of long cylindrical tubes; cells lamelliferous, stelliform; tubes striated externally, parallel to the axis, united, by a cellular transverse mass, to a solid calcareous polyparium, whose upper and under surfaces are plane and parallel.

This genus, established by Lamarck, includes both recent and fossil species. It seems to bear the same relation to Caryophyllia that certain tubular astras bear to the ordinary forms of that genus. There is no sufficient reason for the conjecture of De Blainville, that 'Lithostroton' of Llwyd should be referred to this genus; it has more resemblance to the following group, with which indeed De Blainville has joined it.

Columnaria (fossil).

Animals unknown, contained in shallow, multi-radiate, stelliform cells, at the ends of prismatic tubes; tubes aggregated, contiguous, more or less parallel, forming by their union a solid, thick, calcareous polyparium.

This is a genus of Goldfuss; established on fossils of the 'Transition' strata.

Stylistina (fossil).

Animals entirely unknown, contained in radiated cells at the end of long cylindrical vertical tubes; tubes furnished internally with distinct lamellae, which radiate from a solid more or less prominent axis, and are united by a cellular mass so as to form a stony polyparium, more or less extended, thick, and echinated above.

A genus of Lamarck (originally named Fascicularia by him), which includes perhaps only one species. The prominent axis occurs, however, in several madreporeop fossilis not usually referred to this genus—as certain Cyathophylla of Goldfuss. Sarcinula conoides of this author is ranked by Blainville as a Stylistina.

Catenipora (fossil).

Animals unknown, contained in tubular cells; cells terminal, often oval, furnished with radiating plates, and united laterally into a calcareous polyparium, which may be described as of a conical figure, fixed, composed of vertical Anastomosed lamella.

Tubipora catenulata of old writers is the type of this Lamarckian genus, which, with some surprise, we found to be, as Blainville states, really a lamelliferous coral. He draws this inference from examining a fine specimen, at Bonn, of Catenipora escharoides, which he considers the only species. It is peculiar to the 'Transition' rocks, though not, perhaps, to the 'Silurian System.'


Fischer's genus Halyacent is identical with Catenipora.

Syringopora (fossil).

Animals unknown, contained in long, subflexuous, tubular, vertical cells; opening of the cells round, terminal; numerous small horizontal tubuli branch off from the cells, and unite, by anastomosis, the whole ramified mass into one polyparium.

Goldfuss is the author of this genus; the species of which were, by older writers, always ranked as Tubipora. In our own examinations of Syringopora from the carboniferous limestone (S. ramulosa? Goldfuss), we have had reason to think the interior of the tubes had formerly been radiated, but the traces of the lamellae are never clear, or even certain. The species belong to Silurian and carboniferous rocks chiefly, perhaps not exclusively.


Dendrophyllia.

Animals actiniform, furnished with a great number of bifid tentacula, in the midst of which is a polygonal mouth: the cells containing the animals are rather deep, and radiated by numerous prominent lamella; the polyparium which these compose is widely attached, arborescent, striated externally, lacunose internally, and truncate at the extremities. The species are both recent and fossil.

Example. Dendrophyllia ramea. Sol. and Ellis, t. 38.

Lobophyllia.

Animals actiniform, furnished with many cylindrical tentacula; cells conical (sometimes elongated or sinuous),
with a subcircular opening, lacinato-lamelliferous, terminating the few branches of the *polyparium*, which is fixed, of a turbinate shape, externally striated, and internally lacunose.

The species were included in Lamarck's genus Caryophyllia; the fossil species are chiefly from the oolitic formations.

Example. Lobophyllia carduus. (Caryophyllia carduus, Lamarck.)

**Meandrina.**

*Animals* more or less confluent, in one surface, in long sinusuous series, having each a distinct mouth and lateral series of very short tentacles, contained in shallow *cells*, which are not really separate, but form by their lateral union sinusous valleys; these valleys are furnished on each side of the mesial line with transverse subparallel lamellae, ending against ridges which separate the valleys; the whole calcareous *polyparium* is fixed, simple, turbirniform when young, and globular when old.

This genus, established by Lamarck, is universally adopted by zoophytologists. The recent species belong to the Indian or South Atlantic Seas. The fossil species are few, and chiefly belong to the oolitic formation.

**Example.** Meandrina dendralis. Ellis and Sol. t. 46, f. 1.

**Dictyophyllia** (fossil).

*Animals* unknown, contained in polygonal, rather irregular *cells* of a considerable size; *cells* separated by partitions denticulated on both sides; the calcareous *polyparium* which results is fixed, deeply reticulated on the surface, and encrusts other bodies. (The base of the cells is finely tuberculated.)

The best marked species (*D. reticulata*) is found in the chalk of Maastricht. Goldfuss, t. 21, fig. 3.

**Agaricia.**

*Animals* wholly unknown, contained in *cells*, which often appear incomplete or confused, and subellamellar internally; they constitute by their union a stony *polyparium*, fixed, formed of flattened foliaceous irregular expansions, stelliform on one side only.

The recent species are not numerous; we receive them from the Indian Ocean and South Sea. Goldfuss refers some fossils to this genus.

**Example.** Agaricia cucullata. Ellis and Sol. t. 42 f. 1, 2.

**Tridacophyllia.**

*Animals* actinoform, confluent, very depressed, enlarged, and attached to a finely crenulated edge; mouth central, a little tuberculate, but without tentacle; *cells* deep, irregular, foliaceous in the borders, lamellato-radiate, and denticulate within, externally and irregularly striated; the *polypiferous* mass thus formed is calcareous, foliaceous, not porous, striated, turbirnated and fixed at the narrow part.

Lamarck included the principal species (*T. latissima*) in his genus *Pavonia*; another he named *Explanata aspera*.

**Example.** Tridacophyllia lactea. Ellis and Sol. t. 44.

**Monticulabrum.**

*Animals* unknown, contained in cells imperfectly circumscribed, sometimes even confused or confluent; the lamellae of these cells are very prominent, very distinct, rather numerous, and diverge from a tubercle; the union of the cells is marginal and in one surface; the *polyparium* is calcareous, very lacunose and polyiform; sometimes it encrusts other bodies, is agglomerated into a heap, or spreads in sinusuous expansions, striated externally.

This genus of Lamarck is supposed to be identical with *Hydnoporta* of Fischer. The recent species are from the Indian Seas. Mr. Lonsdale refers a fossil species of the Silurian system to this genus.

**Example.** Monticulabrum exspectus. Sol. and Ellis. t. 43 f. 3.

**Pavonia.**

*Animals* without tentacle; the cells which contained them confluent, conical, small, rather oblique, furnished with many very close lamellae disposed irregularly, though sometimes in series; the *polyparium* thus composed is solid, fixed, running into various agglomerations and expansions, with sharp edges.

The recent species are from the East and West Indian Seas. The few fossil species are from transition and oolitic formations.

**Example.** Pavonia boletiformis. Ellis and Sol. t. 22, f. 3, 4.

The following genera, viz.: *Astraea*, *Echinastera*, *Orbina*, and *Branchiastera*, are grouped by De Blainville under the subsecional title of *MADRASIA*:

**Astraea.**

*Animals* short, more or less cylindrical; mouth rounded, placed in the midst of a disk covered with few and rather short tentacles; *cells* shallow, lamellae radiating, and forming by their union a fixed polyorphic *polyparium*, which often encrusts other bodies, or is agglomerated on itself. This great genus is divided into sections.

Section A. *Astraeides* of Quoi and Gaimard.—*Stars* round and often disjoined.

**Example.** Astraea calycularis (Caryophyllia calycularis of Lamarck). Mediterranean.

Section B. *Meandrinus* *Astraea*.—*Stars* distinct, unequal, oblong, more or less diffus, forming encrusting or agglomerated masses.

**Example.** Astraea uva.

Section C. *Gemmalaria*.—*Stars* circular, very distinct, prominent, and forming encrusting masses. (These are chiefly fossil.)

**Example.** Astraea Lucisiana, Defr., from the oolite of Besançon.

Section D. *Tubastera*.—*Cells* tubular, vertical, more or less distant, with a round opening, the edges being hardly prominent, and radiated by a moderate number (12 to 84) of complete lamellae. This section includes many recent and fossil species.

**Example.** Astraea farolata. Ellis and Sol. t. 57.

(The animal is described by Quoi and Gaimard.)

**Section E.**—*Cells* roundish, *approximata*, sometimes irregular, rather shallow; the lamellae very distinct, cutting, complete, extended over the rounded intersections; mass encrusting or agglomerated.
Astraea ananas.

Example. Astraea ananas. Ellis and Sol., t. 47.

Section F. Siderastræ.—Cells superficial or shallow, indefinite, with numerous very fine lamellae, radiating from an excavated centre, and continued to meet or even to join those of neighbouring cells.

Example. Astraea sidera. Ellis and Sol., t. 49.

There are fossil species numerous, especially in the later secondary and tertiary rocks.

Blainville makes several groups of them according to the manner of their growth.

Section G. Dipastræa.—Of a globular figure; cells protuberant, infundibuliform, flat or subpolygonal, contiguous, with common partitions, which are elevated, sulcated, and echinulated on the edges.

Example. Astraea dipræens, Lamarck; Madrepora favosa, Ellis and Sol., t. 56.

There are fossil species in the secondary and tertiary strata.

Section H. Montastræa.—In thick masses composed of tubular cells, which acquire a polygonal figure from junction; their edges not prominent; the cavity not deep, furnished with numerous lamellæ united to a solid prominent axis. The known species are fossil.

Section I. Fanastræa.—In a thick mass composed of large polygonal excavated cells, pluriradiate, depressed in the centre, and hollowed towards the margin. (Aconularia of Schweigger; Cyathophyllum of Goldfuss.) Goldfuss’s generic name is much employed for fossils of the Silurian rocks.

Example. Recent, Astræa magnifica. Indian Sea. Fossil, Astræa Baltic, Bl. (A. anana, Lam.) (Mr. Lonsdale has proposed a new genus, allied to Cyclostoma; and from its vesicular internal structure calls it Cyathophyllum. From Silurian rocks.)

Section K. Strombasteræa.—In corticiform masses composed of infundibuliform, flat or subpolygonal, radiato-lamelliferous cells, which are prolific, or succeed one another vertically. Goldfuss calls the group Strombodes. Its distinction is doubted by Blainville.


Section L. Cellastræa.—The species of this group differ from the Dipastræa principally by the fineness of their radiating lamellæ, and by a peculiar cellular structure. The fossil species are found in tertiary strata.


In concluding his examination of the great genus Astræa (which includes several other genera adopted by Goldfuss, Schweigger, &c.), De Blainville acknowledges the probable perfection of the arrangement given, and notices the transitions which it presents to the generic groups of Caryophylla, Pavia, Oculina, &c. Perhaps until the relation of the lamelliferous cells to their contained polyp is known from a very general investigation of recent types, theologists do wisely not to propose new genera from ill-understood specimens of ancient corals.

Echinasteræa.

Animals unknown, contained in raised cells which are strongly radiated, rather irregular, echinulated, and occupy only the upper surface of the coral. The mass is either free or expanded into a lobate or reflexed plate, internally echinulated, striated, but not porous externally. (Part of Explanaria, Lam., is included in this new group, as well as Echinophora of that author.)

Example. E. ringens, Lam.

Oculina.

Animals unknown, contained in regular, round, radiated cells, more or less prominent, and scattered on the surface of a solid, compact, arborescent, fixed polyparium.

Eulina axillaria.

Example. Oculina axillaria. Ellis and Sol., t. 13, f. 5.

Branchasteræa.

Animals unknown; the cells which contained them are of a cylindrical figure, channelled internally, prominent, radiating from the general mass, and united into a ramose, cylindrical, solid coral. Only one species. B. limbata, Goldfuss, t. 8, f. 7; from the Jurassic limestone, Sussa.

MADRÉPORA, the second section of the Stony Zoantharia, according to De Blainville, and placed by him after MADREPHYLLIS.

The Corals of this section are generally arborescent, with small partially lamelliferous cells, and constantly porous in the interstices and walls of the cells. This last is the most important character. The Lemarkian genus Madrepora included many of the genera of De Blainville.

Genera.

Dentipora.

Animals unknown; cells deep, circular, mammillated, furnished with ten dentiform lamellæ prominent towards the margins, scattered in the polyparium, which is compact, expanded, its parts anastomosing together, and echinulated with strong interstitial tubercles.

The species are ranked with Oculina by Ehrenberg and earlier authors.
Example. Dentipora virginea. Ellis and Sol., t. 35.  

**Astroropora.**  
Animals unknown (probably provided with a single crown of 12 tentacula): the cells which contained them are prominent, mammillary, internally sulcated, and irregularly scattered on the surface of the polyparium. Polyparium extremely porous and echiniulated, enlarged into thin expansions.  

*Example.* Astraea myriophthalma of Lamarck.  

**Sideropora.**  
Animals unknown; *cells* deep, immersed, circular or subhexagonal, with six deep notches at the border, and a prominent central axis, irregularly dispersed on the arborescent, palmated, finely granulated, but not porous polyparium.  
(Several of Lamarck's Porites are placed in this group.)  
*Example.* Sideropora digitata. In the Leyden Museum.  

**Stylopora.**  
Animals unknown; *cells* with few lobes at the circumference, internally striated, with a platiliform axis, irregularly aggregated into an arborescent or subpalmated fixed polyparium, whose interstices are porous and echiniulated.  
(This group of Schweigger is not considered as really generic.)  

**Coscinopora.**  
Animals unknown; *cells* infundibuliform, quincuncial, forming the openings of capillary tubes laterally adherent into an attached, polymorphous polyparium.  
(This group, established by Goldfuss, is ranked by that author near to Retepora. There is apparently no evidence that it should be placed among the Madreporae.)  
*Example.* Coscinopora infundibuliformis. Goldf., pl. 9, and pl. 30, f. 10.  

**Gemmiopora.**  
Animals without tentacula: *cells* deep, cylindrical, channelled, and almost lamelliferous within, *prominent in a mammillary form* on the surface of a fixed, porous, arborescent, or laminiform polyparium.  
(Several of Lamarck's Explanations come into this group.)  

*Example.* G. mesenterina. Ellis and Sol., t. 43.  

**Montipora.**  
Animals actiniform, short, provided with small tentacula, to the number of twelve, placed in a single series; *cells* very small, rounded, impressed, regular, with few internal grooves. Polyparium incrusting or agglomrated, very porous, much echiniulated, and marked by mammillary prominences on the free surface.  
(Some of Lamarck's Porites are included in this genus.)  
*Example.* Porites verrucosa, Lamck. Australasia.  

**Madrepora.**  
Animals actiniform, rather short, with twelve simple tentacula; *cells* deep, prominent, scarcely stelliferous, irregularly scattered on the surface, and accumulated towards the terminations of the polyparium, which is very porous, arborescent or frondescent, and fixed.  
(This restricted genus includes several recent species, and a few fossils.)  

*Example.* Madrepora abrotanoides, diminished.  


**Palmipora.**  
Animals unknown; *cells* very small, unequal, completely immersed, obconically radiated, scattered: polyparium fixed, cellular within, very finely porous and reticulated externally, expanded in a palmate or digitated form.  
(The genus includes Millepora alcicornis of Linn. and others like it.)  

*Example.* Millepora alcicornis, Linn.  

**Heliopora.**  
Animals short and cylindrical, with a crown of 15 or more broad and short tentacula; *cells* cylindrical, vertical or sub-divergent, immersed, internally crenulated by partial lamellae; polyparium largely porous in the interval of the cells.
Heliopora cactulosa.


A fossil species in the transition limestone (astraea porosa. Gold), usually ranked in this genus, is put in Porites by Ehrenberg and Lonsdale. (Murchison's 'Silurian Region.')

Aleopora.

Animals actiniform, with twelve simple tentacula; cells deep, polygonal, irregular, unequal, internally tuberculated, with perforated or reticulated parietes, echinulated on the terminal edges; polyparium porous, cellular.

Example. Aleopora reticulata. Madrepora reticulata. Linn. Ellis and Sol., t. 84, f. 3-5.

Comopora.

Animals actiniform, elongated, cylindrical, with a crown of more than twelve simple tentacula; cells polygonal, internally tuberculated, echinulated on the edges; polyparium extremely porous.

One recent species (G. pedunculata of Quat and Gaimard).

Porites.

Animals urceolate, with two very short tentacula; cells polygonal, unequal, imperfectly defined, incompletely radiated by filamentous pointed rays, with echinulated intervals; polyparium diversiform, porous and echinated.


Serratopora.

Animals without tentacula?; cells immersed, ciliated on the edges, but not internally lamelliferous, ranged in longitudinal series on the cylindrical branches of a porous finely ramified polyparium.

A genus of Lamark, modified. It includes only a few species, much like the type, Madrepora serrata. Lamck. figured in Ellis and Sol., t. 31, f. 1-2.) Ehrenberg ranks them with Millepora.

Porcellana.

Animals without tentacula?; cells small, shallow, subpolygonal, echinulated on the edges, and sometimes rather lamelliferous within; towards the terminations of the branching polyparium the cells are contiguous and adherent, but separated by granular interstices near the base of attachment. The polyparium is not porous.

(Lamark established the genus, which is generally adopted. Ehrenberg doubts if there be any tentacula.)


MADORERITE.—Anthropocyst; Columnar Carbonate of Lime.—Occurs in roundish masses, the structure of which is columnar and diverging. Hardness 3°3; yields easily to the knife. Colour greyish-black. Lustre vitreous.Opaque, or only translucent on the edges. Specific gravity 2°7. It is found in Norway at Siversen, in transition rocks; at Gympykta in alun slate; in Greenland, and in Salisbury.

Analysis by Klaproth:

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MADRID, the capital of New Castle and of Spain, and now also of the province of Madrid, stands on a range of small hills rising in the middle of the extensive plain of New Castle, which is bounded on the north by the mountains of Guadarramas, and on the south by those of Toledo, in 40° 24' 18' N. lat. and 3° 42' W. long. of Greenwich. Madrid is supposed to occupy the site of the Mantia Carpathetorum of the Romans, which was called Majoritum by the Goths, whereas its present name Madrid is derived. Some antiquarians contend that it was so called by the Spanish Arabs, in whose language the word Mayorit means a 'well-aired house.'

During the occupation of the peninsula by the Arabs the place served as a frontier town, and its castle was often taken from the Arabs and retaken by them until 1086, when it was finally taken by Alphonso VI., the conqueror of Toledo, who annexed it to the bishopric of Toledo, to which it now belongs. It continued to be a mere village until the reign of Henry III. of Castile, who, being passionately fond of hunting the wild boar and the bear, both which animals were then abundant in the mountains near Madrid, made the place his residence during the hunting season. Charles V. occasionally lived in it, and it was last made the capital of the Spanish dominions by his son Philip II., in opposition to the opinion of his ministers, who strongly advised him to fix his court at Lisbon.

Madrid is more than 2000 English feet above the level of the sea, a circumstance which accounts for the coldness of its winters. In summer the heat is excessive, in some measure owing to the want of trees in the neighbourhood. The thermometer in 1837 rose to 117° of Fahrenheit in the open air. In winter the same thermometer sometimes descends as low as 18°.

Madrid is on the left bank of the Manzanares, a small rivulet which has its rise in the mountains of Guadarramas, about 36 miles from the capital, and which, after flowing under the walls of Madrid, joins the Xarama, a considerable stream, at some distance from the capital. Two majestic bridges, called Puente de Toledo and Puente de Segovia, are thrown over the Manzanares; but such is the contrast between the imposing grandeur of these bridges and the scanty stream which flows beneath them, that it has given rise to the witty saying 'that the kings of Spain ought to sell the bridges, and
purchase water with the money. In winter however the heavy rains, and in spring the sudden melting of the snow on the neighbouring mountains, sometimes swell the Manzanares into a torrent.

Madrid is surrounded by a brick wall twenty feet high, which contains fifteen gates, mostly built of coarse granite. Among these the gate of Alcalá, and that of San Vicente, built in the reign of Charles III, and that of Toledo, designed by Juan de Villanueva, are characterized by purity of design and solidity of structure. During the present civil war, some slight fortifications have been erected on the principal points leading to the city.

The general aspect of Madrid from all the approaches is the same. The most distinctive spires of churches and convents, the tiled roofs of the houses, the sterility of the neighbourhood, and the total absence of good houses, pleasure-gardens, or other buildings which indicate the approach to a great city, give to the capital of Spain the most pristine and forbidding aspect.

The interior however is not devoid of beauty. The wide and well-paved streets, the extensive and well-planted public promenades in and near the city, with the fountains in many of the squares, the gorgeous churches, and handsome public buildings, remind the traveller that he is in the capital of Philip II. The houses are well constructed: the foundations and some of the ornamental parts are of granite, and the rest of red brick, stuccoed and generally painted. Many of the streets, particularly the new ones, are decorated with fountains, and contains, as in Paris, several fountains. The principal streets, with few exceptions, are moderately wide and handsome; that of Alcalá, for instance, is wider than Portland-place in London, and contains many splendid buildings. The Puerta del Sol, the Puerta del Atocha,é., would be ornaments to any capital; the rest of the streets are generally narrow and crooked. There are 42 squares, of which the principal are—that of the Royal Palace; that of Santa Catalina, where a beautiful bronze statue of Cortez has been placed; the Puerta de Atocha, where Philip V. began the building, which was continued by his successors. It has four fronts, 470 feet in length, and 100 feet high. The custom is to build a building, the architect of whom Madrid is chiefly indebted for its embellishments; the Casa de Correos (Post-office) in the Puerta del Sol; the palace called de Buena Vista, formerly belonging to the dukes of Alba, now converted into an artillery museum; the royal prison of San Carlos. The palace of the Counts of Florencia, the duke of Berwick, are among the public and private buildings which adorn the capital. Among the numerous churches and convents which fill the streets of Madrid, scarcely one can be mentioned as a specimen of a pure style of architecture. That of San Ildo, formerly belonging to the Jesuits, has a very fine portal; the convent of the Serafins, founded by Ferdinand VI. and his wife Barbara, is likewise a fine building, and the interior of the church is ornamented with the richest marbles. The convent of San Francisco el Grande, which has been built on the site of the palace of the counts of Guevara, is of the severest and most correct style of the design, its beautiful proportions, and a dome built in imitation of that of Saint Peter's at Rome.

There are 67 churches in Madrid, exclusive of private chapels. Before the year 1834 there were 66 convents, 34 for men and 32 for women. Some of them have been recently pulled down, either for erected squares; others have been converted into barracks, hospitals, magazines, and government offices.

Public promenades abound in Madrid. That which is most resorted to is the Prado which consists of various streets, fine squares, and a large number of trees of various kinds, and beautiful marble fountains. Adjoining to it is the Retiro, an extensive and beautiful garden. The garden suffered greatly, both from friends and foes, during the Peninsular war, but has been restored by the Government. Another favourite promenade is a vast plantation outside the gate of Atocha, called las Delicias, leading to a canal known by the name of Canal de Manzanares. This canal, which extends only a few miles from Madrid, was intended to unite the capital with the river Tajo at Toledo, by means of the Armada.

The literary and scientific establishments are generally of old date and insufficient to meet the wants of the present time. Madrid owns two academies: 1, La Academia de la Lengua, founded in 1724, in imitation of the Académie Française, confines its labours to the publication of works in the Spanish language, such as grammars and dictionaries, and editions of the best Spanish authors. 2, The Academy of History originated in a society of individuals whose first object was the preservation of historical records. It was founded by Philip V., who, in 1738, granted the present house. It possesses aedes of 200, the most valuable of which has been destroyed by the Government. The useful than those of its sister institution: and the most valuable documents have been published by them form a valuable addition to the history of Spain. 3, the Academy of the Fine Arts, instituted in 1738, holds weekly meetings in the year. Madrid contains but two public gardens, and one of these is not yet kept.

Along the east side of the Prado is the National Gallery, a noble building of colossal dimensions, with a beautiful Tuscan portico and Doric colonnades. The collection of paintings which it contains has been lately pronounced by competent judges to possess a greater number of good pictures with fewer bad ones than any other gallery in Europe. The Armoury, a fine building of the time of Philip II., contains several magnificent paintings by Charles V, the academy of music, and, especially the Cinque Centi, or the fine times of Benvenuto Cellini. There are several complete suits of armour, which formerly belonged to Ferdinand V. Charles V., the Great Captain, John of Austria, Garcia de Paredes, and other Spanish kings and nobles. In addition to this, the museum of natural history, which contains a splendid collection of minerals from the Spanish dominions in America, but they are badly arranged and are kept. The most interesting skeleton of the Megathrium described by Cuvier.

There are two small theatres, La Crusc and Principe, both managed by the Ayuntamiento, or municipal corpora- tion, where Italian operas and Spanish plays are alternately acted. Another, of much larger dimensions, called the Theatre of the Comedias, is situated on the east side of the square, opposite to the royal palace, but is still unfinished for want of funds.
MAD 

The inhabitants of Madrid repair, every Monday during the season, to a vast amphitheatre outside of the gate of Aíal, where the favourite spectacle of bull-fights is exhibited.

The police of Madrid is not good. The streets are generally dirty, and the approaches to the city sometimes blocked up by heaps of rubbish. The city has no common sewers. Notwithstanding the great number of fountains, the city itself is considered to be extremely unhealthy; and if Philip II. chose it for his residence on account of the purity of the air and the quality of its waters, as we are told, Madrid must have undergone a great change since the time. The sharp winds which blow from the Guadarrama mountains in winter produce the endemic pulmonia or pneumonia, which often proves fatal in a few hours. A sort of colic, caused by the dryness of the atmosphere, is likewise prevalent in summer.

Charitable and benevolent institutions are numerous, and some are amply provided with funds; but the management having always been in the hands of the clergy, the funds have been spent in building monasteries and churches, rather than applied to the charitable purposes intended by the donors. An institution, supported by voluntary contributions and patronised, has recently been established outside of the city, for the reception of lepers, who were formerly objects of horror and disgust in the streets.

On the 23rd of March, 1808, Madrid was entered by the French troops under Murat, and the royal family was decapitated into France. The heroic rising of the inhabitants of Madrid on the 2nd of May of the same year obliged the French to evacuate the city. After that, the central Spanish nation, Madrid was again occupied by Napoleon in person in December following, and by his brother Joseph in 1809.

Madrid has little manufacturing industry. A manufacturer of porcelain and another of tapestry are both the property of the crown. (Labeur’s View of Spain, vol. iii.; Viage Artístico de España, vol. vii.; Miniño, Diccionario Geográfico de España y Portugal, vol. v.; Quintana, Gran deza de Madrid; Costas, Sketches in Spain; and chiefly, Mesonero, Manual de Madrid.)

MADRIGAL, in music, an unaccompanied vocal composition, sometimes in three parts, but commonly in more; and as the true madrigal is written in what is termed the free style, without the least regard to the accents of the syllables, it is, almost necessarily, as much the produce of study as of genius. Morley—himself a renowned writer of madrigals—says that in this sort of composition "no point can lie upon a note once drawn through, but in the madrigal, as in painting, the close, then taking another. That kind of handling points is most esteemed when two parts go one way, and the other, and much more commonly in tenors, or third parts of the madrigal, especially when there is less, and the madrigal esteemed: and withal you must bring in fine gradations (sincaponges) and strange closings, according as your ditty shall move you. Also in compositions of six parts (or five) you must have an especial care of causing your parts to give place one to another, which you cannot do without restoring; nor can you cause them to rest till they have expressed that part of the ditty which they have began." (Treatise, 1597.)

The madrigal is to be traced to a very early period in the history of music; the Flemings are indebted for its birth, about the middle of the sixteenth century, and the Italians took it up shortly after, with what success the names of Palestrina, Marenzio, Corelli, Frei, &c., will bear witness. Nor were the English deficient in a taste for this kind of composition, the first English madrigals were published in 1594, Weelkes’s in 1597, Wilbye’s in 1598, Bennett’s in 1599, and only a few years after, John Ward’s and Orlando Gibbons’s appeared. Dowland’s were published in 1612, and time of all the madrigals was published in 1594, Weelkes’s in 1597, Wilbye’s in 1598, Bennett’s in 1599, and only a few years after, John Ward’s and Orlando Gibbons’s appeared. Dowland’s were published in 1612, and granted to the composer. But in 1607, and the later in 1607, have the title of madrigal alluded to them, but they are more properly part-songs, of which would now be called glees. And here it may not be improper to say, that we are among the many who are far from regarding a degree of compositional excellence to which we shall add, that for the preservation of this high order of composition, the art has long been, and still continues to be, indebted to the Madrigal Society, a club, consisting chiefly of amateurs, founded in London in 1741, and which, by zeal and perseverance, has succeeded in diffusing throughout the British Isles a taste for a species of music as delightful as it is scientific, and exactly suited to the choral societies already existing, or springing up, in all our great manufacturing and commercial towns.

Every attempt to fix, with any precision, the derivation of this word, has been baffled. Menage thinks that Madura, the Cevennes, is its true name, and that it is derived from the Latin word Madra, a name given to the inhabitants of a district of Provence, who, according to a learned French writer, are of two species of poetic composition called the Madrigale. Dr. Burney agrees with Doni, who derives it from Alia Madra, the first words of certain short hymns addressed to the Virgin. And Sir John Hawkins remarks, that there is a town in Spain named Madrigal. But all these conjectures—for the name to be more—is merely plausible, and we only offer them in the absence of a more satisfactory etymology.

MADURA, an island in the Eastern seas, separated by a narrow strait from the north-east coast of Java. This island is sufficiently deep to allow of the largest ships to pass through, but the guidance of a pilot well acquainted with the navigation is required for that purpose. Madura lies between 6° 58’ and 7° 30’ S. lat., and between 110° 20’ and 111° 50’ E. long. Its extreme length from east to west is 90 miles, and from north to south, 54 miles. The island is divided into three districts, each of which is nominally under the government of a native chief, but the whole are subject to the authority of the Dutch governor of Java. These divisions are:—Sangkalan, occupying the western; Pama, occupying the central; and Patakan, the eastern portion of the island. Each division contains a town or capital, bearing the name of the district. In the year 1746 the Dutch exercised so much authority over the chiefs or panumbangs, that they settled the order of succession, and obliged them to pay a tribute, partly in money and partly in the products of the country. For some services rendered to the Dutch government in 1825, during the insurrection in Java, the chief of Sunanam received the title of sultan.

The population of Madura in 1815, according to a census made by the English government, which was then in the possession of the island, was 218,659 souls, of whom 6344 were natives of China. The inhabitants reside in villages, at which there are about 110,000 in the island. The character of the natives resembles very nearly that of their Javaese neighbours; but they are more warlike, and are more readily disciplined as soldiers: they speak a peculiar dialect, which has but little resemblance to that of Java. The religion of the Madurese is Brahminical, and the practice of widows burning themselves with the bodies of their husbands is prevalent.

The soil of Madura is fertile, and produces abundance of rice, sugar, rice, and other crops, which are exported for the benefit of the country. The coffee, rice, and sugar are also exported, and the island is considerable quantity of coffee-coated oil is also prepared for the same purpose; but the principal export trade of the island consists of salt, many cargoes of which are taken every year to Java, Sumatra, and Borneo. (Stuvorius’s Voyages; Crawfurd’s Indian Archipelago.)

MEANDER. [Anatologia.]

MACÉNAS, CAIUS CILNIUS, belonged to the equestrian order (Horat., Carm. i. 20, 3; Vellius Patrice. Tac., Ann. ii. 17; Eutruscan family (Horat., Carm. i. 1, 1; iii. 29, 1; Serv. i. 6, 1) at Arretium. (Liv. x. 3.) The cognomen Mæcens is derived, according to Varro, from a town of the same name. (De Ling. Lat. vii. 196.) The title of Mæcenas was given to the Augustus, but he appears to have received a superior education, and was well acquainted with the Greek language. (Hor. Carm. iii. 8, 5; Epist. i. 19, 1.) He early became acquainted with Octavianus (Augustus Caesar, 12 B.C.) and continued his life long and chevalier of that emperor. While Augustus was engaged in opposing Sextus Pompeius, and also during many of his other wars, Mæcenas was entrusted with the charge of the city; and it appears to have been owing to a fine taste and sagacity, that the city was preserved in Rome during the absence of Augustus. (Tac. Ann. vi. 11; Dio, xlix. 16; Seneca, Epist. 114; Hor. Carm. iii. 19, 25; and Lepid.) Mæcenas is said to have dissuaded

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Augustus from his purpose of restoring the ancient Roman constitution, which Augustus however could never have seriously intended. October, 38; Sanes, Div. Brev. Vit., 5.) Maccenas was held in the greatest honour by Augustus, although during the latter part of his life he appears to have been for a short time in disgrace with the emperor, principally owing to the intrigues of his wife Tarsenia (Tac., Ann., iii. 39; Dio, liv. 19, 17.) but he was probably restored into favour again before his death, which happened n.e. 8, four years after that of Agrippa. Maccenas enjoyed with Agrippa the full confidence of Augustus, and his death was lamented by Augustus himself in a touching strain. (Suet., De Benef., vi. 32.) If we may believe a tale related by Dion, he sometimes rebuked the emperor with the utmost freedom (Iv. 7.)

Maccenas was a great patron of literature; and it was principally owing to his influence and support that Virgil and Horace were raised from a state of poverty and indigence, and enabled to devote themselves to poetry. They were both admitted to his friendship, and Horace in particular appears to have lived on terms of the greatest intimacy with him.

The health of Maccenas was not good (Pliny, H. N., vi. 59), and was probably injured by his luxurious and voluptuous habits. (Senn., Epist. 192; Juv., xii. 39; Petron., 81; Dio, liv. 39; Tac., Ann., i. 54; Flutarch, Erotetis, c. 16.) He seems to have been more fitted than any other man of his time to handle the byzantine style, for which Nero is said to have witnessed the burning of Rome. (Suet., Nero, c. 38.; Sen., Epist. 114.)

Maccenas wrote several works, none of which have come down to us. Their loss however is not much to be deplored, since the testimony we have of many authors who have been written in a very artificial and affected manner. (Suet., Octav., c. 86; Sen., Epist. 114; Tac., Dial. de Orat., c. 25, who speaks of the calamiotis Maccenatia.) They consisted of poetical tragedies (one entitled 'Prometheus,' and another 'Octavia,'), a history of the wars of Augustus (Hor., Carm., ii. 12), and a symposium, in which Virgil and Horace were introduced. (Servius on Virg. Aen., viii. 316.) The few fragments which remain of these works have been published by the learned Macennatia, sive de C. Clunii Maccenatius Vita et Moribus, Göttingen, 1824.

There is a curious passage in the 'Saturnalia' of Macrobius (ii. 4), in which he gives an extract of a letter from Augustus to Maccenas, in which the emperor ridicules the style of his friend: 'Val. me gentilium, mulcet, etrur, fer accipit, infer, lacerat, vituperatur, adhuc tenebrae.' (Lucilius, Aen., ad Lucanum.)

The name of Macenas was almost entirely from both Tarrasus and Cuvier; and for, though he includes it in his second order, which corresponds with the 'Insecta' of M. Ternimack; for he places it among his fourth 'Order of Mammalia' (Cuvier's 2nd order), and it stands in the 'Regnum Animalium' in the following relative position: 'Orchis, Gynaec.'

Maccenas Molacica. M. Ternimack stretches himself almost entirely from both Tarrasus and Cuvier; and for, though he includes it in his second order, which corresponds with the 'Insecta' of M. Ternimack; for he places it among his fourth 'Order of Mammalia' (Cuvier's 2nd order), and it stands in the 'Regnum Animalium' in the following relative position: 'Orchis, Gynaec.'

M. Ternimack arranges the form under his 'Order of Insectivorous Birds' (Insectivores), among the Thrushes, gives it a position between Cinclus and Phita. Cuvier does not notice it in his views from M. Ternimack; for he places it among his third 'Group of Piscivora' (Cuvier's 2nd order), and it stands in the 'Regnum Animalium' in the following relative position: 'Orioli, Gymno.'

Maccenas Molacica. M. Ternimack stretches himself almost entirely from both Tarrasus and Cuvier; and for, though he includes it in his second order, which corresponds with the 'Insecta' of M. Ternimack; for he places it among his fourth 'Order of Mammalia' (Cuvier's 2nd order), and it stands in the 'Regnum Animalium' in the following relative position: 'Orchis, Gynaec.'

Before we proceed to a consideration of the views of modern authors, it is right to put the reader in possession of Cuvier's description, with his reasons for classing Maccenas as he did. He says that the size of the bird (a little less than a common sparrow) is very remarkable for the family to which it belongs. The structure of its beak, or rather bills, is very well adapted for the purpose of catching insects. The twelve ordinary feathers of the tail are loose and very distant barbs; two more in the middle, furnished on one side only with close-set barbs, and the other one with open barbs, both being furnished with long barbs on the outer side; the two middle barbs, being very short, are almost concealed in the outer barbs. The bill is strong and long, and the feathers of the wings are very short and do not become enlarged till towards the end of the feathers. The female has only two ordinary tail-feathers.
name of the Lyre-Pheasant or Pheasant of the Woods, and sometimes at the end of the Calaoa [Hornbill, vol. xii.] and the Hoaize [Cracidæ, vol. viii., p. 132], as M. Vicellot classed it, while, scientifically speaking, it is near the Thrush that Menura ought to take its place, though it differs distinctly from the one in the form of the body.

Mr. Swainson (Classification of Birds, vol. ii., 1837) alludes to the place assigned to Menura and Megopodius by Mr. Vigors, and says that they certainly accord more with that family than with any other group of the Gallinaceæ.

Mr. Swainson observes that both these genera have the feet uncommonly large, and that both seem to represent the scapular genus Orthotomus, a bird indeed scarcely larger than a sparrow, but agreeing in the very remarkable scapular character of having the three fore toes of nearly the same length. If, then, we accept the opinion of Mr. Swainson, the true Cranes, as we believe, is the scapular family of the Raraæs, this singular analogy is precisely what we should expect in two groups representing the same tribes. In the synopsis at the end of the volume Mr. Swainson cancels the term Cracidæ, and substitutes in its place the family Megopodinae (Megopodidae?), remarking, that as he has every reason to believe, from an attentive study of this family, that Cracidæ is an aberrant genus, he has thought it better to correct his former error, and to name the whole from that group which is one of the chief types; and Menura the first genus of his 'Family Megopodinae, Great-footed,' with the following

Generic Character.—Bill moderate, depressed at the base, straight; the tip obliquely notched. Nostrils naked and placed near the middle of the bill. Feet large, strong and robust; nearly all the anterior toes equal; the claws enormous for the size of the bird, obtuse, and slightly curved. Wings short. Tail very long, lyre-shaped; the feathers singularly developed. The typical or coiriastal form of the tail.

Example. Menura superba, Menura Lyra or Lyra, Menura Nora Hollandia, Shaw, Lath., Menura paradoxa, Vieill., the only species known.

Description.—Lieutenant Collins, in the work above quoted, gives, towards the end of his second volume, a more minute and ornithological description (with which he had been 'favoured') than that stated above. The second description is as follows. "The bill of this bird, which has been named Menura superba, is straight, having the nostrils in the centre of the beak. The base of the upper mandible is furnished with hairs like feathers turning down; the upper mandible is at the base, somewhat like that of the pigeon. The eye is a dark hazel, with a bare space around. The throat and chin are a dark rufous colour; the rest, the body, of a dusky grey. The feathers on the rump are longer than those of the body, and more divided. The colour of the wings, which are concave, is dark rufous. The legs and claws are large in proportion to the bird. The middle toe is conjoined with the middle finger as far as the first joint. The tail is long, and composed of three different sorts of feathers, of which the upper side is of a dark grey, with ferruginous spots. The first four lower feathers are a little curved in the breast of a pearly colour, enriched with several crescent-shaped spaces, of a rich purple and black colour. The laminae are unwebbed, turned round toward the extremity, and ornamented with a black bar, the breadth of an inch, and fringed at the end. The back of the second is likewise long, is fringed with long hair-like filaments; the third, which is also long and curved, is plummed on the inner side only, except at the extremity, where there are a few separated filaments of a dark-grey colour."

The female Menura superba differs very little from the male, except in the tail, which is composed of twelve feathers, a little curved and plumed, having the upper side dark rufous and grey, and the under of a pearly colour. The more modern descriptions of the tail of the female have been composed of long uniform feathers, which are straight and graduated. Notwithstanding the sombre hue of this extraordinary bird, the magnificence and peculiar structure of the beautiful tail of the male, which imitates the form of an antient Græcan lyre, gives it a superb appearance.

Locality.—New South Wales, principally in the forests of Eucalyptus and Casuarina which cover the Blue Mountains, and in their rocky and retired avenus.

Habits.—Lieutenant Collins says that "the following particulars relating to these birds were observed by persons resident in the country, and who were eye-witnesses of what is here told. They frequent retired and inaccessible parts of the interior; have been seen to run remarkably fast, but their tails are so cumbersome that they cannot fly in a direct line. They sing for two hours in the morning, beginning from the time when they quit the valley, until they attain the summit of the hill, where they scrape together a small hillock with their tail spread over them, imitating successively the note of every bird known in the country. They then return to the valley. If dependence could be placed upon this account as far as relates to the singing, it would assist the views of those who would place Menura near the Thrushes; among the gallinaceous birds, singing, in the common acceptance of the word as applied to birds, is not known. But this sort of statements, taken as they mostly are from the relation of those who are not very careful as to the truth of their communications, if they can only surprise and please their auditors, must be received with many grains of allowance. The 'song' is not corroborated by subsequent observers.

Mr. Caley informed Mr. Vigors, that from the observations he was enabled to make on these birds during his stay in New Holland, it was his opinion that these birds were gallicinaceous. Mr. Caley generally found them in flocks, and for the most part on the ground. M. Lesson states that they come forth in the evening and the morning, remaining quiet during the day on the trees wherein they say that they are becoming more and more rare, and that he only saw two skins during the whole of his stay at New South Wales. Mr. Swainson informs us that chief-justice Field of Gibraltar, who was long a resident in New Holland, assured him (Mr. B.) that Menura was all its habits was a gallinaceous bird, living on the ground in small societies, and being very fond of rolling in the dust.
MEN

kangaroos and emus are rarely seen, when they might easily be domesticated about the habitations. 'The same remark,' added, applies to the Lyre Pheasant, "it may be they are not domesticated, before, by extermination, they are lost to us for ever?'

We trust that this may meet the eye of some spirited individual who will not suffer the loss to take place, but himself import these magnificent birds. That they would live in this country, as well as the Emus and Kangaroos, with ordinary care, there can be little doubt; and the would form a striking addition to our avifauna,—perhaps even to our horseback.

M. R. D. PALUS. [Azov, S. A. or.]

MARRA, Dr. Leach's name for a genus of Amphipodous crustaceans.

Example, Mero grossimana, Leach (Cancer Grossimana, Montagu, 'Linn. Trans.,' x., tab. 4, fig. 1). Very common on the English coasts, where it is found under stones and rocks at low water.

MAESTLIN, MICHAEL, a German astronomer, born about the year 1550, probably at Tubingen, in Wirtemberg, at the university of which place he was then professor of mathematics. While resident in Italy he became acquainted with Galilee, whose conversion from the doctrine of Ptolemy to that of Copernicus is partly attributed by some authorities to the arguments adduced by Maestlin in favour of the latter. Upon his return he became tutor to Kepler, to whom he behaved with marked liberality; for notwithstanding the great benefit which Kepler must have derived from his instruction, he declined accepting any pecuniary remuneration whatever; and to Kepler does not appear to have been wanting in confidence and respect towards him, for both in his 'Mysterium Cosmographicum' and in a letter prefixed to the 'Narrative of Rheticus,' he acknowledges the great encouragement he had unremittingly received from his tutor; and at a later period, when he struggled with disappointment and difficulty, he furnished him with a handsome silver cup, bearing an appropriate inscription. Maestlin died at Tubingen, in 1590. His published works are: 1. 'De Stellis Nova,' 2. 'Siderum Tabulae,' according to the Prutenic Tables by Erasmus Reinold; 3. 'Thesis de Rebus et Demonstratio Cometae anni 1577 et 1578.' Tubingen; 1577, 4to. 5. 'Consideratio et Observation Cometae.' 1590. Hildesheim, 1591. 1592. 6. 'Alterum Exumen Gregorini Octaviani.' 1592. 1590, 4to. 7. 'Epitome Astronomiae.' Tubingen, 1591, 1610. &c.

(Watt's 'Bibliotheca Brit.;' Hutton's 'Mathematical Dictionary,' &c.)

MAFFE', SCIPIO', Marquis, born at Verona in 1735, a young family, was educated at the University of Parma, and showed an early aptitude for poetry and literature in general. When the war of the Spanish successions broke out, he entered as a volunteer the Bavarian service, in which his brother Alessandro Maffei held the rank of general. He was appointed to assisting some Bavarian army for Italy with the view of devoting himself entirely to study. He wrote upon many and various subjects, and generally wrote well. His principal works are: 1. 'La Morope,' a tragedy, the first written in Italian which deserves the name; it was received with great applause, and went through seventy editions in the author's lifetime. 2. 'Verona Illustrata,' which is the principal work of Maffei's and full of antiquarian and historical learning. The first part contains a history of Verona from its foundation to the year 1500; the second, from 1500 to 1625; the third, from 1625 to 1700; the fourth, from 1700 to 1735; with biographical notices of the native writers, the third is a stranger's guide to all the remarkable objects in Verona and its neighbourhood; in the fourth the author illustrates the Roman amphitheatre in that city, which is one of the best preserved remains in Italy. The whole work is written in a spirit of sound criticism, and exhibits the various features of the social, political, and intellectual state of that part of Italy during a long course of ages.

Della Scienza chimica e magnetica libri tre,' dedicated to Pope Clement XI, in which he combats the absurdities of the dominant school. 3. 'Trattato dei Testi antichi e moderni,' in which he took up the defence of theatrical performers against the denunciations of
Father Concina, a Dominican, who attributed to them all the corruption of the age. Pope Benedict XIV, in a brief dated the 5th of October, 1740, addressed to Maffei, testified his full approbation of this defence, saying that 'theatres ought not to be suppressed, but that the performances ought to be as much as possible honest and decorous.'

Maffei's distinguished character is accounted for something which he wrote concerning the bull Unigenitus [Januarius]; and also because he maintained, against two priests of Verona named Ballerini, that it was lawful to receive a moderate interest on a loan of money, 'Impiego del denaro con interesse,' and this was the subject of a public controversy in North Italy, prevalent on the Venetian senate to exile Maffei, who was then seventy years of age. But the senate soon perceived their error, and Maffei was honourably recalled after four months, and re-entered Verona in triumph.

Maffei went to the Papal Islands, and was appointed editor of the first literary Journal which appeared in Italy, 'Giornale dei Letterati,' begun in 1710, and which was continued till 1730. After the discontinuance of that journal he wrote a set of continuation of it under the name of 'Osservazioni Letterarie,' of which he wrote six volumes.

In 1733 Maffei visited France, where he collected the materials for his work, 'Gallia Antiquitatis,' which he afterwards published. He was numbered among the members of the Academy of Inscriptions. From France he went to England, where he was introduced to King George II, especially by the Prince of Wales, who was very fond of Italian literature. He was made a member of the Royal Society, and the university of Oxford, which he also visited, conferred on him the degree of L.L.D. He travelled through Germany and Switzerland, and returned to Italy after an absence of four years.

Maffei died at Verona in the year 1755, being eighty years of age, with the well merited reputation of one of the first scholars of the eighteenth century.

(Corniani, Scoloi della Letteratura Italiana; J. Pinde- monte, Elogio di Scipione Maffei.)

There is another but much older writer of the same name, Giovanni Maffei, who wrote a 'History of the East Indies,' from the time of the first Ptolemy, and an Italian translation was published at Florence in 1589.

Mafra is the name of a vast and magnificent pile of buildings, which contain a church, royal palace, and convent, situated in a bleak solitary country about 20 miles north-west of Lisbon, and about three miles from the sea-coast. It was founded by King John V. in the year 1717, in imitation of the Escorial of Spain. The plan of the edifice forms a quadrangle, measuring from east to west 760 feet, from north to south 470 feet. In the centre of the edifice is a tower, called the Torre de Cristo, measuring 315 feet from the ground to the summit of the Giralda. The tower is composed of 10 towers, each of which is 100 feet high. The church is consecrated at 806, and the doors and windows at 5200. The whole of this building is vaulted and covered over with flags, forming a vast terrace. The gardens attached to the building are very extensive, and enclosed by a wall; they are well stored with a variety of flowers imported from Asia, Africa, and America.

Father Joao de Prado published a full description of Mafra in 1731. The small town of Mafra has grown up round the monastery. (Kinsey, Portuguese Illustrated; Murphy, Travels in Portugal.)

Magalhaens, Fernando, commonly but incorrec-
This strait may be considered as divided into three parts. The eastern part extends from Cape de las Virgenes to Cape Negro, and its direction as far as the first Narrows is nearly west, but afterwards to the south west. In two places the strait contracts to a width of five or six miles, forming the two Narrows, of which the southern one is called De las Peras and the second that of S. Simon. It is extremely difficult and dangerous to pass through these Narrows from east to west, as western winds prevail in them nearly all the year round, and the western currents, which set through them, are so strong that the vessel runs more than seven miles an hour, a rate which approaches the rapidity of a mountain-torrent. The eastern part of the strait is not encumbered with islands and cliffs, except at its western extremity near Cape Negro, where there occur the beds of the smaller one are called some shoals. The country on both sides of this part of the strait is rather level, except that at some distance from the shore a range of hills rises on each side to a moderate height, but with rather a precipitous ascent. No trees grow in this country; the bushes are few and stunted, and the grass coarse though abundant.

The central portion of the strait, from Cape Negro to Cape Froward, lies north and south, and is the widest part, extending in two large inlets called the Islands and the Channel of the Carabobo and deep into King Charles's Southland. This part of the strait is the easiest to navigate, being free from islands and cliffs, except the large island of Dawson. The country on both sides rises into high mountains, especially in the vicinity of Cape Froward and the western coast of King Charles's Southland. Some of the peaks are above the snow-line, which here occurs at about 3000 feet above the sea-level. Mount Sarmiento on Tierra del Fuego attains the height of 6000 feet. Between the mountains there are valleys, which, as well as the lower part of the mountains themselves, are covered with a heavy growth of timber-trees.

The western part of the strait extends from Cape Froward to Cape Pillar, in a direction nearly south-east and north-west. It is very difficult from the narrowness, the width varying between 5 and 35 miles, and also by reason of the numberless islets, with which the shore, especially on the north side, is lined. To these disadvantages must be added the north-western gales, which with incredible force along the channel of the strait. The mountains on each side are so high as to form a long central portion, and rare snow-line; but their huge masses approach so close to the shores that in many places it is much more difficult to pass through them. The land-locked inlets of moderate extent however occur in several places, and afford safe harbours. The mountains, which consist mostly of granite and greenstone, are irregularly heaped together. For most of them have a height to their height are covered with timber and grass. The water lakes are uniting with this portion of the strait. Nearby the south-eastern extremity of the large island of South Desolation (Fuzon) a channel opens eastward into the continent. This strait, called Jerome Channel, leads to Otway Water, a large lake 80 miles long, trending to the north-east, and separated from the eastern portion of the strait only by a narrow isthmus. From this lake another channel, called Flarn Channel, 12 miles long, leads in a north-west direction to Oniviar and lake, called Skyring Water, which is about 34 miles long and 12 wide. The country bordering these lakes on the south and west is high, rocky, and mostly covered with trees; whilst that which encloses them on the east and north is a low, undulating plain, in which the vegetation is much about crescent.

The Strait of Magalhaens was discovered by Fernando Magalhaens in 1522. The Spanish government caused a settlement to be made on the northern shore, in the central part of the strait, by that skilful navigator Sarmiento, in 1520. This settlement was visited in 1587 by Cavendish, who found the settlers perishing with cold, hunger, and disease. From that time the place was called Port de Hombre or Port Famme, and was soon after abandoned.

The strait was at once much navigated by vessels bound for the harbours on the western coast of America; but the navigation was always dangerous and tedious. Magalhaens had the good fortune to traverse it in less than thirty days, but his successors have frequently employed double or triple that time in passing through the strait from east to west. The difficulty is produced by the nearly continuous western gales, the great strength and irregularity of the currents, the numerous rocks and cliffs in the western part of the strait, and the great humidity of the climate, which renders the navigation still more dangerous. The strait is called De las Peras.
this country consist of several parallel vaults, separated from each other by brick partition-walls, in which are doorways for affording lateral communication. Each vault is about ninety feet long and nineteen feet wide internally, and it has a door at each extremity. The side walls are from eight to ten feet thick, and are strengthened by buttresses built into an angle against them. The concave or interior surface of each vault, in a vertical and transverse section, is nearly of a parabolical figure, above the springing courses; and the exterior surface has the form of two inclined planes meeting in a longitudinal ridge-line above the middle of the vault. The elements of the brickwork forming the vaulted roof is therefore various; at the crown it is seven or eight feet, and on the flanks about three feet, this being considered sufficient to resist the shock of falling shells. The vault, on the exterior of the inclined planes, is covered with a sheet of sheet-lead or copper. The height interiorly, from the level of the floor to the crown of the arch, is nineteen feet; and the line at which the vaulting springs from the side walls are at half that distance above the floor. The narrow ver-

ticed by Williams, which are made to serve as main and cellar vaults, for the purpose of giving air to the interior, are cut so as to leave a solid block or traverse of the brickwork in the middle of the thickness of the wall; the line of the perforation branching laterally from its general direction, and spreading along the width of the chamber, with careful construction, while air is admitted, no object capable of doing mischief can be thrown in from the exterior of the building. The flooring-planks are, of course, laid on joists raised considerably above the ground. One vault of the dimensions above stated, would contain 2500 barrels, or 225,000 lbs. of powder.

When the roof of a magazine is covered with earth to the height of several feet, for the purpose of securing it effectually against the effect of falling shells, the rain-water allowed to drain off may eat away the parliament built of the side of the chamber. This would not do in the channels formed by the tiles, and be conveyed away by the gutters between the roofs.

MAGDALEN COLLEGE, Oxford, was founded in 1453 by William Wykeham, and is named after Wykeham's head master and Winchester and Eton schools, and provost of Eton, bishop of Winchester, and at the same time lord high chancellor of England, for a president, 40 fellows, 30 scholars called "demes", a schoolmaster, an usher, four chaplains, an or-ganist, and a tailor. The college must be the diocese of Winchester; seven of the county of Lincoln; four of the county of Oxford; three of the county of Berkshire; four of the diocese of Norwich; two of the county of York; one of the county of York; one of the county of London; one of the county of Northampton; one of the county of Durham; one of the county of Gloucester; two of the county of Warwick; one of the county of Buckingham; one of the county of Kent; one of the county of Nottingham; one of the county of Essex; one of the county of Northumberland; one of the county of Glamorgan; one of the county of Wiltshire. The demes may be elected from any of the above-mentioned dioceses or counties, with the exception of York and Durham. The rector is the Bishop of Winchester.

The places mentioned consist of rectories and vicarages in different counties, with two perpetual curacies, thirty-seven in number.

The number of members upon the college books in 1838 was as follows:

Among the eminent persons who received their education at this college are cardinals Wolsey and Pole, bishops War-

er, Hough, and Horne, dean Colet, Linacre, Lily the grammarian, Fox, the martyrologist, Godwin, the Hebrew scholar, Hallam, the historian, Dr. Heylin, Elisha Coles, Dr. Thomas Smith, Addison, Gibbon, and Dr. Chandler.

Magdalen College stands upon a plot of ground at the entrance of Oxford from London, bounded on its east side by the Cherwell. The buildings are extensive. In one corner of the entrance court stands the stone pulpit from which the University sermon on St. John the Baptist's day used to be preached. This court leads into a larger quadrangle, which contains the chapel, hall, and library. South of the chapel and on the south side of what is called the Chappel's court stands the tower of the college. The beautiful proportions of which render it one of the chief ornaments of Oxford. The great quadrangle was begun by the founder in 1473, though not finished till after his death. The foundation of the tower was laid in 1492. Previous to the Reformation a mass of requiem for the soul of St. Vitus was performed on the top of this tower every May-day early in the morning; this was afterwards commuted for a piece of music, which is still executed on that day by the choristers, for which the rector of Slim-

don gives in Gloucester High Street annually the sum of 10s. The foundations of what are called the 'New Buildings' of this college, on the north side of the great quadrangle, were laid in 1733.

The chapel of this college, which was rebuilt and decorated in an incongruous manner in the time of Charles I, was restored to its former magnificence under the direction of Mr. Cottingham in 1833. The fine picture of "Our Saviour bearing his Cross," over the communion table, is by Guido, and others to Ludovicus Caracci, but it is now given to Moralez. It was brought from Vigo in 1702.

("Gth's Coll. and Halls of Oxford; Chalmers's Hist. of the Univ. of Oxf., 8vo. Oxf., 1819; Oxford Univ. Calendar, 1838.

MAGDALEN HALL, Oxford. The school, with the refectory and chambers erected by Bishop Waynfleet for Students previous to admission into his college, and adjoining to his building now Magdalen Hall, was established as early as 1487, and was governed by one of the Fellows till 1602, when it became an independent hall. The President and Fellows of Magdalen College, being desirous of recovering this site, obtained, in 1816, an exclusive charter of incorporation of the new corporation, with the right of receiving of this society Hartford College, which had lapsed to the crown, and the Principal and other members removed there on its completion in 1822.

This Hall is possessed of a benefice, the rectory of South Merton in Berkshire. It has also several exhibitions and scholarships, open to competition, left by different founders.

The original foundation of Magdalen Hall was established under the names of its two former patrons, Thomas Darcy, Bishop of Wilkes, Warner and Daniel the poets, Sir Harry Vane, Sir Julius Caesar, Lord Clarendon, Sir Matthew Hale, Sydenham, Dr. Pocock, afterwards of Corpus College, Dr. Hickey, afterwards of Oxford, Dr. Pint, Sir George Wheeler, and Sir Edward Edington, and was renewed in 1602.

The buildings of the old Hall were destroyed by an acci-
dental fire, Jan. 9th, 1820.


MAGDALEN ORANGE, Colenso, was built by Edward Stafford, duke of Buckingham, in the year 1519, under the name of Buckingham House, on the site of an ancient hostelry belonging to the abbey of Ely, Ramsey, and Walgen, in which some of the monks of those monasteries resided from time to time. At a much more remote date it is supposed by some to have been the original site of Barn-
well Priory. The Duke of Buckingham did not complete the building at the time of his attainder, the property fell to the crown and was granted to Thomas, lord Audley, lord high chancellor of England, who in 1526 endowed it for a Master and four Fellows.

Beside the foundation fellowships left by lord Audley, this College has thirteen bye-fellowships; one of them is a springing fellowship. The College is worth upwards of 200l. per annum, and is held for only nine years, and appropriated to the county of Norfolk. The Master has the sole appointment to this fellowship, and the holder must be in holy orders or designed for such.

The master of this College is in the gift of the pos-

sor of Audley End.

Beside the fellowships, there are 43 scholarships belonging to this College, founded by different benefactors, some of considerable, others of smaller value; four of them are appropriated to Shrewsbury school; two to notaries of Shropshire; two to scholars from Wisbeach school; two to Leeds, Halifax, and Haverhams schools; and one to King's College, London.
The foundation-estate of lord Audley consists of the impropriate patronage of St. Catharine Cree Church, in London, and also a considerable part of the city antiently called Covent Garden Christ Church. The benefices in the gift of the College, exclusive of the vicarage of St. Catharine, are by leases, and the vicarage of St. Michael, in Cambridgeshire, the rectories of Andury and Comberworth united, and the perpetual curacy of Grinthorpe in Lincolnshire; the rectory of Ellingham in Norfolk (annexed to the master'ship by act of parliament); the rectory of Abbots Bromley, the buildings and house in St. Michael, in Wilts. The Master has the sole patronage of Steeple Ashton.

Among the eminent persons who have been members of Magdalen College are lord keeper Bridgman, bishop Walton, editor of the Polyglot Bible, Dr. Howell, the historian, the chaplains, and Dr. Green. This College, which stands on the north side of the Cam, consists of two small courts. On the north side of the second is a stone building, the body of which is appropriated to the reception of the Pessayn Library. This library was bequeathed to the college by Samuel Paye, Esqr., Secretary of the Admiralty in the reigns of king Charles II. and king James II., and is one of the most interesting in the University. Its contents are matchless both in variety and condition. With a few exceptions, all the books are in binding of calf, gilt. Beside numerous manuscripts, this library is remarkably rich in works from the presses of Caxton, Wynken de Worde, and other early English printers. It contains a curious collection of engravings, engravings, miniatures, copies, repetitions, and drawings, and a very rare and extensive collection of early ballads. There is an enumeration of some of the most interesting works in this library in Hartshorne's Book Rarities in the University of Cambridge, 1680, London, 1739, 2 vols.

The number of members on the boards of this college, March 12, 1838, was 168. (Lysons's Cambridgeshire, pp. 123, 124; Cambridge University Calendar for 1838.)

MAGDEBURG, one of the three governments of the Prussian province of Saxony, is composed of the antient duchy of Magdeburg, the county of Barby, the bailiwick of Gommern (without the circle of the Saal), the Altemark (Old Mark), on the left bank of the Elbe, the bailiwick of Klötze, the principality of Halberstadt, with Deringen, Queilinburg, Wernigerode, and Schauen. Its area is 4410 square miles, and the population, according to the census of 1837, amounted to 598,981. The government is divided into fifteen circles. The country is one of the finest parts of the Prussian monarchy, consisting chiefly of a fertile and level tract; the hills in the south-west, which are offset of the Harz, are low, and in other parts the surface is merely varied by gentle elevations. (Saxony, Prussian Province of.)

The duchy of Magdeburg is not to be confounded with the government of the same name; which contains only a part of the duchy, the other part being in the government of Merseburg.

MAGDEBURG, the capital notonly of the government but of the province of Saxony, is situated on the left bank of the main arm of the Elbe, in 52° 8' N. lat. and 11° 39' E. long. It is a fortress of the first rank, and one of the most important bulwarks of the Prussian monarchy. The city consists of four parts and two separate suburbs:—1, The old town, or principal fortress along the Elbe, with eleven bastions and ten small ravelins between them, with various other works, surrounded by a double river of a considerable stream and a second by a triple-covered way, encompassed by mines. South of the old town lies—2, The Stern, a square casemated tennail, built under Frederick II. by General Wallrave, who died here in a prison erected by himself, which was afterwards the Magdeburg, with the citadel built in 1806, on an island, by king Frederick I. Over the two smaller arms of the Elbe, beyond it, there are drawbridges; and beyond lies—4, Friedrichtshitz, or Thurnsummer (i.e. Tower Fort), which defends the entrance on the right bank of the Elbe, where the newly-built Frederick-William bridge, 1809 feet long, leads over the low ground on the bank of the river. The suburb of Neustadt, lying to the north, as being not near to the fortifications, was partly destroyed in 1806 by the Prussians, and entirely demolished in 1811 and 1813 by the French, together with the adjoining suburb of Studen, built and inhabited.

Magdeburg, like most old continental towns, has in general narrow and crooked streets, but having been rebuilt since its destruction by Tilly in 1631, it is better constructed than many antient cities. Among the more remarkable buildings are the buildings of the university, the forty-five smaller altars, a pulpit of alabaster, and a front of one block of porphyry. There are twelve churches, one of which is Roman Catholic. There are two large squares, the old market-place, in which is the statue of the emperor Otto the Great, erected 1473, and the cathedral square, which is surrounded by handsome buildings and avenues of trees. The public establishments and charitable and scientific institutions are numerous and well conducted; and the university of 896 students in 1834 is one of the most important in Prussia. The city is surrounded by the province of Saxony, as well as of the government and circle, the residence of the chief president, of a Protestant bishop, and the head-quarters of the fourth corps of the Prussian army, with several public libraries, collections of pictures, etc. The political and social events in its annals is its capture by storm on the 10th of May, 1631, by the Austrian general Tilly, when it was given to pillage for three days, and 30,000 of the inhabitants were put to the sword; the whole city, except the cathedral, one of the churches, and about 120 houses, was at the same time reduced to ashes. (Rathmann, Geschichte der Stadt Magdeburg; Schiller, Thirty Years' War; Hassel, Stein, &c.)

MAGELLANIC CLOUDS. [NEBULAE].

MAGGIO'RR, LAGO. [LAGO MAGGIOIRE].

MAGI, the name of the priests among the Medes and Persians, whose religious doctrines and ceremonies are explained under Zoroaster. The Magi are one of the six tribes into which the Medes were originally divided (Herodot. i. 101); but on the downfall of the Median empire they continued to retain at the court of their conquerors a great degree of power and authority. It would appear however that they did not always retain the sovereignty pass from the Medes to the Persians; and it was probably owing to the intrigues of the whole order that a conspiracy was formed to deprive Cambyses of the throne by representing one of their order as Smerdis, the son of Cyrus, who had been previously put to death by Cambyses. Herodotus, who has given the history of this conspiracy as length, evidently regarded it as a plot on the part of the Magi to restore the sovereignty to the Medes, since he represents Cambyses on his death-bed as conjuring the Magi to save the Medes; and the conspirator was executed again (Herodot. iii. 65); and the Persians themselves must have looked upon it in the same light, since after the discovery of the conspiracy, and the murder of the pretended Smerdis by Darius Hystaspes and his companions, a general massacre of all the Medes followed, and the memory of which event was annually preserved by a festival, called the 'Slaughter of the Magi' (Mazōphora), in none of which the Magi were allowed to appear in public. (Herodot. iii. 79; Ctesias, Persians, i. 24.) The Medes, being thus deprived of their religion, lost much of their influence and authority, for they were represented by Herodotus, in his description of the Persian religion, as the only recognised ministers of the national religion (i. 132).

The learning of the Magi was connected with astrology and enchantment, in which they were so celebrated that their name was applied to all orders of magicians and enchanters. Thus the Septuagint translates the Chaldee

a The Prussian governments, or provinces, have each a regency, at the head of which is a chief president,
MAG 

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MAG

The etymology of this word is doubtful. In Persian the
name for priest is mugh, and it is not improbable, as
Genenius has conjectured, that the word may be connected
with the root sea-eyat, which we have in the Greek
μαγος, the Latin magus and magus, the Persian mih,
and the Sanskrit mahat. It is a curious fact that the
Hindu grammarians derive mahat from a verb mab, signifying
' to worship.' (Wilson's Sanskrit Dictionary, under)

MAGIC SQUARE. This term is applied to a set of
numbers arranged in a square in such a manner that the
vertical, horizontal, and diagonal columns shall give the
same sum. Such arrangements were known all the way to
the Hindus, Egyptians, and Chinese, among whom, as also
among the Europeans of the middle ages, a belief existed that
such squares had astrological and divinatory qualities.

Emanuel Moschopulus,* of Constantiopole, wrote on them
in the middle of the fifteenth century. Others who have written
on the subject are Leibnitz, Frenicle, Bachet, La Hire, Sauvin, &c.
(See Montucla's History, vol. 1, p. 346; Encyclopédie Mthérit, Articles
Quadrés maques; Hutton's Dictionary; and the Mathematical
Researches of the same author.)

Though the question of magic squares is in itself of no
use, yet it belongs to a class of problems which call into
action a beneficial species of investigation. Without laying
down any rules for their construction, we shall content
ourselves with first displaying the magic quality, and showing
that the nonexistence of such squares would be much more
surprising than their existence.

Take any set of numbers in arithmetical progression, and
such that their number shall be a square number: say
the first sixteen numbers—

1 2 3 4 5 6 7 8 16 15 14 13 12 11 10 9

from these last, with its corresponding number in the second
half makes up 17. Write the
numbers in the following manner—

2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Take four of these in such a manner as to take one out
of each row, and one out of each column, and it will
be found, and may easily be proved, that the sum of numbers
such as those mentioned above, shall consist of two pairs of corresponding
numbers, so that their sum must be twice 17, or 34.

The different ways in which this can be done are in number
4 × 3 × 2 × 1, or 24, as follows—

1 6 11 16 5 2 11 16 9 2 7 16 13 2 7 12

1 6 11 16 5 2 11 16 9 2 7 16 13 2 7 12

1 6 11 16 5 2 11 16 9 2 7 16 13 2 7 12

Out of these subdivisions a set may be taken from each,
so that no number shall be repeated, in 24 different ways, as
in the following sample, which shows the four ways that
begin with 1 6 11 16—

1 6 11 16 1 6 11 16 1 6 11 16 1 6 11 16

1 6 11 16 1 6 11 16 1 6 11 16 1 6 11 16

1 6 11 16 1 6 11 16 1 6 11 16 1 6 11 16

1 6 11 16 1 6 11 16 1 6 11 16 1 6 11 16

Now in each of these 24 squares, every horizontal row
\can be written in 24 orders [COMBINATIONS], and in put-

*Some think this word was written by Emanuel Moschopulus the elder, a
Greek, who lived at the end of the thirteenth century.

P. C. No. 886.

**In the different orders together, each square admits of
24 × 24 × 24 × 24, or 331,776 arrangements, without
altering the horizontal rows, but only the order of the
figures in each row. But the order of the horizontal rows can be
varied 24 ways in each square, and there are 24 squares;
so that we have 331,776 × 24 × 24, or 191,102,176 squares,
no one of which repeats any number more than once, and
in every one of which the sum of any horizontal row is 34,
made by two pairs of numbers which give 17 each. But
the number of ways of forming 34 out of four of the
first sixteen numbers is not yet exhausted: for, taking any one
set, say

1 6 11 6

in which 1 and 6 correspond to 16 and 11, we may write 2
and 5, or 3 and 4, and 1 and 6, so that we have not included
in the preceding list

1 6 11 6

3 6 11 4

with all their variations of order; and similar ones for al.
the rest of the list. It would be almost impossible to doubt
that in many of this enormous number of squares, the
vertical columns will sometimes be cases of these new sets:
and it would be something short of magic if some should
also have diagonal columns which fulfil the same condition.
In fact, Frenicle has shown 880 methods of making these
squares magical, a few of which are as follows (Divers
Ouvrages, &c., p. 1693—

1 6 11 6 4 11 14 5 13 4 5 12 16 3 10 5

1 3 4 7 10 6 12 13 2 3 6 11 8 1 12 9 7

2 4 3 15 2 16 5 11 3 15 2 4 13 14 4 13 14

8 12 5 9 8 10 3 13 12 8 5 11 3 10 5 8

1 16 16 5 15 12 12 10 1 6 17 15 2 16 1

1 17 10 4 9 7 14 13 6 11 4 7 6 9 12

2 14 3 15 2 16 5 11 3 15 2 4 13 14 4 13 14

In Frenicle's list of 880, only those squares are included
which are essentially different: thus the following four,
which may be made by turning the last square into differ-
ent directions, are counted as one.

1 11 5 8 1 8 12 13 13 4 14 2 3 11 15 10

1 15 2 16 1 5 16 9 4 12 9 7 6 14 7 2 11

6 7 9 12 11 2 7 14 16 1 2 15 4 9 16 5

3 14 4 13 10 15 6 8 3 5 11 10 13 12 1 8

The methods which have been given for the formation of
magic squares are divided into different rules, according as
the number in each side is odd, even, even, or oddly even.
A general method which shall apply to all cases is yet
wanting. For a full account of these rules see Hutton's
Mathematical Recreations.

MAGI'US, De Montfort's name for a genius of testa-
coeus mollusks, the form of whose shell varies very much
according to its different stages of growth and the circum-
stances in which it is placed.

The genus was placed by Lamarck among his Annelids,
in the family Serpulacea, containing the genera Spirorbis,
Serpula, Perneida, Galeolaria, besides that under con-
sideration.

De Blainville arranged it among the mollusca (family
Cricostomata), between Siliquaria and Valvata, observing
at the same time that Guettard clearly saw the relation of
the form to Vermetus.

Cuvier, in his edition of the 'Règne Animal,' gives it a
position between Vermetus and Siliquaria, in his seventh
order of Gastropods (Tubulibranchiata).

M. Rang remarks that when he was seeking the animal
in India he was struck, like M. de Blainville, with the ana-
logy which the genus presents to the瑄ia, but in India
also to many other genera of Pectinibranchiata. This
ana-
logy, M. Rang further observes, is especially remarkable
when a young individual whose shell has not yet become
tubular is examined.

Description.—Animal.—M. Rang states that he saw
some fragments of the animal, and that it is certainly a
Gastropod. In his description however he notes the animal
as unknown. Dr. Rüppell states that it is furnishd
with an operculum.

Cov—Young.— fragile, with an epidermis, pyriform,
ventriose, with a short spire of three from four turns;
aperture longer than it is wide, oblong, without any notch

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Shell of *Magius* (young). When in this state the shell presents all the characters of a regularly spiral univalve. The animal establishes itself in the excavations of Madreporae (*Astraeus*, &c.), and as the coral increases around it the *Magius* is obliged, in order to have its aperture on a level with the surrounding surface, or near it, to construct a tube, which is more or less eccentric according to circumstances, the growth of the coral determining the length of the tube. As this tube goes on increasing, the animal abandons the spiral for the tubular part of the shell, and in this operation it leaves behind no septa, or partitions, but secretes a compact calcareous matter which reaches to the very summit of the spiral part, and is deposited from time to time as the tube is lengthened; so that in an old specimen the posterior part of the shell presents a solid and almost crystalline mass. Indeed the fracture of this mass is radiated and scabrous. One species only, *Magius antiquus*, is known. The colour is white, more or less pure.

The reader will find the differences between *Magius* and *Leptoconchus*, as stated by Dr. Rüppell, in the article on the last-named genus.

**MAGIANA**. [Philippine Islands.]

**MAGLIABECCHI, ANTONIO,** born at Florence in 1632, early showed a great aptitude for philological and historical studies; he was an indefatigable reader, and had a prodigious memory. He employed his scanty savings in buying books, and gradually collected a vast library, which since his death has become the property of the city of Florence, and is open to the public, and known by the name of Magliabechian.

Magliabechi, in consequence of his immense erudition, was considered as an oracle, and was consulted by princes from every part of Europe. Several princes showed him compliments and gifts their regard for him. His own sovereigns, the grand-dukes Medici, appointed him their librarian. Magliabechi left no work of his own. Some of his letters have been published in various works. In Umani Uomini Illustri, Macerata, 1762; 'Lettera di Uomini Dotti,' Venezia, 1807; 'Prose Fiorentine,' &c. Unfortunately Magliabechi was very vain, irritable, and abusive, and his temper involved him in personal quarrels with several of his contemporaries. He died at Florence, in 1714, at eighty-one years of age.

**MAGNA CHARTA.** The terms of the compact between the feudal chief and his dependents underwent frequent changes in the middle ages, the consequence for the most part of resistances made by the tenants, and struggles for gain liberties which had been originally surrendered or taken from them by the force and power of the chief. When a material alteration was made in the terms of the compact, a record was made of it in writing. Those records are called charters, and the restricted unimportant term which is popularly applied to almost every species of early diplomas. The tenants of the various honours, or great tenancies in capite, are seldom without one or more charters which have been granted them by their lords, by which exemptions or privileges are given, binding the lord to make payments in money, and the mode is settled in which justice shall be administered among them. And even in some of the inferior manors there are charters of a similar kind by which certain liberties are guaranteed by the lord to his tenants. Those charters run in the form of letters, 'omnes

Such a charter is that called the *Magna Charta* granted by King John, but acting in his twofold character of the lord of a body of feudatories, and the sovereign of the realm. This charter is often regarded as the constitutional basis of English liberties, but in many of its provisions it is evident that there had been only a declaration of rights which had been enjoyed in England before the Conquest, and which are still to be granted by King Henry I. on his accession. However, if it did not properly found the liberties which the *omnes

Besides the great charter there was granted at the same time a charter relating to the forests only. There were very extensive tracts of land in England which were woods or forests, uncultivated, and reserved for the pleasure of the king; and there were purities to those forests, all of which were subject to a peculiar system of law, many parts of which felt to be oppressive, and from some of which this charter exempted the people.

The dependences and rights of the church were secured by the great charter.

Magna Charta has been printed in a great variety of forms, there are far-similes of a copy of it which was made at the time, and still exists in the British Museum, and of which there are preserved at Lincoln, and translations of it into the English language. It is thus so easily accessible, that it will not be expected that we shall give a copy of it, or even a complete abstract of its multifarious provisions, some of which are so complex and obscure, that instead of giving them we shall give the satisfactory abridgement of Blackstone in his 'Commentaries,' which has besides an express treatise on this charter.

The great charter, says he, 'confirmed many liberties of the church, and reddrest many grievances ancient feudal tenures, of no small moment at the time: thought now, unless considered attentively and with this retrospect, they seem but of trifling concern. But besides these feudal provisions, care was also taken therein to protect the sub-
ject against other oppressions, then frequently arising from unreasonable amercements, from illegal distresses or other process for debts or services due to the crown, and from the tyrannical abuse of the prerogative of purveyance and pre-emption. It fixed the forfeiture of lands for felony in the same manner, and prohibited the future grants of exclusive fisheries, and the erection of new bridges so as to oppress the neighbouring. With respect to private rights; it established the testamentary power of the subject over part of his personal estate, the rest being disposed of among his wife and children; it laid down the law of dower as it hath continued ever since; and prohibited the appeals of women, unless for the death of their husbands. In matters of public policy and national concern, it enjoined an uniformity of weights and measures; gave notice of foreign war by an obligation to hear the exchequer, and forbade the alienation of lands in mortmain. With regard to the administration of justice: besides providing all denials or delays of it, it fixed the Court of Common Pleas at Westminster, that the suitors might no longer be harassed with following the king's person in all his progresses; and at the same time brought the trial of issues home to the very doors of the freeholders, by directing assizes to be taken in the proper counties, and erected throughout the kingdom. It also even provided that the very process of the courts in cases of trespass, then incident to the trials by wager of law and of battle; directed the regular awarding of innoments for life or member; prohibited the king's inferior ministers from holding pleas of the crown, or trying any criminal charge, whereby men might be put to death; but it is unfavorable to the exchequer, and regulated the time and place of holding the inferior tribunals of justice, the county court, sheriff's court, and quarter-court. It confirmed and established the liberties of the city of London, and all other cities, boroughs, towns, and villages. The abolition of the Exchequer would have merited the title that it bears of the great charter), it protected every individual of the nation in the free enjoyment of his life, his liberty, and his property, unless declared to be forfeited by the judgment of his peers or his court. Such a concession from the king was not gained without a violent struggle; in fact he was compelled to yield it by an armed force, consisting of a very large portion of the baronage, which he was far too fond of to retract it with effect. The right of the chief being preserved by the chroniclers of the time, and in the charter itself; and whenever required, they call up to this day a mingled feeling of respect and gratitude, the respect and gratitude which men pay to those who have obtained for them the faculties of some persons; though, it may appear that those privileges were no thing more than rights of which they had been deprived, and to which therefore they may be said to have been justly entitled. They appear the patriots of a rude age, and the minds disorderly, Robert Fitz Walter, Robert of Gloucester, and the other evils (if such existed) which were manifested in the charter. The first name is that of Robert Fitz Walter, who belonged to the great family of Clare. The title given to him as head of the host was Marshal of the Army of God and of the Holy Church. Next to him come Eustace de Vesci, Richard de Percy, Robert de Roos, Peter de Brus, Nicholas de Stuteville, Saier de Quinci, earl of Winchester, the earls of Clare, Essex, and Norfolk, William de Montfort, Robert de Bures, Fitz Warin, William de Montacute, William de Beauchamp, and many other families long after famous in English history, the progenitors of the ancient baronial houses of England.

The charter was signed, or rather sealed, not in any house, but in a place called Runnymede, between Windsor and Staines; but it was not merely by an accidental meeting of two armies at that place that this act was done there, for it appears by Matthew of Westminster that Runnymede was a place where treaties concerning the particulars of the charter were transacted and some parts so solemn with great solemnity. The memorable day was June 5, 1215.

What was unwillingly granted, it could scarcely be expected would be religiously observed. A jointly appointed ecclesiastical body was constituted, and its first act of authority is, as would be expected, his son King Henry III., but the barons were watchful of their own privileges, those of the church, the cities, the boroughs, and of the people at large; and King Henry was led to make one or more solemn ratifications of the charter. To keep the rights thus guaranteed in the eyes of the people a copy was sent to every cathedral church, and read publicly twice a year.

See the work of Sir William Blackstone, entitled 'The Great Charter and Charter of the Forest, with other authentic Instruments;' to which is prefixed an Introductory Discourse concerning the Charta Magna, and the Magna Charta, 1899. The late Board of Commissioners on the public records caused to be engraved and published an exact fac-simile of the charter, from a copy preserved in the archives of the cathedral church of Lincoln, with other of the greater charters. They were the first volume of the 'Chronicles of the Realm,' these charters are all printed, with English translations of them.

MAGNA GRACIA, or MAJOR GRACIA (Livid. xxvi. 7; Justin, xx. 2), was used to designate the south of Italy, in consequence of the numerous and flourishing colonies which were founded by the Greeks in that part of the country. There is some difficulty in determining how far north this name extended; but it does not appear to have been applied to the country beyond Cumæ and Neapolis; and some geographers have thought, though without sufficient reasons, that it was confined to the colonies on the Gulf of Tarentum. Pliny apparently considers Magna Græcia to begin at the Locri Epizephyri (N. H. ii. 15); but Strabo includes within this name (vi. 175, Cassioport. 1587).

The time in which the name of Magna Græcia was first applied to the south of Italy is uncertain. It does not occur, as far as we are aware, in the early Greek writers. Herodotus, however, mentions the city of Sybaris, which is probably the same as Sybaris Epizephyri (ii. 126, B. Cassioport. and succeeding Greek and Roman writers.

Taking the name in the widest signification which is given to it by Strabo, Magna Græcia may be justly considered as an appropriate name; since it contained many cities for size, and population, as large as many cities for size, and population, as large as many cities for size, and population, as large as many cities for size, and population. The most important of these places were, Tarentum, founded by the Lucanians; Sybaris, Crotone, and Metapontum, by the Achaeans; Locri Epizephyri, by the Locrians; and Rhegium by the Chalcidians—all in Italy (ii. 126, B. Cassioport. and succeeding Greek and Roman writers.

MAGNENTIUS, commander of the Roman army in Gaul, revolted against Constantius, son of Constantine the Great, and emperor of the West, and caused him to be killed near the Pyrenees, a.D. 350. Constantius, the brother of Constantine, and emperor of the East, marched against Magnentius, and a battle was fought between them on the banks of the Iuveges, near Saintes, where Magnentius was defeated, led to Italy, from whence he escaped into Gaul, where Constantius followed him and defeated him again, a.D. 353. Magnentius, finding himself forsaken by his troops, killed himself; and his brother Decius, whom he made Caesar, followed his example. Constantius thus became sole master of the whole empire.

MAGNE'SIA. [ANATOLIJA.]

MAGNESIA. [MAGNESIUM.]

MAGNESIA, MEDICAL PROPERTIES OF. Oxide of magnesia, termed also, from the mode of procuring it, calcined magnesia, or magnesiausta, is an alkaline earth possessing the usual qualities of alkalies in their habits of action, such as, solubility in water, and the power of generating acids, and likewise the peculiar property of exciting generally purgative action of the intestines. This last-mentioned power gives it a distinctive character among alkaline remedies, as it can be employed, not merely to counteract the internal heat or burning sensation, existing from the presence of crude or undigested acid-yielding materials in the stomach. Its action as a purgative seems mainly to depend upon its meeting with acids in the stomach, and so forming soluble salts. When these are not present the magnesia remains undissolved, and if used repetitively may accumulate in the intestines, and become...
agglutinated by the mucous secretions, give rise to much uneasiness. [Antacid.] When however acidity exists, either altogether with constipation or diarrhoea, more particularly in children, from the milk disagreeing, or from a diet unsuited to the delicate organ of nutrition being formed upon them, magnesia is a very proper medicine, especially as it appears to possess a specific power of diminishing gastro-intestinal irritation. (Hufeland, quoted in Pereira’s *Materia Medica*.) It is generally expedient to add rhubarb to it, and when necessary cumin. In such cases of combination it is peculiarly useful in what is termed diarrhoea crupulosa, arising from too great a mixture or too large a quantity of food.

Where it is determined to use magnesia, and sufficient acidity is not observed in the stomach to ensure the formation of a soluble salt, a little lemon-juice may be added to it. The subcarbonate of magnesia has nearly the same action as the calcined magnesia, but when it meets with acids in the stomach effervescence takes place, accompanied with a discharge of carbonic acid gas, which in some cases is inconvenient, in other instances extremely beneficial. In some almost uncontrollable irritations of the stomach, where food and medicines are alike rejected, subcarbonate of magnesia is of use both in the stomach and by assimilation, and all other remedies are said to be superseded by its employment. Both the subcarbonate and the calcined magnesia are much used to correct heartburn, and to check the lithic acid diathesis; but their employment requires much judgment and attention. [Stokes.]

**Sulphate of Magnesia, or Epson Salts,** in the ordinary form, as met with in the shops, are small acicular crystals. This renders them liable to be confounded with those of oxalic acid, to avoid which the sulphate may be dissolved, and by recrystallisation from ammoniacal or nitric acid, or by other means, large crystals, or prisms, or four-sided pyramids. The taste of sulphate of magnesia is bitter and very unpleasant; but this is very much lessened by large dilution in water, which at the same time increases the purgative action of the salt, or by giving it by: giving it by compound infusion of roses and adding a few drops of dilute sulphuric acid, which augments the refrigerating property of the medicine. The addition of a little common salt to a solution of sulphate of magnesia increases its cathartic powers.

No saline medicine is so extensively employed as the sulphate of magnesia as a purgative; it is more rarely used as a diuretic or diaphoretic. Its action as a purgative is in general mild and certain, causing a considerable evacuation of the bowels both in the acute and chronic cases of diarrhoea and constipation. It is well adapted, in the treatment of dyspepsia accompanied with constipation. Many of the saline mineral waters referred to for the cure of indigestion are chiefly indebted to the sulphate of magnesia for their purgative properties.

Sulphate of magnesia is a convenient antitoxine in cases of poisoning by the salts of lead or baryta.

Magnesia limestone is sometimes employed for building, and is a very durable stone: it is however one of the most delusive stones for masons to hew, as the gritty particles very speedily occasion disorders of the lungs, followed by cough and asthma. One who has breathed the workmen who should therefore always be defended by wearing a gauze mask.

**MAGNESIAN LIMESTONE,** in English geology, a formation of the paleolithic or new-sandstone system; also the name of a group of limestone beds, which constitute the principal part of that formation in the county of Devon, and give a notable quantity of magnesia in their composition. Details regarding the formation will be more usefully combined in the account of the system of which it constitutes the base. We shall therefore confine ourselves in noticing of the limestone.

This rock is seen to greatest perfection in England between the rivers Tyne and Tees, between the rivers Wharf and Dun, and between this last river and Nottingham. We mention these parts of the great line of magnesian limestone beds which are seen in this part of the world for the sake of pointing out some interesting differences in the composition and other characters of the rock. It is in the middle part of the course here indicated, from north to south, that the stratification of the rock is most developed. Between the Dun and Wharf, and for some space north and south of these rivers, this limestone occurs, in fact, in two rocks of very different origin, one being a red sandstone, with gypsum (indistinguishable from some of the upper or Keuper marls of the red-sandstone formation), but in the northern and southern parts this difference does not obtain. Of the two limestones thus separated, the upper one has been called the magnesian limestone, and the lower one the chertaceous limestone (Yorkshire), the lower one is almost uninterrupted from beyond the Tyne nearly to the Trent. The upper rock is about 12 yards thick; the lower one reaches 50, or perhaps in some cases 100 yards; the upper one contains almost no shells, the lower contains numerous shells, burnt in agriculture; the lower one is very often composed of atomic aggregations of carbonate of lime and carbonate of magnesia, and, both as stone and when burnt to lime, a more useful in building. Its mode of aggregation varies extremely, many situations (Whorley Bank in Yorks, etc.) it is a soft powdery stone traversed nevertheless by veins of calcareous spar; about Tadcaster, and generally between the Nid and the Dun, it is a firm though hardly compact traversed by sparry veins and full of irregular crystallized cavities. The crystals are generally carbonate of lime, sometimes mixed with oxide of iron. In a few cases sulphate of barytes appears in the form of veins dividing this rock, as at Huddleston, near Ferrybridge, &c. It is seldom entirely this way, and in many cases (sometimes apparently epigenic, on sulphuret) lined the joints of the rock, about Newton Kyne, near Tadcaster, and in other places.

Some of the best building-stone of this description is on the east side of the river Humber, at Boddington, Broadworth, and Warmsworth, and it is generally ready or nearly an atomic combination of carbonate of lime and carbonate of magnesia. (This fact was communicated to us by the late Dr. Henry of Manchester.)

A particular state of arrangement of the materials of the rock is noticed in several localities between the Aire and the Dun, where the rocks assume locally and for limited areas the oolitic texture; and, finally, as one of the most valuable building-stones in the range of the magnesian limestone, and sometimes very finely crystallized, from Bawtry to Nottingham, in which that noble ruin has stood the ravages of time better than almost any 'freestone' of the north of England.

Further south, the grain of the rock changes; it becomes continually more and more crystalline, and from Bawtry to Nottingham the magnesian limestone may be described with little inaccuracy, as a real dolomite, partially deprived by small admixtures of sand. The small rhomboedral crystals which are very evident in specimens which we collected many years ago at Mansfield Woodhouse and near Nottingham.

A crystalline structure of the magnesian limestone rock is however not confined to the southern portion of its range, though there it is manifested in connexion with very marked qualities in architecture. In the county of Durham, we find it exhibited in the purely calcareous rocks of Hartlepool, near Hastings, in the romantic, contorted, and broken cliffs and pinnacles of Marsden, and in the singular coralline quarries of Building-hill at Marsden it is easy to notice in near contrast, in the cliff, the flexible laminated limestone, and in the detached pinnacles an equally laminated rock traversed by complete planes of crystalline structure. It is a very interesting rock to notice, not only for its structure, but also for the fact that, since its deposition in the sea, the part of carbonate of lime has been subject to a new molecular arrangement, which, predominating over the original structure, has readjusted the particles and generated a new crystalline structure. The particles are bridge-connected, and seem to require the hypothesis of the deposited portions of previously indurated magnesian limestone beds. Thus various are the aspects of the mineral aggregation of the magnesian limestone of England. These differences belong almost exclusively to the upper laminated non-magnesian portion is usually a uniform close texture, except in the lower beds, which are somewhat cellular (and of little value to the limeworkers) at Knottwood.

It should be added that the general colour of the magnesian limestone (lower portion) is white, yellow, rich pale.
brown, or reddish, while the upper rock is commonly of a grey, smoky, or purplish hue. This rock is usually interstratified with thin clay partings, the lower one very rarely. The specimen of carbonatite stone is usually greater than that of common carbonate of lime. This however may be overlooked in the usual incomplete mode of trying such experiments, unless the mixer makes the easy correction due to the absorption of water by many of these rocks (for example in porcelain or glass, in this process), the magnesium limestones of England betray, by their weight, their affinity to the dolomitic rocks of the Alps and the Eifel, though the introduction of the magnesium is probably not at all due to the same cause in the two cases.

I feel admirably satisfied that we stand on the 'Geological Transactions,' on the Magnesian Limestone, has pointed out clearly the most common organic fossils of this rock. We shall only observe here that in respect of fossils (Paleontogen., etc.) mollusca (Prosuctus, Spisura, etc.), and zoophyta (Retepora, etc.), this rock shows an extreme analogy with the carboniferous system. Its place, by mineral analogies, may be rightly fixed in the peculier system; but, by the affinities of organic existence, it will be classed with the most ancient rocks. Let any one, for example, contrast its marine fossils, whether derived from Durham, Yorkshire, or the Thuringerwald, with those of the muschelkalk; the former are seen to be analogous to forms common in the mountain limestone, the latter to those of the Magnesia limestones. So, it is not surprising that the plant fossils which are most characteristic of this rock are known in the magnesian limestones of England and on the Continent. The species are not identical, but the result above announced is unequivocal, and must soon be felt in geological classification.

(From the Geol. Trans.; Smith's GeologiCal Map of Yorkshire, etc. Notices of contemporaneous deposits in the midland and southern counties of England occur in Mur- chison's Silurian System; Coneybear and Phillips, Geol. of England and Wales, etc.)

Magnesium, a peculiar metal, of which magnesium is the oxide, a substance that was originally sold under this name by a Roman canon in the beginning of the eighteenth century. It is stated to have been first procured by calcining the residue left after evaporating the mother-waters of brine, to which by which it is at present obtained will be presently stated.

The existence of magnesium was first demonstrated by the electro-chemical researches of Sir H. Davy: he found that when moistened, magnesium was negatively electrified with mercury, and an amalgam was obtained which decomposed water and gave rise to magnesium, by the oxidization of the peculiar metal amalgamated with the mercury; but he did not however obtain a sufficient quantity to enable him to determine its properties, and the M. Bunsen, by decomposing chlorides of magnesium by means of potassium. This was effected by placing some small pieces of potassium in a glass tube, with fragments of the chloride put over them; this was fused by the electric current, and the best result was obtained by running through it by slightly inclining the tube; light was evolved, and the mass, when cold, was washed with water, which dissolved the chloride of potassium formed, and left the magnesium united in the state of small globules.

Magnesium is of a white colour, like silver; its lustre is metallic and brilliant, it is very malleable, and fuses at a red heat; in dry air it undergoes no change, but in moist air it is superficially oxidized; it may be boiled in water without suffering any change, and in water heated to redness, but in oxygen gas it burns brilliantly, and, combining with oxygen, becomes magnesium. In chlorine gas it burns spontaneously. It dissolves in diluted sulphuric and hydrochloric acids, with the evolution of hydrogen gas, and it is oxidized and dissolved by dilute nitric acid, and nitrate of magnesium results.

Oxygen and Magnesium, from what has just been stated, combine very readily, but only in one proportion; and the resulting oxide of magnesium, in diverging leaves, which in this which this substance was first obtained has already been mentioned. It is now procured by decomposing sulphate of magnesium by means of carbonate of soda, and subjecting the washed and dried carbonate precipitated to a strong heat, in order to cause the water of crystallization therin contained to be expelled, and the magnesium, or oxide of magnesium, remains, which has the following properties: it is colourless, inodorous, and tasteless, if pure; it does not, like lime, become hot when mixed with water, and it is very nearly insoluble in it, although when moistened it exhibits the alkaline property of turning vegetable yellow brown; by exposure to the air it attracts carbonic acid, and is recomposed to the state of water with some heat. It appears, from indirect experiments, to be composed of

1 equivalent of Magnesium 12
1 equivalent of Oxygen 8

Equivalent 20

Chlorine and Magnesium act readily upon each other, the metal burning spontaneously in the gas; it may also be procured by burning dry chlorine gas over a mixture of Magnesia and a powdered porcelain tube. According however to Liebig it is best obtained by dissolving magnesium in hydrochloric acid, evaporating the solution to dryness, mixing the residue with an equal weight of hydrochlorate of ammonia, and projecting the mixture in small portions at a time into a red-hot platinum crucible. When the ammonical salt has been expelled, fused chloride of magnesia remains, which on cooling becomes a transparent colourless mass; it is inodorous, intensely bitter, very deliquescent, and soluble both in water and alcohol. This salt is one of the saline ingredients of sea-water, and exists in the bittern left after preparing common salt, mixed with sulphate of magnesia. It is also found in some mineral waters, and was formerly called magnesite of magnesium.

When a solution of chloride of magnesium is concentrated by evaporation, and exposed to a very cold atmosphere, it yields deliquescent prismatic crystals which contain much water.

It is applied to no direct use; sometimes however the bittern which contains it is decomposed by an alkaline carbonate, for the purpose of forming carbonate of magnesia. It consists of

1 equivalent of Magnesium 12
1 equivalent of Chlorine 8

Equivalent 48

Bromine and Magnesium may be obtained in combination by dissolving magnesium in hydrobromic acid; by evaporation small acid crystals are formed which have a sharp taste, are very deliquescent, and soluble both in water and alcohol. When heated in the air these crystals are resolved into hydrobromic acid and magnesium bromide.

Flourine and Magnesium unite when magnesium is dissolved in hydrofluoric acid. The compound formed is insoluble in water, or in hydrofluoric acid, and is not decomposed by a red heat.

Carbon and Magnesium.—No compound of these is known.

Sulphur and Magnesium do not combine when heated together, nor is a perfect sulphuret formed when sulphur is heated with magnesium. The compound is not soluble in water; by heat the sulphuret is set free. Whenever a solution of sulphuret of barium is added to one of sulphate of magnesium, then, according to Berzelius, sulphate of barium is precipitated, and sulphuret of barium remains in solution.

Iodine and Magnesium.—A compound of these is obtained when magnesium is dissolved in hydroiodic acid; it is very soluble in water, and known only in solution. It is stated also that when magnesium is heated with iodine in water, both iodide of magnesium and iodate of magnesium are procured.

Manganese, or Oxide of Magnesium, combines with most acids to form salts, two of which are of great importance in medicine; but we shall first mention the

Hydrate of Magnesia.—This is a saline compound, and was first discovered in serpentine in New Jersey, and since in U.S. It is white, with a greenish tinge, foliated, and easily splits into thin flexible lamina. It has a pearly lustre, translucent on the edges. Specific gravity 2.35; hardness 1. It is stated to occur at Hoboken, in New Jersey, in changing needleform crystals. It is composed of about 31 water and 68 magnesia, with a little oxide of iron and manganese; these are nearly in the proportion of one equivalent each of water and earth.

Hydrate obtained may be obtained artificially by precipitating a solution of the sulphate with soda. The precipitate, after drying at 120°, retains about one-fourth of its weight of water.

Nitric Acid and Magnesia readily combine, and yield nitrate of magnesia. The solution is colourless, and ex-
tremely butter. By evaporation it yields, though with diffi-
culty, rhombic crystals, which contain a large quantity of
water, and are very deliquescent. It is decomposed at
a red heat, and is sometimes found in crude nitre. The
anhidrous crystals are composed of

1 equivalent of Nitric Acid 54
1 equivalent of Magnesa 20

Equivalent 74

It is now applied to no use, but is the salt from which
magnesia was originally obtained.

Carbonic Acid and Magnesia form carbonate of magnesia,
and it has been found native in New Jersey. It has a yel-
lowish white colour, with a flat conchoidal and sometimes
earthly fracture. It is opaque, faintly vitreous, hard and ex-
crude, but so weak as not to resist the ordinary action of
beating. Specific gravity about 2 2 to 2. The purest
was found by Klaproth to consist of carbonic acid 49, and
magnesia 48, with 3 of water. It may therefore be con-
sidered as composed of very nearly one equivalent of acid
and one of oxide.

Carbonate of magnesia, or rather a compound of car-
bonate and hydrate of magnesia, is artificially prepared for
medicinal use by decomposing the sulphate of magnesia by
means of carbonic acid, and is used in an insoluble white powder. This substance,
when pure, is colourless, odorless, tasteless, and unalter-
able in the air; it is decomposed by the stronger acids with
effervescence, and by heat the carbonic acid is also ex-
pected. It is therefore composed of 4 equiva-

lents of hydrolated carbonate of Magnesia 204
1 equivalent of bilydrotated Magnesia 39

Equivalent 242

Sulphuric Acid and Magnesia constitute the salt long and
well known by the name of Epsom salt, having been first
obtained from a spring at that place. Sulphate of mag-
nesia, which is its proper name, was afterwards obtained by
evaporating and crystallizing the bittern remaining after
pumping iron acids from seawater. It was mixed with
so much chloride of magnesia that it was extremely liable
to become damp. The late Dr. Henry invented a very
ingenious process for preparing it from magnesium
magnesite, in which this inconvenience and impurity are
totally avoided.

Sulphate of magnesia is a salt which crystallizes very
readily; and although the crystals are usually small, they
may be obtained of considerable size by slowly cooling a
large quantity of the solution. The primary form of the
crystal is a right prism, with a rhombic base. This salt is
extremely brittle, readily soluble in cold water, which dis-
sicers an equal weight, and boiling water one-third
more. It is but slightly altered by exposure to the air, yet
is rather inclined to efflorescene. It is not decomposed by heat,
but the water of crystallization is expelled. It is composed of
1 equivalent of Sulphuric Acid 40
1 equivalent of Magnesia 20
7 equivalents of Water 63

Equivalent 123

It is extensively employed as a purgative, and for the
preparation of magnesia and its carbonate.

This salt combines with various others to form double
salts: as, for example, with sulphate of ammonia, of potash,
and of soda, forming the ammonio-sulphate, the potash and
do sea-salts of magnesia, which are all crystalline salts,
but they are not important.

Phosphoric Acid and Magnesia are best obtained in com-
bination by mixing concentrated and hot solutions of sul-
phate of magnesia and phosphoric acid, after some hours
of crystals of the phosphates are obtained. They effloresce
slowly in the air, and are soluble in fifteen times their
weight of cold water, and by hot water they are decomposed
into a subsalt which is insoluble, and an acid one which
remains in solution. The crystals are composed of
1 equivalent of Phosphoric Acid 36
1 equivalent of Magnesia 20
7 equivalents of Water 63

Equivalent 119

This salt is applied to no use; combined with ammonia it
forms the ammonio-magnesic phosphate, a compound
which exists in urine, and is a common ingredient in urinary
calculi. [CALCULUS.]

Magnesia forms a great number of double salts, and one
of these, the magnesium, which is a double carbo-
nate of lime and magnesia, is found in immense quantities
in different parts of England. [MAGNESIUM LIMESTONE] Magnesia exists also in a
great number of mineral bodies

as antique, tusk, asbestos, etc.

Magnesia salts are mostly soluble in water; by the
addition of soda they yield hydrate of magnesia, and by add-
ing carbonate of soda, hydrated carbonate of magnesia.

The metal is obtained by carbonizing the magnesia with
no precipitation in solutions of magnesia salts, until heat
so as to repel the excess of carbonic acid. Phosphate of
soda added to magnesia solution gives no immediate pre-
cipitate, but on the addition of ammonia an extremely
minute white precipitate of magnesium phosphate is formed; and this
is the best mode of testing the presence of magnesia, when
the requisite precautions are adopted.

MAGNET (derived from the Greek μαγεστρον) is a metallic
body possessing the remarkable property of attracting one
and some other metals. It is still not taken abundantly near Magnesia in Lydia, from which
circumstance its name may have been derived. The attractive
power of the magnet was known at a very early period
as references are made of magnets in Ptolemy, Pliny, who states that ignorant people
called it ferrum virum, or quick-iron; a name somewhat
analogous to our load-stone. The same author appears
to have been acquainted with the power of the magnet in
ancient times; similar properties present themselves in
Polybius. When found native, it is generally a heavy ferruginous
of a dull greyish colour, but the ores of cobalt and nickel
also frequently possess the magnetic properties.

The universal law, that reaction is consistent with action,
implied in the notion of magnetism must rest on the find
in fact, that if a piece of iron is fixed, and a small
magnet be suspended by a string near it, the magnets
then be moved towards the iron; thus all the iron
the mass of the globe acts upon a magnet. It is to
now known that the magnetic force of the face of the bodies [ELECTRO-MAGNETISM]; while heat has an in-
fluence on magnetic intensity. Hence it follows as a
mechanical consequence, that if a magnetic needle or cylinder be sus-

tended by its centre of gravity, so as to be free to move
down, and that point, its position as with unmagnetized bodies, but may take a spe-

cific direction, namely, that which represents the resultant
all the magnetic forces to which it is subject. Its pos-
tion in a given place can be defined by two angles, the
the general term is called the inclination, the other the dip.
The first is the angle formed by the vertical plane in which
the needle lies with the plane of the meridian; the second
the inclination of the line of the needle to the plane of
the horizon. The declination is, where the compass is sus-
ing it horizontally on a point which is necessary
different from its centre of gravity, and the variation is
the angle made by the direction of the needle with that
of an exact and horizontal north-and-south line. This
practical distinction is called its polarity, and is a conse-
quence of its other properties above noticed; the fact, how-
ever, escaped the notice of the Greeks and Romans of ant
but the Chinese appear to have been acquainted with
from a very remote date. It is the most useful of the
known properties of the magnetic force of the earth to
the mariner, when the magnet is construct-
in the form of the compass-needle.

Dr. Gilbert, who was physician in ordinary to Queen El-
izabeth, and in 1600 published a treatise on mag-
netism, and to some extent inculcated the idea of
gravitation, by comparing the earth to a great magnet.
His theory on this subject is given in a work entitled
Philosophical Letters on Magnetism, which has been published in 1600.
Gilbert bestowed much sentiment on magnetism, and to some extent inculcated the doctrine of
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Philosophical Letters on Magnetism, which has been published in 1600.
formation must speedily have led to the discovery of its variation, and the 'discovery of the needle's motion' was by Hooke, it is distinctly assigned to that celebrated man; and though its amount in 1492 must have been small in France, Spain, etc., yet it was doubtless a very observable quantity in many of the regions visited by Columbus, both in the regions of magnetic variation in 1506, and in the year 1529, but on very doubtful grounds. When its amount came to be observed with some accuracy, we find it at Paris, in 1524, 74° $E$; in 1550, 84° $E$; in 1580, 114° $E$; in 1630, 49° $E$; and at Rome, in 1760, 26° $W$. At the present moment it has passed its maximum in London, and is now moving easterly.

It is not improbable that Columbus was acquainted also with the diurnal variation, but nothing very accurate on this subject was known before the numerous and valuable observations made by Canton in 1770. He showed that the needle vibrates, during the day and the night, through as great as 134° in the midsummer, the minimum 7° occurring in the winter season; he ascribed the diurnal variation to the action of solar heat affecting the intensity of the magnetic equator, the tangent of the dip being double the magnet of such latitude. Mr. Barlow has illustrated this law by experiments on magnetized iron balls acting on needle needles at the surfaces; and Biot has deduced the same law from theory.

The law of the magnetic forces was a long time undiscovered: Newton supposed it to follow the inverse cube of the distance, or some higher power: for in his experiments, the variation of intensity and the effect of the mutual influence of the magnetic fluids in the bodies themselves being equal, it was necessary to have some very delicate experiments. A very simple law relative to the amount of the dip at different parts of the earth's surface was remarked by professor Krafft, of St. Petersburg, in 1809; namely, if we measure the latitude from the point of the greatest amount of the earth's magnetization, the sine of the dip is $\frac{1}{\cos \theta}$.

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One essential property by which a magnet differs from soft iron under the magnetic influence, is this: if we separate a magnetic bar into any number of minute parts, each such part will be endowed with polarity, similar to the whole; the position of those poles, or forces, or needles, is permanent in a magnet of a given form; but in soft iron it will change when the distance of the iron from the influencing magnet is altered.

Halley was sent out, under William and Mary, with the command to view the magnetic needle at different latitudes, both in the Atlantic and Pacific (1658-9); and was the first who constructed a magnetic chart, which possessed at the time great merit for accuracy: the most valued at the present day are those by Hansteen, compiled from the surveys made by various scientific travellers and naval men, such as Humboldt, Ross, Parry, Scoresby, etc.

[**Magnetism.**]

During a thunder-storm, the poles of a magnet are frequently inverted, the explanation of which belongs to the thermo-electric theory. The appearance of the aurora borealis is often attended with vibrations of the compass-needle, to the extent of several degrees. The actual mode in which the aurora is produced being still unknown, it is impossible to decide whether the aurora is itself the cause of the magnetic variation, or whether both are attributable to some unknown common cause.

**Magnetic Intensity.** When a magnetic needle is freely suspended by its centre of gravity, it is then acted on by all terrestrial bodies containing the magnetic fluids, whether in a fixed state, as in lead-stone ores, or in a state susceptible of change, as in masses of soft iron, and also by electrical currents, whether produced by the chemical changes which various substances in the globe continually undergo, or arising from the unequal distribution of heat between the earth and the atmosphere at different latitudes. The direction of the resultant of all such forces may be regarded as possessing parallelism throughout the extent of the needle, and the latter acquires in consequence a like direction in the plane of the magnetic meridian, of which the position becomes this manner known.

If a needle thus suspended be made to oscillate in the plane of the magnetic meridian, and the time in which a certain number of oscillations are performed be observed, and thus the time of a single oscillation deduced, the connection of this time with the intensity of the magnetic force is expressed by the formula $I = n \sqrt{\frac{L}{g}}$, similar to that used for the common pendulum. In this equation $n$ represents the time of one oscillation, $T$ the number $3 \times 14159$,

the distance between the centres of oscillation and gravity, and $F$ the accelerating force of magnetism. Hence we deduce also $F = \frac{1}{T^2} \cdot \frac{L}{g}$; consequently when one and the same needle is used in different experiments, the force $F$ is inversely as the square of the time $T$ of one or of a given number of oscillations, then $F$ is inversely as the time, and it is in practice extremely difficult to produce oscillations in the magnetic meridian, and ingenious contrivances to that end have often been suggested and used, but the object of ascertaining the relative value of $F$ is equally attained by supporting the needle horizontally, as in the compass, and observing the time of the horizontal oscillations. If $\theta$ represent the dip, then by the resolution of forces the horizontal part of the magnetic force is $F \cos \theta$; if now $n'\theta$ represent the time of (suppose 300) oscillations, then $n'\theta = 3 \times 14159$, and we must have $F \cos \theta$ inversely proportional to $\theta$; let $F' \theta', T' = \sin \theta$, $T' = T \sin \theta'$, then quantities corresponding to $F', \theta', T'$, for a different latitude or longitude, then $F' = F \cos \theta'$, by which formula the relative intensities of terrestrial magnetism at different places may be ascertained with little trouble.

The times of 300 oscillations in seconds at the following places are taken from a table computed by Hansteen:--

<table>
<thead>
<tr>
<th>Place</th>
<th>Time (sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stockholm</td>
<td>815</td>
</tr>
<tr>
<td>Edinburgh</td>
<td>620</td>
</tr>
<tr>
<td>Oxford</td>
<td>780</td>
</tr>
<tr>
<td>Danzig</td>
<td>770</td>
</tr>
<tr>
<td>Hamburg</td>
<td>812</td>
</tr>
<tr>
<td>Liverpool</td>
<td>801</td>
</tr>
<tr>
<td>London</td>
<td>775</td>
</tr>
<tr>
<td>Berlin</td>
<td>760</td>
</tr>
<tr>
<td>Paris</td>
<td>753</td>
</tr>
<tr>
<td>Lübeck</td>
<td>776</td>
</tr>
<tr>
<td>Altona</td>
<td>756</td>
</tr>
<tr>
<td>John-kruen</td>
<td>751</td>
</tr>
<tr>
<td>Christians</td>
<td>811</td>
</tr>
<tr>
<td>Ingolstadt</td>
<td>833</td>
</tr>
<tr>
<td>Copenhagen</td>
<td>876</td>
</tr>
<tr>
<td>Breslau</td>
<td>741</td>
</tr>
</tbody>
</table>

The locus of all the points at which the intensity of terrestrial magnetism is the same quantity as at one given place is called the *isodynamic line* passing through it. These lines are generally of double curvature, but neglecting this, which may also be said of the lines of equal dip, they run generally parallel to each other and to the latter lines, in the temperate zone, but in other cases these two classes of lines intersect at a considerable angle. M. Hansteen states that the intensity of magnetism is less in the southern than in the northern hemisphere. M. Biot, who has given a formula deduced from hypothetical considerations, which has been found nearly coincident with the observed cases of terrestrial intensity, viz., intensity $\alpha = \sqrt{(4 - 3 \sin^2 \theta)}$, being the dip as before.

As the declination and dip have diurnal variations, so also has the magnetic intensity; the minimum being between ten and eleven in the morning, and the maximum in about six hours afterwards. The intensity is also greatest in December, and least in June.
An interesting series of observations made by M. Que-telet, of Brussels, shows that in the gradual ascent from Géron impressions, to a given number of impressions, the magnetism increases; for instance, the horizontal intensity at the village Simpion is greater than that at Bonneville nearly in the ratio of 44 to 43.

Similar methods (and sometimes the balance of tension) have been used to discover the relative intensities of magnetism as distributed in bodies; in straight and narrow laminae it has been found by Coulomb to be nearly proportional to the square of the distance from the middle plane.

MAGNETISM. If we take a natural or artificial magnet, and, spreading over a piece of paper a quantity of fine iron filings, place the magnet on the paper, on taking it up, we shall find that the iron filings are attached to it in some degree over all its surface, but they will be principally accumulated at two points situated near the ends of the magnet; these points are called the poles of the magnet. Sometimes when a magnetic bar is rolled amongst iron filings, we may find several such points along the bar; the magnet is said to have constrictive points. At present we shall consider only the first or simple case of two poles, which we may represent by the letters N and S. When a needle formed of this material is suspended horizontally on a pivot formed with these two points, it will deviate only north and south. [Magnet.] The pole N, at the north extremity of the needle thus adjusted, is commonly called the north pole of the needle; the other, S, the south pole, though the contrary names, as used by Dr. Black, are more correct in connection with the theory of magnetism.

If we now bring a piece of soft iron near the pole N, it will be attracted to that pole and become attached to it, so that the exertion of a mechanical force is necessary to separate them. In this way a needle held vertically will sustain a piece of iron, provided the weight of the iron does not exceed the magnetic force. The pole S has a similar attractive power on iron; the cause of this attractive power is called Magnetism.

We have seen that in a magnetic needle placed horizontally on a pivot, the pole N is turned northwards, and S southwards, nearly: if such a needle be attached to a piece of cork floating on water, it will adjust itself to this direction, the deviation of which from the true north and south is the deviation of the needle. If now we invert the position of the needle, so that S is brought into the place previously occupied by N, and vice versa, the needle and cork will make a complete revolution, and acquire the position of a needle distant from both the magnetism predominant at N and at S; the former is called Austral, and the latter Boreal magnetism.

It will be easy to observe the analogy between the mutual relations of the two magnetisms, and those of positive with negative electrified bodies.

We must insulate a conducting electrized substance in order to preserve its electricity, but this is not necessary in the case of a magnet; each fragment of the latter is itself a magnet, possessing its north and south poles, and the same view may be extended to its united particles. A nonconducting energy, called the coercive power, exists therefore in magnetic substances, by which the loss of magnetism when developed is prevented, and by which also the poles N and S are situates in a determinate position relative to the body. This is not the case with soft iron, which has not the coercive force.

The force of magnetism is exerted without alteration through substances which are not magnetic; the same is true with respect to the electrical fluid when it is nonconducting bodies. The action of the force between the poles of a magnet is the result of their attraction. On the other hand, the effect of the magnetic forces is considerably modified when substances which are capable of becoming magnetic by influence are situated near the magnet; and a similar place is then assumed by the neutral electricities when under the influence of an electrified body. [EleCTRiCITY.] The transmission of the magnetic force through interposed bodies may be observed familiarly by placing a common sewing-needle on a smooth horizontal board, and moving a strong magnet underneath the board: the needle will roll or revolve along the board according to the peculiar motions given to the magnet.

Let us next consider the action of magnets on each other. For this purpose make two magnets or magnetic needles to float on water, distinguishing the poles of one as before by N and S, and of the other by N' and S'. Bring either of the magnets to the surface of the water, and the magnets will separate to a greater distance, and with the greater energy the nearer these poles are placed to each other. On the contrary, if we bring N and S' near each other, the needles will approach and unite those points, and the same happens when the poles N' and S' are made contiguous: hence this law—magnetisms of the same name are mutually repulsive; those of contrary names are mutually attractive. In the article ELECTRICITY, we have shown that the same law is true with respect to the two electricities.

The mass of the globe contains various sources of magnetism (Magnet), and since a magnetic force freely suspended assumes a determinate position, it follows from this law that the magnetism at the south extremity of the Boreal, that is, of the same name as the terrestrial magnetism which is predominant in the northern hemisphere, being repelled theretfrom; and the magnetism at the north extremity is for a like reason Austral. The law of magnetic force at different degrees is expressed by the square of the distance: the best mode of verifying this law is by observing the times of the oscillations of a small fine wire, suspended in a plane perpendicular to the magnetic meridian (in order to neutralize the magnetizing influence of the earth), and subjected to the action of a powerful magnet.

We can, by combining these laws, explain the manner in which soft iron, cobalt, and nickel are attracted or suspended to the needle. These metals contain both the austral and boreal magnetism in a combined state, in consequence of their want of coercive power. When a piece of soft iron is brought near the pole N, which contains the austral fluid, the austral magnetism of the iron is repelled to the boreal extremity: the new boreal attracted to the nearer extremity of the iron relative to the point N; this disposition of the fluid takes place immediately, and the law of force above announced relative to the distances causes the attraction of the fluid at N, on the other hand, and repulsion of the soft iron. The austral fluid, which is more remote from N: the total effect, in virtue of this excess, is therefore necessarily attractive. When the iron however is removed from this influence, its natural magnetism again recombine. This will not be the case if, instead of soft iron, we applied a steel; the decomposition of the natural magnetism takes place with greater difficulty, in consequence of the coercive power which protects their actual disposition; but if we apply a powerful magnet at one extremity of a single needle, and then, or, which is more effectual, at one extremity of a needle at both extremities, the north pole of one and the south pole of the other being brought in contact with the needle, the decomposition will be partially effected, and will likewise be more or less in a proportionate degree; and again, the decomposition is more complete; and agreeably with the magnetic laws of repulsion and attraction, that point of the needle in contact with the south pole will become a north pole of the needle, and the other a south pole. This method of producing magnetism is liable to the objections both of producing feeble magnetism and also producing consecutive points.

The quantities of the austral and boreal magnetic fluid in all magnetic bodies are equal; for when we bestow magnetic qualities on iron or steel by the influence of loads, c., and then suddenly cut off the influence, or, no new magnetism is communicated; but the natural magnetism, which previously neutralized each other, are now decomposed. Again, if a magnetic needle be freely suspended by its centre of gravity, the action of the magnetic fluid upon it will impose a direction on the magnetic axis; now all the boreal fluid in the globe attracts all the austral fluid of the needle, and vice versa, while the like fluids in both repel; thus the natural progression would be given to the resultant of the repulsions of the needle was exactly equal and of an opposite direction to the resultant of all the attractive forces; and the rotatory motion of the needle shows that the points of application of these forces and differences; but the intensity of terrestrial magnetism may be regarded as uniform throughout the extent of the needle, and its direction parallel. In order therefore that the resultant should be equal and contrary, the sums of i' austral forces of the needle
must be equal. In this respect magnetism resembles the natural electricities of all substances.

The development of magnetism in bodies, whether by terrestrial action or the influence of lodestones, is analogous to the decomposition of the natural electricities in a system of resistive bodies by induction; under the influence of an external body and their own natural action: hence when magnetism is communicated by a lodestone, even when in contact the latter loses none of its own magnetism, as it acts solely by influence; whereas in connection, electricity is transmitted, for the coexistence of two opposite poles of two lodestones, found that they were acted on by the latter. This phenomenon is attributable to the existence of minute quantities of iron or or compounds in those different bodies. The intensity of the magnetic action Coulomb found from direct experiments to be proportional to the quantities of iron contained in the bodies, and he afterwards applied this principle to discover the quantity of iron contained in impure metals.

From the preceding observations on the properties of the magnetic fluids it will be easy to understand the principles of the interposing pieces of soft iron introduced to the effect produced when the fluids are found, which we shall now briefly notice. The earliest method of magnetizing a bar of hard iron or steel was by drawing it throughout its whole extent at right angles over one of the poles of a strong magnet. In this double magnetization the central part of the bar is so strongly magnetized that the poles of the bar are subject to a similar decomposition of their powers, but if we direct the weaker magnetization in the opposite direction neutralizes the succeeding, except at the extremities; the magnetism thus developed is therefore feeble, and apparent only at the extremities of the bars, or in some consecutive points formed by peculiarities in the material of the bar.

Dr. G. K. May improved the mode of magnetizing bars in the following manner: he joined two strongly magnetized bars by their ends bearing contrary names, and placing them in the direct line of their lengths and the middle of the bar nearest to the heat, with its middle on the point of junction of the magnetic bar, he made each of them rub on the corresponding extremity of this steel bar, and the latter when removed was found to be strongly magnetized. In this method not only does the union of the two cards in a thin bar the interposing fluid bar, but the decomposition of the magnetic fluids, but the intensity of the action of the magnetic forces is greatly increased by the elevated temperature of the steel bar.

Du Hamel placed two steel bars of equal length parallel to each other, containing exactly the same pieces of soft iron interposed; then taking two bundles of magnetic bars, he united their poles of contrary name near the middle of one of the steel bars, and by inclining the bundles made one of them pass towards one extremity of the other bar, the second bar, the second bar then successively repeated the operation, when both the steel bars became strongly magnetized, but with contrary magnetizations at the corresponding extremities of each. In this method the decomposition of the neutral magnetisms of the interposed pieces of soft iron tends to the effect produced by the contact of the magnetized bundles with the steel bars.

Epinus, adopting a similar method, preferred interposing small magnets instead of soft iron in the relative positions of the poles of the steel bars he desired: Coulomb combined the advantages of these different methods by composing his magnetized bundles of bars at a cherry-red heat. A fine steel needle may be very strongly magnetized by being placed in a wire two turns of which are coiled about a helix, the extremities of which are brought in contact with the wires of a powerful galvanic battery. The poles of a bar magnetized to saturation are near its extremities, within generally a few lines, while the intensity becomes insensible in proportion to the distance of the bar; in a needle, the intensity may be represented by the difference of the ordinates of two logarithmic curves, the origin of one being at the austral, and of the others at the boreal extremity of the needle.

When bodies containing neutral magnetisms are made to rotate rapidly round an axis, the magnetism becomes developed and acts on the needle; thus a plate of copper made to revolve rapidly in a horizontal plane will influence a compass-needle placed over it, and produce in it a rotation in the same direction, on which subject several valuable ob-
MAG 290 MAG

observations have been made by M. Arago, Sir John Herschel, &c. It has also produced a second mathematical memoir from M. Poisson, in which the mechanical force generated by rotation is introduced into the general equations deduced from his theory of the distribution of magnetism in bodies.

The consideration of the distribution of magnetism throughout the globe has led to various explanatory hypotheses since the time of Halley; the position, the number, and the motions of the points which may be regarded as poles of magnetism, has been the subject of the most ingenious discussion and of opinions formed on inconclusive grounds. The excellent tables and maps of Hansteen have given a greater degree of certainty to this subject. The French government has lately sent out an expedition for the discovery of a great magnetic north pole, which may be shortly expected; and the British government having appointed Captain James Ross with a view to similar objects in the Pacific, we shall refer to the article Territorial Magnetism.

For the mathematical theory on this subject—the Memoirs of Poisson; Ampère's Electro-Dynamic Treatise; and Murphy's Electrodynamics, chap. viii., Cambridge.

With respect to the construction of artificial magnets, see Brown's Phil. Trans., 1714-23; Miechell On Artificial Magnets, London, 1750; Cavallo On Magnetism, London, 1766; Brewer, in Encyclopaedia Britannica, last ed.; and Barlow, in Encyclopaedia Metropolitana; and Sowerby On Magnetism.

MAGNETISM, ANIMAL. [ANIMAL MAGNETISM.]

MAGNETISING POWER. [MICROSCOPE; TELESCOPE.]

MAGNITUDE. This term is generally used synonymously with magnitude, and is sometimes even confused with magnitude. The distinction between the two first terms is not more marked than this:—he who answers the question 'how much?' describes the quantity, and he who answers 'how great?' describes the magnitude. But since magnitude is a quality or property, and not an idea, as applied to space, we may best describe our own idiom by laying down quantity as the general term, and stating magnitude to mean usually the quantity of space. The term magnitude must be considered, in a mathematical point of view, as arising from the magnitude of our sensory idiom of measure, and it is the mental and moral idea which is grasped by him, not particularly as applied to space, but also to everything which admits of the introduction of the notion of greater or less. In this sense then, we have many magnitudes (all moral qualities for instance) which are not the object of mathematical science, and about which we have no notion of magnitude to our conception even of things which we cannot measure, that we borrow idiom from subjects within the province of mathematics. Thus we speak of the size of a thing, and of it being greater in one individual than in another. According to the definition of magnitude, namely, 'that of which greater or less can be predicated, when two of the same kind are compared together,' it follows that we include both mental as well as material objects of comparison. But the mathematician imposes the postulate that no such object can be made matter of exact reasoning, unless in cases which admit of the comparison being performed according to some method the results of which shall be self-evident, and inapplicable from our notion of the thing measured. The two objects compared must be of the same kind; they are then, and then only, the objects of mathematical comparison, when other magnitudes equal to A and B can be found, and added together as often as may be desired; and when, moreover, any collection of As can be compared with a collection of Bs, so as to ascertain which is greater or less than the other. Angles furnish an instance of magnitude the conception of which is exceedingly vague in the mind of most beginners, but which takes precision and certainty in the course of mathematical study.

Magnitudes, thus capable of comparison, are the objects of the science of proportion. [See also NUMBERS; QUANTITY.]

That part of geometry which proceeds proportionally considers only the simple alternative of equal or unequal, modes of inequality being necessarily deferred until after this has been arrived at.

By the magnitude of any bounded space the mathematician means the results of measurement which will be described in SOLID, &c. DIMENSIONS; but the common idea refers to that which the mathematician calls for distinction apparent magnitude. It is correct, in the common use of the term, to say, that a man appears larger, the eye is more distant from the eye, the apparent nature of comparison. Experience, derived from the real size of objects, and from the manner of how to make our eyes upon the object, is necessary before we can hear the absolute from the apparent magnitude.

It is soon found that an object, as it recedes, grows smaller, that is, subtends a less angle. It is also seen that the nearer they are the less is the apparent diameter of the object. The former is a consequence of the law of light which takes place in its passage through the air; were we not for this, the same object would be equally bright at all distances; for though the quantity of light which enters the eye is diminished by increase of distance, yet the light from which the eye appears to proceed is diminished as the same proportion. The law of distinctness is a consequence, first of the law of light, next of the different proportions in which colours are lost: the effect of the dispersed atmosphere, which makes it impossible to distinguish the colour of the atmosphere over the whole. Our perception of magnitude depends both on the subtended angle and on the distinctness:

Assume, for instance, that two objects seen under the same angle, the less distant, as being the more distant, and the less apparent size of the nearer, might be readily be shown by producing instances in which we are deceived, the object being either as is not commonly seen, or seen under unusual circumstances. A cabalistic representation on a column does not suggest the idea of a man of usual size to the perspicuity in general; and some person mounts the same height, and affords means of comparison. In a fog, which diminishes the distinctness of objects, but does not affect the angles under which they are seen and the same size is apparent; and distant hills appear nearer in a clear day than in a hazy one. Those who wear spectacles may satisfy themselves, by breathing on the glasses, and watching an object as the moisture evaporates, that increase of distinctness so to speak.

The angle subtended by an object is inversely as its distance, which is sufficiently near for common purposes, when angles are small, which is generally the case. As a man of six feet high, at the distance of a hundred feet, a man of six inches high will appear as an angle of 3° of the moon under an angle of 23° to 24°.

MAGNOLIAE. An important natural order of abloom pinnate-leaved Exogena, consisting of branching stems, inhabiting the temperate parts of both the Old and New Worlds. The class is composed of many species, white and hypogenous stamens of Ranunculaceae, to which they are closely allied; they differ not only in their arboreal habit, but in the young leaves being enveloped in scales, either born-like and convolute, or bivalved, which are thrown off as the leaves unfold. They are sweet-scented, and the leaves are firm, broad, and lasting, in consequence of which many of the species are objects of cultivation in all civilized countries. In England, where they are most plentiful, they are among the most highly valued of ornamental plants, and every species which flourishes under the climatic, or which will thrive in conservatories, has been collected with great care, whenever opportunities have offered, so that now remain to be imported. As a rule, the leaves are large, and the flowers in clusters of from five to ten, each flower having from five to seven petals of a fleshy consistency. Examples are the Magnolia grandiflora of Carolina; M. glaucas, of which there are many varieties; M. macrophylla, the flowers of which are among the largest in the vegetable kingdom; and the Tulip-tree, Liriodendron tulipifera, a tall tree with singularly large leaves. In Bengal there is M. champaca, of which the fragrant flowers of the Tampac, a species of Michelia; while in China and the Malay Archipelago others are equally well known for their ornamental characters. Nor are the flowers of this order less useful than beautiful. It is probable that they are all valuable for the feedings of insects. [See also MAGNOLIAE.]
bark. Magnolia glauca is among the best bitter and aromatic species known in medicine, and the Tulip-tree affords to the North American settler a substitute scarcely inferior to it.

The genera Talauma and Magnolia have the very singular property of dropping their seeds out of the back of the seed-vessels when ripe, allowing them to hang down, each suspended by a long extensible elastic cord, composed of delicate spiral vessels.

A branch of Talauma pinnata.

1, a head of ripe fruit with the seeds hanging down by their cones; 2, a varicose section of a seed, showing the minute silicula lying in copious albumen.

In consequence of the seeds of Magnoliaceae containing an abundance of oil which often becomes rancid soon after they are gathered, it is difficult to transport them to a considerable distance in a living state. The best method of succeeding in that object is to pack the seeds in earth as soon as they are ripe, pressing them close and securing them in a box. Under such circumstances they will preserve their vitality for several months.

Magnus, Albertus. [Albertus Magnus.]
Mago. [Carthage.]
Magro. [Columella.]
Magpie. [Cornube, vol. viii, p. 68.] In addition to the habits of this bird and its geographical distribution stated in the article above referred to, M. Temminck quotes M. Bosc as authority for its building its nest in edifices, and as being very common in Norway. It lives as high up as Lapland, and is common in the More. Dr. Von Siebold and M. Bürger observed it in Japan, where it is known by the name of kasa, and is precisely identical with the European magpie.

Mahabalipuram (the city of the great Bāli), a village on the Carnatic coast, in 12° 36' N. lat. and 80° 16' E. long, about 35 miles south from Madras. In the immediate neighbourhood of this village are a great number of ancient sculptures in a high state of preservation. They consist of groups of human figures, lions, elephants, bulls, monkeys, and cats, all of the natural size, and various other animals or monsters. These figures are all cut out of solid blocks of granite, and were evidently connected with mythological subjects.

In the face of a granite rock behind the village is an excavated gallery with pillars, and near to it is another large excavation, the walls of which are covered with sculptures, having reference to the Hindu mythology. To the north of this village is a temple for a statue of Ganapati, thirty feet high, which is cut out of a single block of granite; and about half a mile on the south side is a group of temples from seventeen to thirty-six feet in height, formed of the same material. Some smaller caves are seen in the neighbourhood, and everywhere about are scattered fragments of sculptures similar in character to those above described.

A temple dedicated to Vishnu, a tank, and some architectural ruins in the adjoining plain, are held by the natives to be of an equally remote antiquity with the sculptures, but this opinion does not appear to be well founded. The inhabitants have a tradition that the city of the great Bāli stood on the shores opposite to the site of the present village, but is now covered by the sea. It appears however that the opinion of the sea having swarmed up peculiarly and away several pagodas is groundless, and it is even doubtful if the tradition above referred to does not rather apply to a place on the Malabar coast, where the memory of a prince called Bāli is still celebrated by an annual festival. It appears that the true Sanscrit name of this place on the Coromandel coast is 'Mahāmalaipura,' or 'the city of the great mountain.'

(Babington, On the Sculptures and Inscriptions at Mahāmalaipura, in Asiatic Transactions, vol. ii.)

Mahābhārata, or Bharata ('belonging to Bharata and his descendants'), the most celebrated epic poem of the Hindus after the Rāmāyana. A passage in the introductory part of the work (1,296) has given ground for the assertion that it contains the round number of a hundred thousand distichs or stāṇivas; but in order to complete this enormous amount, the Harivamsa, a mythological history of Krishna, and sundry other pieces, have been incorporated with it. The eighteen component fictions (Pāncaśi) which constitute the Mahābhārata contain about 85,000 stāṇivas, and even these may be reduced to 34,000 distichs, of which the original 'Bharata,' without its episodes, is said to have formerly consisted. (1,101.) The principal subject of the Mahābhārata, to which the middle section, but as the Pandava brethren are favoured by their friend and ally, the heavenly Krishna, and as they were themselves, according to the legend, begotten by several deities, after a long struggle against the Kurus, and after many perilous adventures and bloody battles, they were finally established in the sovereignty of India.

In this main texture of the Mahābhārata is interwoven a great variety of episodes; or more properly speaking, the history of the Pandus and Kurus is the leading thread by which an immense collection of ancient traditions, moral reflections, poetical descriptions, and popular stories of every kind, has been connected. It is very important to observe that these accessory elements, which now form almost three-fourths of the whole epopee, are stated in the poem as not to be the subject of the work; but in fact they are for the most part very loosely inserted; and as many of them are epic productions of considerable length, the principal theme is not only frequently interrupted by interlarding episodes, but often totally lost out of sight, even when the most active progression should be expected. Thus, for instance, the metaphysical system of Patanjali is propounded by Krishna, in the eighteen lectures of the much admired Bhāgavadgītā, just when the army stands disposed in full array and ready for battle, and he utters a vast number of various short tales and fictions of every description occasionally inserted, the episodical compositions of the Mahābhārata may be divided into two general classes of a more distinct character and of peculiar importance. The first, to which the city of the great mountain, the Mahābhārata, are particularly consecrated, is occupied in solving theogonical and cosmogonical problems, blended
with those wild and fantastical conceptions by which the metaphysical mind of the Hindus is so deeply attracted. To these the last of the class of the war, and after the conclusion of the great war, are added didactic and moral episodes on religious duties and sacrifices, on solitary and penitential life, and on final beatitude, forming almost a complete system of Indian ethics, and a compendium of Indian theism. The second class of episodes, which may, although in some respect improperly, be called historical, consist of various and ample traditions of former epochs, and are occupied in recording the origin, genealogy, and history of ancient kings and heroes; in giving an account of the saintly and pious preceptorial adventures, and their splendid actions; and in exhibiting their piety and devotion in fulfilling those duties of a religious life by which the favours of the heavenly beings are to be acquired. These and similar narratives are chiefly accumulated in the third and last section of the 'Mahabharata,' called Vai.

parvan (book of the forest), where they are told by the Brahminical sage Markandeya, for the purpose of entertaining, consoling, and animating the dejected spirit of the Pandu princes during their exile in the wilderness. In this respect the episodical pieces of the 'Mahabharata' may be compared with the rhapsodies sung by Phemius and Demodocus in the Homeric poems, and as many of them are marked with a peculiar simplicity of manners and customs, they might almost be said to comprise the main body that outlines the epopee, of which they are totally independent. This leads us to the original composition of the 'Mahabharata,' which in the introductory part of the poem is thus related.

The most celebrated sages, with their disciples, being associated, gathered on the pleasant banks of the sacred river Krishna Dwipayana, with the surname of Vyasa, who had been an eye-witness of the great civil war, is requested by king Janamejaya to give an account of those bloody events, in which, two generations ago, his own ancestors had played a fatal part. This task, being, as Vyasa said, a work of necessity, is readily performed by one of his disciples, Vaisampayana, who, being duly instructed, and from memory familiar with the heroic poem, recites it at full length to the listening audience. A similar festival being afterwards celebrated by king Sata, and its proceedings, whose father had been a disciple of Vyasa, undertakes the recital of what is now considered the original 'Bharata.' Neither in these nor in other instances is a written copy of the text mentioned; it was in fact only committed to memory and handed down by oral tradition, until the increasing mass of subsequent episodes, more or less connected with the primitive subject, urged the necessity of a final arrangement; and, to avoid further interpolations, a summary of the whole was reduced to a poem, which rolled in its new existing under the name of 'Mahabharata.' Notwithstanding the traditional character and the gradual growth of the poem, Vyasa has been supposed not only its author, but even the operation of collecting its component parts. Each of the ingredients is attributed to a certain personage, who, according to Hindu tradition, collected the Vedas and Puranas, and composed the Brahminical school of the Vedanta school. But as these operations could not be executed by the same individual, it has long been acknowledged that the name of Vyasa (implying ademption) does not signify a distinct historical person, but rather an allegorical character, including the important fact that the four great parts of the sacred canon were digested by the same orthodox body of Brahminical scholarship. Every branch of the traditional and scientific learning of the Hindus has been successively propagated and preserved. In the religious and priestly character prevails in the epic poetry of the Hindus: in this sense the 'Akiliya' is official poet. This 'Bhakti,' and the 'Bhajana,' as it is called, 'Mahabharata,' are in fact considered as the 'Sasta' of the Kshatriya caste, for whose recreation, encouragement, and instruction they were originally designed. Compared with the 'Bhagavata,' the 'Mahabharata' is wanting in unity and internal coherence; it is rather a collection of poems, gathered round the central history of the Kurus and Pandus: but for this very reason it far surpasses the former poem by a greater variety of pleasing scenes and attractive incidents. In its episodes, the characters of which are very often delineated with great fidelity, and as individual as so strongly marked an individuality, as to leave a powerful impression on the reader. Finally, and what is more essential, the 'Mahabharata' may be looked upon as a most ample source of every kind of antiquarian lore, and as the only Sanskrit work, if we except the 'Annals of Ksh.

artha,' by which a clear and distinct history of the historical fragments has been preserved. The truth of this will be shown in a series of learned essays lately begun by Prof. Lassen (in Zeitschrift für die Kunde des Morgenlandes). The great war itself, which on astronomical calculations has been supposed to have taken place during the twelfth century B.C. (Works of Sir William Jones, vol. ii. p. 77), is indubitably an historical event; and as Piasta (white), Krishna (black), Durayodhana, Duryodharma, and other names are allegorical, Prof. Lassen acutely suggests, the ancients viewed their history represented under the rajas of the Brahminical tribes and the native occupant of the country. Leaving aside these questions, we only remark that although the 'Bharata,' properly so called, is by no means contemporary with the 'Bhagavata,' yet its existence is the basis of Hindu antiquity are sufficiently justified by internal evidence and the unanimous testimonies of subsequent writers. The poem is evidently of later date than the 'Ramayana,' but neither the precise time nor the author is known. Three large quartos have already appeared of a complete edition in the original Sanskrit, carefully collated by learned Pandits with the best manuscripts in the library of the Asiatic Society of Bengal. Besides a number of detached fragments and single stories of the 'Mahabharata,' faithfully translated by Sir Charles Wilkins, Prof. Wilson, and Mr. Milman, such as The Churning of the Ocean, the Story of Draupadi, and The Eastern Tale of the Nymphs, an English prose translation was published by Sir Charles Wilkins. London 1785. 3. Indrakilada, Anjana, Hitendrabhapa, Sundara and 'Pasasuna, and 'Nabha, by Bopp, Berlin, 1824. 4. 'Dharikata tribhantificus' of Mahabharata praestantissimis episodis, by Bopp, Berlin, 1829. MAHARANA. [Hindustani, p. 216.] MAHARUNUDDY. [Hindustani, p. 210.] MAHMBUDJ, son of Ishak, was raised to the throne of the Ottomans after the deposition of his son Ahmad III. in 1730. He continued the war begun under his predecessor against Nadir Shah of Persia, but with no success, and made peace in 1736. A war with Russia fol.

lowed, which cost the Ottoman Empire the loss of the Crimea, which was taken by the Russians in 1739. In 1737, and the Austrians having joined them, invaded Wallachia. The Austrian forces being defeated at Krotoska on the Danube, the court of Vienna submitted to a disadvantageous peace in 1739, by which it gave up not only its claim to the coveted Moldau, but ceded Belgrade to the Turks. Belgrade, the conquest of a former war. Peace was made after making use of the Turks, and the latter power restored Ockelkow. A new war broke out with Persia in 1747, and terminated by a treaty unfavourable to the Ottomans. Mahmud took the part in all these transactions, but left all the cares of state to his ministers and favourites. He died in December, 1754, of the smallpox. His death being hastened by an effort which he made to reassert his legitimate sovereign. Bound, as he deemed himself, by the most solemn vow to adhere to the precept of the Koran, which enjoins the propagation of the Islam and war against the unbelievers as a matter of faith; or stimulated rather by devotion to his sacred duty, for the defence of his religious dignity, he directed his arms against the quiet and peaceful Hindus, and first attacked Jaisal, the neighboring king of Lahore, in 1001. This expedition having
proved successful, Mahommed invaded Hindustan almost every year, and in no less than fourteen subsequent incursions, made in various directions and as far as the careless idea and the feeble resistance of the Hindu rajahs would permit him to proceed, he devastated the provinces, ravaged and plundered the cities, destroyed the places of religious worship, and murdered the inhabitants, always returning with an abundance of spoils. In the year 1020 of the Hijra he marched into the city of Kanope, destroyed it and burned it, and after the antient and magnificent Mathura, whose palaces and temples of marble and alabaster filled even their savage conquerors with respect and religious awe. The remotescriptions are not very clear on this point; but it is certain that Mahommed directed against a celebrated temple of Sonnat (Somnath) in Gujarat (1025); and although these transitory invasions of Hindustan were only undertaken to satisfy his fanaticism and avidity, and without the idea of permanently occupying the invaded provinces, he now almost thought of making the city of Nahavalekah his new capital. Nevertheless Mahommed retired to Chorasan, loaded with the inestimable treasures of the Indian temples. After having once more attempted a predatory excursion into Multan, he died at Ghuzzan, either from much labors or by exfoliation from his contemporaries, whatever futility he had done during his life-time by raising his justice and equity, and softening the leading characters of his countrymen, which were cruelty and avarice. All that can be said in praise of Sultan Mahommed is, that the Venetians acknowledged him as the new name of Ghizni, which he adorned with the most splendid buildings, and by the lustre and magnificence of his court; and the new epoch of Persian poetry, of which the Shah-Nameh is the most eminent and imperishable monument, was attributed to him. Mahommed also composed the satirical poems of Firdusi; testify, even his liberty and favours were in a great degree dependent on his capricious temper, and were often bestowed in a very niggardly manner. About these miles from the modern city of Ghizni, the tomb of Mahommed is still preserved, and in remembrance of his having been a zealous defender of the faith, Mohammedan prelates are maintained, who constantly read the Koran over his grave. (Mich.ond, Historia Gumenidenarum, ed. Wilken, Berlin, 1848.)

MAHOMET I., son of Bayazid I., was sandjak, or governor, of the town and district of Amasia when his father was defeated and taken prisoner by Timur at the battle of Anjar (July, 1401). The invader having left Asia Minor, Mahommed, with the help of Venice gave back to Amasia and other fortunate places which were lost by Mahommed and killed, and Mahommed became sole sultan of the Ottomans, a.d. 1413.

Mahommed was the restorer of the Ottoman empire, which he had been called to preserve. He entered into treaty with Venice and made a treaty with the Venetians to defend against the Turks, and obliged the besieged princes of Bosnia, Servia, and Wallachia to pay him tribute. He also equipped a fleet to resist the attacks of the Venetians by sea. He died, after nine years' reign, a.d. 1421. He was succeeded by his son Mourad II.

MAHOMET II., son of Mourad II., was proclaimed emperor of the Ottomans after the voluntary abdication of his father in 1444; Mourad however was obliged by a mutiny of the Janizaries, who objected to his son's youth, to make a compromise, or cede the government to a boy, and he continued in power at Constantinople, which he left at the beginning of 1451, when Mahommed, then twenty-two years of age, commenced his reign. He broke the truce existing with the Byzantine emperor, by building a fort on the European side of the Bosphorus, opposite to the fort of Nicea, which preceded it, and had built on the Asiatic coast of the strait, by which means Mahommed established a complete command of the Bosphorus. This led to remonstrances from Constantine Palaeologus, the Bulgarian emperor, who wrote to the Sultan of Persia, and to an interview with the reigning admiral of Constantinople. Mahommed went on subduing the Greek towns on the Propontis and the Euxine, ravaged Thrace, and invaded the Peloponnesus. At last, having assembled an immense host, rated by some at 300,000 men, with a formidable artillery, and the imperial troops, he set out to conquer the city of Constantinople in April, 1453. After fifty-four days' siege the Ottomans carried the city by storm on the 29th of May, 1253. Constantine fell bravely fighting in the breach, covered by a heap of the slain. After three days of plunder and massacre Mahommed restored order, released most of the prisoners, granted to the conquered the free exercise of their religion, and gave them the use of one half of the existing churches; the remainder, and the best of them, Santa Sophia among the rest, were transformed into mosques. Mahommed remained nearly three years at Constantinople, after which he returned in triumph to Adrianople, which was then the residence of the Ottoman sultans.

In 1456, after invading Servia, he laid siege to Belgrade, but was opposed and defeated by John Hunyadyes, a gallant Hungarian hero, and a great servant of the kingdom in the absence of king Ladislas. This was the first great battle in which the Mohammedan arms encountered in their advance towards Western Europe. At the same time Mahommed was defeated in the mountains of Albania by Scanderberg. The Turks however took Corinth and the Morea. In 1461 they took Trebizond, and put an end to the dynasty of the Comnenes. In 1462 they took Lesbos and other islands of the Archipelago. They next conquered Bosnia, and Mahommed, after promising safety to which prince of that country, died without doing them any injury. Mahommed marched against Scanderbeg, but was defeated under the walls of Cria. But Scanderbeg lost all the open country, and dying soon after, left his infant son John Castriot under the guardianship of the Venetian senate. The Turks put his first cousin to the name of Castriot, and placed him on the throne of Albania and the Morea. In 1470 Mahommed laid siege to the town of Negroponte, the stronghold of the Venetians in the Aegean Sea. The Provveditore Erizzo, after a gallant resistance, being obliged to yield, Mahommed ordered his prisoner to be put to death, after a barbarous equivocation he had him saved in two, saying that he had not promised to spare his sides. The Venetians by means of their commercial agents excited against Mahommed, and the Venetians, inclining through the wishes of a Turkish prince, Hassan, a prince of Persia, who was a good friend of Castriot, and took Tocat in 1472. (Contarinis, Ambrogio.) Mahommed hastened to encounter him, and a battle was fought near Trebizond, in which the Turks had the advantage over the Persians, who withdrew beyond the Euphrates.

In 1473 Mahommed was engaged with the Grigor, which became his tributary. The Turks invaded also Dalmatia and Frioul, in 1478, and advancing as far as theTagliamento, obliged the Venetians to sue for peace, which was concluded between them and Mahommed, in January, 1479, by which Venice gave up Servia and other fortresses in Albania, and the Morea. In 1480 a Turkish force landed at Otranto, and spread alarm throughout Italy. In the same year the Turks attacked Rhodes, but were defeated by the Knights of St. John, under the command of their grand master, a.d.

Mahommed was greatly irritated at the news of this defeat; and while he was making preparations for resuming the attack in person, he died at Teggmar Zair in Bithynia, in May, 1481. His remains were carried to Constantinople by the Turks, where his son Mahommed II. succeeded him, and was elected emperors of the Greeks. (D'Entrekasinos.) Mahommed was a successful conqueror. He was cruel, like most of the Ottoman warriors: but he was not an illiterate or rude barbarian. He knew several languages, Persian, Arabic, and Greek; was fond of poetry, and was a good letter-writer. Several of his letters have been translated into Latin, and published by Landini, Lyon, 1529. Three of his letters, addressed to Scanderbeg, are found in. Mecheiour Junius's Collection, 1595. He founded two mosques in Constantinople, which were the first built in that city; his name is attached to his military career and his courtesy, such as that against a Greek female, Irene, and the story about Bellini the painter, rest upon doubtful authority. (Bellus, Gentile.) His bad faith however is fully proved, in the instances of the unfortunate Harry of the prince of Bosnia, and others. In Turkish history he is styled Mahommed the Great and the Conqueror. (Knowles's History of the Turks; Mignot, Histoire de l'Empire Ottoman.)

MAHOMET III., succeeded Mahommed III., in 1595. He began his reign by putting to death all his brothers. Giving himself up to idleness and pleasure, he left the government in the hands of his ministers, who were under the influence of his mother. His troops were defeated by the Imperial troops, and his son-in-law, prince of Transylvania, and they lost Gran and other places. Mahommed, being roused from his apathy, collected a large force, with which he entered Hungary and took Agram; but he soon left the army, and hurried back to his capital. The war
was carried on in Hungary by his generals, but with no success to the Ottoman arms. In the meantime revolts broke out, and the Asiatic provinces and the janizaries at Constantinople mutinied. In the midst of all these disorders Mahomet died, in 1603, and was succeeded by his son Ahmed I. Ahmed IV, son of Ibrahim I, succeeded his father, who was strangled in a meeting of the janizaries in 1654, when Mahomet was seven years of age. His mother assumed the regency; but a fresh revolt of the janizaries soon overthrew her power, and she also was put to death. Mahomet IV, the young Kupruli, was proclaimed to the throne of grand-vizier, or prime-minister. Like many other officers who have distinguished themselves in the annals of the Ottoman empire, Kupruli was an Albanian. He and his son Achmet after him were the ruling ministers during the greater part of the reign of Mahomet IV, 1657, troubled himself little with state affairs, being chiefly engrossed with the sports of hunting and other pastimes. The two Kuprulis spread a last ray of departing glory over the decline of the Turkish state. The elder Kupruli, after representing seven or more embassadors from a storm within, formed a new fleet to oppose the Venetians, who, under the two gallant brothers Mocengo, threatened to force the passage of the Dardanelles, in 1657. He also sent for troops to carry on the war in the island of Candia. Meantime the war was raging in Hungary, and the emperor Leopold I. The Turks advanced as far as Neuhauessel, which they took, spreading alarm to the gates of Vienna; but they were defeated by Montecucoli, general of the emperor, at the battle of Gotha, 1663, when the peace was concluded. The same year Mahomet Kupruli died, and his son Achmet Kupruli became grand-vizier. In 1667 Achmet went in person to Candia, and the siege of the capital of the same name began in real earnest. The Venetian general, Berninzi directed the defence. In September, 1669, Morosini, after a most gallant resistance, having exhausted all his resources, made an honourable capitulation, and at the same time concluded a treaty of peace between Venice and the Porte upon terms more favourable to Venice than have been previously made by [Ottoman] Kuprulis, unlike the barbarian Mustapha, who in the preceding century had atrociously violated the capitulation of Famagusta [Cyperus], faithfully kept the conditions granted to the Venetian garrison, and allowed a free passage to all the inhabitants who chose to embark in a storm within, formed a new fleet to oppose the Venetians, who, under the two gallant brothers Mocengo, threatened to force the passage of the Dardanelles, in 1657. 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The Turks advanced as far as Neuhauessel, which they took, spreading alarm to the gates of Vienna; but they were defeated by Montecucoli, general of the emperor, at the battle of Gotha, 1663, when the peace was concluded. The same year Mahomet Kupruli died, and his son Achmet Kupruli became grand-vizier. In 1667 Achmet went in person to Candia, and the siege of the capital of the same name began in real earnest. The Venetian general, Berninzi directed the defence. In September, 1669, Morosini, after a most gallant resistance, having exhausted all his resources, made an honourable capitulation, and at the same time concluded a treaty of peace between Venice and the Porte upon terms more favourable to Venice than have been previously made by [Ottoman] Kuprulis, unlike the barbarian Mustapha, who in the preceding century had atrociously violated the capitulation of Famagosta [Cyperus], faithfully kept the conditions granted to the Venetian garrison, and allowed a free passage to all the inhabitants who chose to embark in a fortress of Kotim, and drove the Turks to the south of the Danube. In 1675 a formidable Turkish host, commanded by the bashaw of Damascus, who for his bravery had earned the title of "Shaitan" (the devil), entered Poland. Sobieski, who was then king, resisted, collected his forces, and met the enemy with a handful of men, and at last obliged them to ask for peace, which was concluded in 1676.

In 1683 the Turks, after seven years' preparation, put into the most formidable army which Europe had seen for a long time. They swept over Hungary in a storm within, and marched directly upon Vienna. It is generally admitted that Louis XIV. was privy to their plans. The emperor Leopold and his family left their capital, and Germany and the following months. On the 12th of July Vienna was invested by the grand-vizier, Kupruli was dead, at the head of 300,000 men, Turks and Tartars. On the morning of the 11th September Sobieski and Charles duke of Lorraine, at the head of the army of 40,000 men, went into the Caernberg, from which they held the Austrian capital and the wide-spread glittering tents of the Ottomans. On the following day Sobieski attacked and drove the Turks to the Chiereheneharts, against which, at five o'clock in the afternoon, he led a great body of men, everything before him, and obliged the vizier to fly after making a gallant resistance, leaving his camp, his baggage, and his artillery in the hands of the Christians. The Turks subsequently lost Hungary. In consequence of these disasters the janizaries at Constantinople mutinied. Mahomet IV. was deposed, and Soliman III. was raised to the throne. Mahomet died in confinement in 1691.

MAHOMETANISM. [Mohammedanism.]
MAI

after some considerable dissensions his son Bejoynez was de-

clar'd Peshwa. This chief continued in power until Octo-

ber, 1802, when his forces being totally defeated near Poona

by Jesswant Rao Holcar, he fled to Bassein and placed him-

self under the protection of the British government. In the

following year he was reinstated in his capital by General

Wellesley. He was noted for the extreme richness of his

palaces, which form a feature of the Peshwa's residence, and

of an intriguing disposition and very avaricious. He per-

mitted his officers to practise all manner of extortion,

that he might in the end seize on their ill-gotten treasure.

In 1813 he was detected in the endeavour to form a gen-

eral conspiracy against the British; but, in consequence

of the measure taken by the Governor-General, his cap-

tive was taken and imprisoned at Salsette.

There is no borough gaol: the justices of the borough

clear all prisoners to the county gaol, and the expense

of their maintenance, amounting to one shilling per day

for each prisoner, is defrayed out of the borough-rate. On

the east side of the river there are several small houses

opposite to the town-hall; a spacious commercial room

used as a Corn Exchange. The architect's palace is a

Gothic structure, rebuilt about the middle of the fourteenth

century. Since that time it has undergone considerable

alterations, and in its present form is a pleasant and conve-

nient residence. The chapel of Newark Hospital, which

was built in the thirteenth century, is a small but beauti-

ful specimen of the early pointed style. Maidstone formerly

furnished a good deal of woof, and was a centre of

the manufacture of woollen goods. It is a market

place of some importance.

There was also a fraternity of Corpus Christi, and upon the

suppression of this fraternity the buildings belonging to it, then

called 'The Brotherhoof Hall,' were purchased by the corporation, who had the

building converted into a free grammar-school, which still

exists, but is not at present in a very flourishing condition.

Free men have the privilege of sending their sons to this school, where they receive a class-

ical education gratuitously, but for other branches a charge

is made. The school receives a grant of £25 per annum from the funds of the corporation, and has the

management of certain lands in Romney Marsh confided to

him, these lands constituting the principal endowments of the

school. There are exhibitions, founded by Robert

Inman in 1612, for four scholars to be elected at

Oxford; two to be elected from this school, and two from the free grammar-school of Rochester. Besides the

grammar-school there are a proprietary school, four charity

schools, a union, nineteen charities, and other and other benevolent institutions. Maidstone is in the

diocese of Canterbury. The living is a perpetual curacy in

the patronage of the archbishop, producing a net income of

£730.

The parish church of All Saints, which is one of the

best buildings in the town, was commenced in 1794 and

the new church was built a few years ago. There are also

nine places of worship for Dissenters. The population of

the borough, which is coextensive with the parish, was 15,387

in the year 1831, exclusive of the prisoners confined in the

county gaol, and is still increasing. The assessed taxes

collected during the preceding year amounted to 4784l.

Maidstone has returned two members to parliament continuously

from the reign of Edward VI. The county gaol at Maidstone

is a modern building, constructed in 1818 on the improved

plan, and is capable of containing 450 prisoners. According to

the Gaol Returns transmitted to the secretary of state it ap-

pears that in the year 1833 the general state of the pris-

oners as to morals, discipline, employment, &c., was emi-

nently satisfactory. The total number then confined was 410;

and no less than 1499 of the prisoners were employed out of

the town.

The hours of labour are from six in the morning to half-

past five in the evening, when the daylight admits; and at

other times of the year from daylight in the morning 'till

half an hour before sunset in the evening, and in winter, the

days, conducted under the direction of the chaplain, provision is made for the instruction of the

prisoners of all classes. (Parliamentary Papers, 1834, vol. xlv.)

There are four fairs held annually on the 13th of February,

12th of May, 20th of June, and 17th of October; the last is a

large hop-fair.

(Corporation, Boundary, and Church Revenue Reports; Hasted's History of Kent; Beauties of England; Can-

berr's Brit., &c.)

The town is said to be in a thriving state. There are

manufactories of felt and blankets, but these are of limited

extent compared with the woollen mills, which employ up-

wards of 900 hands. The trade up the Medway is consid-

erable, and has been materially increased by the construc-

tion of the lock for improving the navigation. The imports

consist chiefly of coal, timber, groceries, iron, and

cotton goods; and the export consists chiefly of flax, stone

from the quarries of Kentish ragstone in this parish, and

paper. The aggregate tonnage of the vessels pass-


ing through Allington lock is estimated at 128,000 tons,

upon which tolls to the amount of 2600l. are annually col-

lected.
MAIDÆ, or MAILANS, the second tribe of the family of Oxymyriachi, according to the system of M. Milne Edwards, composed of brachyurous crustaceans, whose carapace, nearly always very spiny, is, with some exceptions, much longer than it is wide. Rostrum generally formed of two elongated horns. First joint of the internal antennæ but little developed; that of the external antennæ, on the contrary, very large, and soldered with the neighbouring parts so as to be confluent with them; its external border is generally a considerable eye on the lateral side of the orbit, and its anterior extremity united to the front before the level of the internal canthus of the eyes. The movable stem of the antennæ always of considerable length, is generally more widely separated than it is long, whilst the buccal frame is longer than it is wide.

The third joint of the external jaw-feet is as wide as it is long, more or less dilated on the external side, and truncated or notched at its anterior and internal angle, by which it is articulated with the fourth joint, which is very small, and which have the anterior and external angle of the basilar joint of the external antennæ obuse, and not prolonged beyond the level of the internal one, and the slit of the inferior orbital border very narrow the seech, which have the anterior and external angle of the basilar joint of the external antennæ spiniform, and prolonged much beyond the level of the external angle, and the slit of the inferior orbital border very wide.

Our limits will not permit us to give more than one example, and we select Libinia spinosa, a species belonging to the second section. The body is entirely covered with short and brownish down, and it is about four inches from head in length.

Locality.—The coast of Brazil.

This genus has the greatest relation to Doreus and Pisa, between which it establishes the opinion of M. Milne Edwards, a nearly insensible passage. The general form of the body in Libinia approaches closely to that of Doreus.

Generic Character.—Carapace very convex above, in gills nearly circular, with its orbital-frontal portion and their sensibly above the level of its lateral borders, which are prolonged towards the mouth rather that towards the external canthus of the eyes. Sometimes the carapace is elongated a little, and bears a considerable resemblance to that of some of the Pisa. Rostrum small, narrow, and notched in the middle; the front, measured between the orbits, is much narrower than the anterior extremity of the buccal frame; the anterior angle of the superior orbital border is projecting, but never reaches beyond the basilar joint of the external antennæ; the legs are nearly cylindrical, and directed very obliquely forwards and outwards; their external angle is formed by a large compressed tooth, which is separated from the rest of the wall of this cavity by two fissures; one superior and very narrow, the other inferior and more or less open. The stomachal region of the carapace is but little developed, but the branchial regions highly so, and their lateral border, which is armed with spines and very much curved, is directed towards the anterior part of the limb, so that the small siphon is small and short; the basilar joint of the external antennæ is short, but very much developed, and always wide in front, a disposition which occurs in Pisa, whilst the contrary is to be remarked in Doreus; the second joint of these antennæ is a short, cyllindrical, and inserted on the sides of the rostrum at a distance nearly equal from the orbit and the antennary fossa; the third joint is rather smaller than the second, and the fourth is very slender and very short. The external jaw-foot, and the whole of the antennary region is not more than half the length of the buccal frame.

The external jaw-feet and the sternal plastron have the same form as in Pisa. The anterior feet are much longer than in Doreus, but less developed than in Pisa; they are always nearly of the same size as those of the second pair, and in general are much shorter even in the males; the hand is very nearly cylindrical, and has little convexity;

The pinnæ are rounded or truncated, and finely dentated, and touch nearly throughout their length, a disposition which is rare in the Pisa. The remaining feet much resemble those of the Pisa, except that their last joint is longer, and never armed below with spiny spines, as in them; the length of the feet diminishes progressively, and those of the second pair are not more than about once and a half as long as the post-frontal portion of the carapace; they are in general much shorter, and this character suffices to distinguish the Libinia from the Doreus. The abdomen is composed of seven joints in each of the sexes.

Geographical Distribution of the Genus.—The seas of America, as far as is known.

M. Milne Edwards divides the genus into two sections; the first consisting of species which have the anterior and external angle of the basilar joint of the external antennæ obtuse, and not prolonged beyond the level of the internal one, and the slit of the inferior orbital border very narrow the seech, which have the anterior and external angle of the basilar joint of the external antennæ spiniform, and prolonged much beyond the level of the external angle, and the slit of the inferior orbital border very wide.

Our limits will not permit us to give more than one example, and we select Libinia spinosa, a species belonging to the second section. The body is entirely covered with short and brownish down, and it is about four inches from head in length.

Locality.—The coast of Brazil.

Intermediate between the Libiniæ, the Pisa, and triangular Mithracæ.

Generic Character.—Carapace more triangular than Libinia: the stomachal region nearly as much developed as the branchial regions. Rostrum small, hardly longer than it is wide, and formed of two flattish horns, which are pointed and divergent, and one the base of which is as long as all the width of the front. Orbital-oval-shaped, and are obliquely forwards, outwards, and upwards; their superior border with two small fissures, which terminate anteriorly in a small spine, less projecting than the lateral edge of the front, and belonging to the basilar joint of the external antennæ, whose inferior border is complete, and presents only one small fissure. Eyes large and retractable. Disposition of the antennary region, the jaw-feet, the sternal plastron, the gills, essentially the same as in Pisa. The four last feet present small spiny spines placed gularly.

The only species known, Herminia condita, has a body covered with a thin and fine down, about two inches in length, and of a reddish colour.

Locality.—The Mediterranean.
the absence or presence of spiniform teeth on the upper border of the third, or third and fourth joints of the four last pairs of feet, &c. The first of these sections is separated into two subdivisions, dependent principally upon the rounded or triangular form of the posterior portion of the carapace. We select as an example one of the species of the first subdivision of the first section, *Pisa tetraodon*. This species is two or three inches in length, and has the body entirely covered with a kind of down and some crooked hairs: it is of a brownish colour.

**Locality.**—Very common on the English and French coasts.

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**P. C. No. 888.**

*Pisa* (Leach.)

**Generic Character.**—Carapace gradually narrowed anteri- orly for about three-fourths, and its lower anterior borders prolonged obliquely in a nearly straight line up to a small distance from its posterior border; the surface very convex; the regions in general sufficiently distinct, and the sternal region in particular very much developed. The frontal frame, which are placed very regularly on one of the four horns directed forwards, the two external of which occupy the anterior extremity of the superior orbital border, and the two middle of which form the rostrum, which is always at least once and a half as long as it is wide. Eyes carried very short peduncles, and bent backwards in the orbits, which are of an oval shape, and directed outwards and downwards; the upper border of these cavities with two slits, separated from each other by a triangular tooth, and their external angle situated rather below than above the lateral border of the carapace, which is there terminated. The orbital border interrupted below by a large notch. The internal antennae without any peculiarity. The basal joint of the external antenna much longer than it is broad, only slightly narrowed forwards, and exceeding the level of the internal enanthus of the eyes, but completely hidden above by the spiniform prolongation of the superior orbital border. The second joint of the antenna slender and cylindrical, and inserted at a distance nearly equal from the anterior frame of the orbit, a little without the level of the external border of the rostrum, so as to show itself between this prolongation and the lateral horns of the head. The third joint small and cylindrical, and the fourth rather long. Antennary region nearly of the size of the frontal frame, and the epistome large and nearly square.

The second joint of the external fan-feet prolonged from the internal side much beyond the level of its external angle; and the third joint much longer than it is wide, strongly dilated outwards, and deeply notched at its anterior plastron angle. Abdomen composed of seven distinct joints.

The whole of the body of the *Pisa* is ordinarily covered with hairs, which are recurved at the end, and catch up foreign bodies which they touch; it is not rare therefore to see these crustaceans covered with sea-weeds and sponges. This disguise most probably answers the double purpose of enabling them to surprise their prey, and of protecting them from their enemies.

**Geographical Distribution of the Genus.**—Nearly all the species live in the European Seas at considerable depths, and are often dredged up by the fishermen. After spring-tides they are frequently found hidden under stones at low-water. They are not used as food.

The species are divided into two sections, depending on...
that the four last pairs are longer, and have no spines on the inferior surface of the tarsus.

Example, Hyma caerulea, Leach. The carapace of this species is strongly contracted beneath the external orbital angles. Length about two inches; colour yellowish.

Locality.—English Channel.

Naxia. (Milne Edwards.)

Establishing, in the opinion of M. Milne Edwards, the passage between the genera Lissa and Chorinus of Leach. General form of the body as in Pisa and Lissa, and the disposition of the rostrum very analogous with that which is proper to Lissa. Naxia is however distinguished from the preceding genera by the disposition of the antennae and orbits. Carapace nearly pear-shaped, rostrum much resembling that of Lissa. Orbits very small, nearly circular, deep, and marked with a fissure above and below, but without any hiatus at their inferior border. Basiliary joint of the external antennae wide but narrow forwards, very much advanced, and completely hidden by the rostrum and the anterior angle of the superior orbital border; the movable stem of these appendages inserted under the rostrum near the antennary fossa, and not beyond the edge of the external border of that prolongation, as in Pisa. Epistome very large.

Example, Naxia serpulifera, Pisa serpulifera, Edwards. Length about four inches; body covered with a brown down, and the carapace often incrusted with Fuistara, serpulifera, sponges, and the like.

Locality.—New Holland.

Naxia serpulifera, one-third its nat. size.

Chorinus. (Leach.)

Carapace longer and narrower than it is in nearly all the Muana; but, in general form, not differing much from Pisa. Rostrum formed of two great pointed basal horns. Eyes retractile, and the orbits directed upwards and downwards; but the lower wall of these cavities is very incomplete. Basiliary joint of the external antennae very prominent, their movable stem inserted under the rostrum, and the great part, concealed by it. Epistome, jaw-feet, sternum, pлаstron, and abdomen, disposed nearly as in Pisa. Ante-feet longest, especially in the males, and the two next, without any hiatus, dentinated and pointed, but a little hollowed out into a sort of gutter. The succeeding feet are cylindrical; those of the three last pairs of moderate length.
the second pair are very long; in the male they are in general ones and a half or even twice as long as those of the third pair.

M. Milne Edwards divides the species of this genus into two sections; the 1st, consisting of three which have the superior orbital border scarcely marked, and formed by three spines, the anterior one very large, and the two posterior rudimentary; the 2nd consisting of those species which have the superior border lamellose and advanced. We select as an example Cnoriaus Heros, the only species of the first section. Length from two to three inches, or rather more; rostrum, sides of the carapace, and four last pair of feet hairy; colour yellowish red. 

Locality.—The seas of the Antilles.

Mithrax dichotomus.

Chorionus Heros (reduced one half).

Mithrax.

Carapace always a little convex above, and a good deal narrowed forwards; disposition of the different regions as in the other Oxyrhynchs. Rostrum bident, generally very short, and separated from the internal canthus of the eyes by a rather considerable space; orbits nearly always armed with two or three spines at their superior border, one at their external angle, and one or two at their inferior border. Latero anterior borders of the carapace spiny, or at least toothed. Internal antenna bent a little obliquely outwards, and the frontal portion of the partition which separates them armed with a recurved spine. Basal joint of the external antenna large, and nearly always armed forwards with two strong spines. The second joint of these appendages is, on the contrary, narrow and cylindrical, and inserted on the sides of the rostrum, nearer the antennary base than the orbit; third joint nearly as large and as long as the second; the terminal and articulated stem rather short. External jaws-feet presenting nothing remarkable; internal pecten nearly circular. Anterior feet generally, in the male, longer and stouter than that of the second pair, the hand or claw always stout and convex, the pincers distantly at their base, enlarged at the end, deepely hollowed into a spoon-shape, and terminated by a semicircular trenchant edge. Feet of the second pair about once and a quarter as long as the post-frontal portion of the carapace; the succeeding feet gradually shortened; the tarsi short, hooked, and often armed with some points at their inferior surface. Abdomen generally formed of seven joints in both sexes; but sometimes only four are to be perceived in young females, the second, third, fourth, and fifth segments being soldered.

M. Milne Edwards remarks that Mithrax establishes some connexion between the family of the Oxyrhynchs and that of the Cyclometopodes.

Geographical Distribution of the Genus.—The seas of America for the most part, where some of the species attain to a considerable size.

M. Milne Edwards divides the genus into two sections:—the first consisting of those species which have the superior edge of the orbit armed with strong spines; the second, of those which have the superior border of the orbit unarmed.

The first of these sections is further subdivided into two subgenera, the first subgenus consisting of those triangular species whose four last feet are not spiny; and the second subgenus, of those transversal species whose four last feet are armed with spines. The second section contains the third subgenus, consisting of the depressed species. We select, as an example, a species illustrative of the first subgenus, Mithrax dichotomus. Size, about two inches; colour, yellowish. Locality.—Coasts of the Baleric Islands.

Paramithrax. (Milne Edwards.)

Establishing, in the opinion of M. Milne Edwards, the passage between Mithrax and Maia.

General form of the carapace very closely approaching that of the triangular Mithrax. Rostrum formed of two stout horns, and considerably less wide than the front, which, in its turn, has nearly as much extent as the buccal frame. Orbits oval-shaped, their upper border arched forwards as in the Maia, and with three strong spines posteriorly separated by two notches more or less deep; their inferior border widely notched or incomplete. Eyes retractile, with slender peduncles, which are rather long and curved, as in the Maia. The antennary region and antennary pits resembling those of the Maia. Basal joint of the external antenna large and armed with spines, one of which (the external) advances in general beyond the border of the front, and separates the orbit from the insertion of the moveable stem, which is not covered by the front. External jaws-feet and sternum nearly as in the Maia. Anterior feet of moderate strength, and terminated by pointed and rounded claws, which are not dentilated as in Pies, nor hollowed into a spoon-shaped as in Mithrax. The succeeding feet are cylindrical, very little or not at all spiny, and of variable length, according to the species; there are no small horny points at the lower end of the last joint, as in most of the Mithraces.

Geographical Distribution of the Genus.—Australia.

M. Milne Edwards divides Paramithrax into two sections:—the first consisting of those species which have the orbits very incomplete below, and whose eyes do not reach to the external angle of the cavities; the second, of those whose orbits have only one notch below, and whose eyes, when turned back, touch the external orbital angle. Paramithrax Peronti is an example of the first section, and P. Giamardii of the second.

Maia. (Lamarck.)

This genus was established by the author of the 'Animaux sans Vertebres,' for the reception of the genera Inacillus and Parthenope of Fabricius, or, in other words, for all the Oxyrhyncha properly so called. More modern authors have cut the Lamarckian genus down to the group formed by the small number of species which may be arranged in close approximation to Maia Squinado.
Carapace about a fourth longer than it is wide, and much narrowed anteriorly; its upper surface is rough, with multitudinous tubercles and spines, and the regions are not strongly marked on it; rostrum horizontal, and formed of two divergent horns; the lateral anterior border of the carapace armed with strong spines; orbits of an oval shape, rather deep, and with their superior border, which is elevated and rounded anteriorly, divided behind by two fissures. Internal antennae exhibiting nothing remarkable, but the portion of the front which separates their fosslets or pits is prolonged into a strong curved spine, which is directed downwards. First joint of the external antennæ very large, and constituting more than half of the inferior floor of the orbit, which it only exceeds anteriorly a very little; its extremity is armed with two stout spines, and carries the succeeding joint at its superior and external border, so that the movable stem of these appendages springs in the internal canthus of the eyes. Epistome wider than it is long; buccal frame the same. Second joint of the external jaw-feet prolonged a good deal, from the internal side. Sternal plastron nearly circular, and its median suture, although sufficiently long, only occupying the last thoracic ring. First pair of feet not a great deal shorter than the others, slender, nearly cylindrical, and terminated by a claw, the fingers of which, nearly styloform, are never hollowed into a spoon-shape nor dilated towards the extremity, and present few or no dentinations. Length of the second pair hardly exceeding once and a half the width of the carapace; the succeeding feet gradually shorter; their terminating joint is styloform, and presents fewer spines and dentations on its inferior border. Abdomen consisting of seven distinct joints in both sexes.

Geographical Distribution of the Genus.—The seas of Europe.

Example, Maia Squinado. Body covered with hooked hairs; length four or five inches; color reddish.

Locality.—The British Channel, the oceanic coasts of Europe, and the Mediterranean.

This species is often dredged up, and the fishermen sometimes eat it, but its flesh is not much esteemed. It was considered by the ancients to be endowed with reason, and was by them represented suspended from the neck of Diana of the Ephesians, as an emblem of wisdom. It is also figured on ancient coins and medals.

Maiella. (Leach.)

Post-frontal portion of the carapace nearly quadrilateral, slightly convex, rounded backwards, and hardly narrowed anteriorly; its fronto-orbital border is straight and very wide, and its lateral borders are armed with spines. Ros-trum lamellar, and directed vertically downwards so as to form a straight angle with the axis of the body and the epistome. Orbits placed above and on the sides of the rostrum; at their superior border a deep slit; ocular peduncles retractile, rather long, narrowed in the middle and prolonged to the extremity of the cornea. The stem of the internal antennæ in bending back remains vertical, instead of becoming horizontal, as in nearly all the other brachyuran crustaceans. The basal joint of the external antennæ very large, and wider in front than behind; the second joint of these appendages is inserted against the edge of the rostrum, at a considerable distance from the orbit. The third joint of the external jaw-feet extremely dilated on the external side, and very deep notched at the point where it articulates with the succeeding piece. Sternal plastron nearly circular. Feet cylindrical and of moderate length, there being little difference in size and length between the first and succeeding pairs.

Abdomen consisting of seven distinct joints in both sexes.

Geographical Distribution of the Genus.—The coasts of the Indian Ocean.

Example, Micippa Philbyra. Length about two inches; color yellowish.

Locality.—The Indian Ocean and the coasts of the Isle of France.

Micippa Philbyra.

Cricureanus. (Guerin.)

The principal characters of this extraordinary genus are found in the disposition of the orbits and of the eyes. The orbital cavities have nearly the form of a long and truncated tube directed outwards, but they do not swell in the eyes as in Pericera, for the ophthalmic ring advances nearly to their extremity, and the ocular peduncle, which is long, slender, and like that of Maia, is inserted so as to be completely exposed, and to be capable of reflection backwards and of applying itself throughout its length against the external border of the basal joint of the external antennæ, a position in which it is concealed under the post-orbital spines of the carapace.

Example, Cricureanus superciliosus; Cancer carpen-tatus (Herbst). Length eighteen lines.

Locality unknown.

Cricureanus superciliosus.

Paramicippa. (Milne Edwards.)

Approaching nearly to Micippa. Carapace nearly as wide as it is long, rostrum bent back below, and the lateral anterior borders armed with teeth. Disposition of the external antennæ nearly the same as in Micippa a, except that the second joint, which is placed on the same level as the upper part of the front, is flattened, enlarged, very sharp, and triangular or heart-shaped. The disposition of the eyes is very different, for they cannot be reflected backwards, and there is no post-orbital mandibular cavity; their pe-
ducule shoots much beyond the edges of the orbit, and presents the same disposition as in the Cricotarctinae, except that they are immovable. Form of the external jaw-foot the same as in Pisa; but the epistome is extremely short. The feet are short, those of the second pair hardly longer than the post-frontal portion of the carapace; the succeeding feet are gradually shortened. The abdomen of the female is composed of seven joints.

Geographical Distribution of the Genus.—The only certain locality stated by M. Milne Edwards is the Red Sea.

Example, Paramicippa tuberculosa. There are some hairs on the feet, and even on the carapace. Colour brownish. Locality unknown.

Pericera. (Latreille.)

Bearing much resemblance to Pisa, but differing from that genus in many characters, and especially in the disposition of the orbits. Carapace very much elongated, and more or less triangular, a little convex and unequal above. Rostrum horizontal, and formed by two great conical horns. Front very wide, and occupying nearly twice as much space as the base of the rostrum. Orbits circular, very small, and extremely deep, directed outwards, and entirely filled by the ocular peduncles, which are enclosed therein as in a sheath, scarcely proceed beyond it, and cannot be reflected forwards or backwards; their upper border is very much produced, and presents a fissure. The basal joint of the external antennae is very large, and presents nearly the same dispositions as in Micippa, for it is much wider in front than it is behind, and terminates by a very extensive transverse border, which is broader to the front or the sides of the rostrum. The position of the movable stem of the external antennae varies a little; sometimes it is inserted under the rostrum, sometimes a little outside the lateral border of that prolongation, but always very near the antennal fossa, and very distant from the orbit. Disposition of the external jaw-feet, as well as that of the sternum plastron, the feet, and the abdomen, nearly the same as in Pisa.

Geographical Distribution of the Genus.—The seas of the Antilles, as far as is yet known.

M. Milne Edwards divides the genus into two sections. The first, consisting of those species in which the anterior angles of the superior orbital border are prolonged into a strong spine, which much exceeds the basal joint of the external antennae; the second, of those species which have the terminal tooth of the basal joint of the external antennae going much beyond the anterior angle of the superior orbital border.

We select as an example, Pericera cornuta, M. Edwards; Cornejo cornuta, Parra; Cancer cornudo, Herbst; Maja Taurus, Lam.; Horned Crab, Hughes, who describes the whole animal as 'covered with brownish plumy hairs.' Length from three to four inches. Locality.—The seas of Barbadoes, and the Antilles.

Pericorn cornuta (reduced one-fourth).

Stenocinops. (Latreille.)

Approaching Pericera, the principal difference being in the disposition of the eyes. Carapace narrow, very unequal, and furnished posteriorly with a large triangular prolongation, which covers the insertion of the abdomen; rostrum formed of two stylem and divergent horns; upper border of the orbit armed with a horn analogous to that of the rostrum, but directed more obliquely. Ocular stems delicate, immovable, and very projecting; internal antennae presenting nothing remarkable, first joint of the external antennae much longer than it is wide, the second slender, and inserted under the rostrum a little in front of the level of the eyes. Epistome nearly square, and the third joint of the external jaw-feet directed towards the external and anterior angle. Feet slender and cylindrical; in the female those of the first pair are hardly stouter than the others, and are much smaller than those of the second pair. Abdomen of the female composed of five joints only, the three rings which precede the last being soldered together. Neither Herbst, Latreille, M. Guérin, nor M. Milne Edwards appears to have examined a male.

Only one species, Stenocinops cervicornis (Latr.), Cancer cervicornis (Herbst), is known. Length from about two to three inches. Locality.—The Isle of France.

Stenocinops cervicornis.

a. Under side in detail; b, termination of one of the first pair of feet; c, termination of one of the succeeding feet.

Menemithius. (Milne Edwards.)

With much of the habit of Pisa, and establishing the passage between that genus and Halimius. Carapace about once and a half as long as it is wide, very much narrowed anteriorly, and of the form of a triangle rounded at its base. Rostrum formed by a large pointed process, which is placed on the median line of the body, and occupies about a third of the total length of the carapace. The anterior angles of the orbit surmounted by a large pointed and horizontal tooth directed forwards; the borders of these cavities without fissures, and exactly surrounding the base of the ocular peduncle, which is short and but little movable. The disposition of the external antennae, of the external jaw-feet, and of the thoracic feet, the same as in Pisa, except that there exists on the lower surface of the tarsi two rows of horned points. The abdomen of the male composed of seven distinct joints; that of the female of five only, of which the penultimate is formed by the soldering of three rings.

Example, Menemithus Monosceles. Length about ten lines; rostrum fringed with hairs; colour brownish. Locality.—The Red Sea and the Indian Ocean.
Halimus. (Latreille.)

M. Milne Edwards looks upon this genus as establishing the passage between the Euryponds, the Pisces, the Monotricha, and the next genus.

Carapace, including the rostrum, a half and a half as long as it is wide, and convex above. Rostrum advanced, and formed of two divergent horns; superior orbital border projecting, and the lateral borders of the carapace nearly always straight, and armed with strong spines. Eyes not retractile, and exceeding considerably the edges of the orbit, which is prolonged backwards with a groove which represents the post-forammary portion. First joint of the external antenna very long, straight, and nearly of the same width at its extremity as at its base; the insertion of the moveable stem of these appendages not covered by the rostrum. The epistome very large, and nearly square. Third joint of the jaws-feet strongly dilated outwardly. Pterygostomian regions very small. Anterior feet slender and of moderate length in the male as well as in the female. The succeeding feet long, slender, and compressed; their penultimate joint enlarged below, and truncated like a subcheliciform claw. Abdomen of the male composed of seven segments; that of the adult female of five.

Geographical Distribution of the Genus.—The East Indian Ocean.

Example, Halimus Arius. Length about an inch.

Acanthonyx. (Latreille.)

Carapace nearly as elongated as in Halimus, but less convex and much less spiny. Rostrum horizontal and formed of two flattened and divergent horns. Orbits circular and occupied entirely by the base of the ocular peduncle, which passes beyond them remarkably. Disposition of the antennae, of the epistome, and of the jaws; nearly the same as in Halimus. Feet short and stout; those of the four last pair very much compressed; fifth joint enlarged below, notched near the end with a hairy tooth, some of which is bent back in manner of a claw; those of the second pair show this structure most clearly.

Geographical Distribution of the Genus.—The form is widely spread. Species are recorded from the Mediterranean, from the Antilles, and from the Cape of Good Hope.

Example, Acanthonyx lunulatus. Length about 8 lines; body smooth, with some fusciculae of hairs on the front; color deep green. Localities, the coast of Provence and the Bay of Naples, where it is found in crevices of the rock overhung with algae.

Epialtus. (Milne Edwards.)

Establishing in some respects, according to the opinion of M. Milne Edwards, the passage between Desira and Acanthonyx, but much more nearly approximated to the latter. Carapace nearly as elongated as in the preceding species, scarcely longer than it is wide, regularly convex and smooth above. Rostrum narrow, triangular, and little or not at all divided; lateral anterior borders of the carapace very short, and forming with the lateral borders a very open angle. Eyes very short, and not projecting much beyond the orbit, which is circular and with entire borders; but the eyes nevertheless appear susceptible of being recurved a little backwards. Antennary region very small; moveable stem of the external antenna inserted under the rostrum, at a considerable distance in front of the orbit, and the basilar joint of these appendages nearly triangular and very narrow at its extremity. It would seem to form the whole of the lower orbital wall. The second joint of these antennae is a little enlarged and nearly twice as long as the third. Epistome small and square, external jaw-laterals and the third joint nearly square, not sensibly enlarged externally, and only a little notched at its anterior and internal angle, where it joins to the succeeding articulation. The visceral pleuron nearly circular. Anterior feet rather strong, and the claws slightly apoan-shaped. The succeeding feet cylindric, and on their penultimate joint a small setiferous tubercle more or less projecting; their last joint is furnished below with two rows of small spines, and has but little flexibility; the tubercle is only well apparent in the anterior feet. The second pair are much longer than the others. Segments of the abdomen varying from six to seven in the male.

Geographical Distribution of the Genus.—The coast of Chili, as yet it is not known.

Example, Epialtus cucullatus. Length three or four lines; colour brownish yellow. Locality.—Chili.

Leucippa. (Milne Edwards.)

M. Milne Edwards sees in Leucippa much analogy to Acanthonyx, and he is of opinion that the former establishes in some points a passage between the Maenis and the Pachyepialtus.

Carapace resembling that of Eurypon, that of Eurypon, save that instead of being unequal and beset with spines as in them, the surface is perfectly smooth; its length exceeds its width by a little, its anterior portion is nearly triangular, and its lateral anterior borders are projecting and truenish. Rostrum horizontal, projecting, very wide, and formed of lamellar horns. Orbits incomplete, so that the eye can be hid therein completely; the superior border of the cavities is straight, and goes to rejoin the base of the tooth from the lateral anterior border of the carapace, so as to form a triangular notch; the external edge of the basalar joint of the external antenna constitutes the internal portion of their inferor wall or partition; but backwards and below they are limited by nothing, and it may be said that there is no post-forammary portion of the orbit. The eyes are small and carried on a very short peduncle; when they are folded backwards they only reach a little beyond the transversal line, and they are applied on the angle of the lateral anterior border of the carapace. The first joint of the external antennae is straight throughout its length, the second and the third are completely hidden under the row...
and this last is nearly twice as long as that which precedes it. Epistome not very much developed. External
antennae with their third joint very much dilated outwards, and slightly truncated at its anterior and internal angle. Feels short, compressed, and surmounted nearly throughout their length by a slender crest. Abdomen in the free male composed of seven segments, and covering the whole of the sternal plastron: that of the male unknown.

Geographical Distribution of the Genus.—This form, as far as is known, belongs to the Pacific Ocean.

The only species known, Leucippa penangiana, is about four lines in length; colour pale grey (female).

(Histoire Nat. des Crustacés, &c.)

MAIKOV, BASIL IVANOVITCH, a Russian author who gained some distinction by his talent for comic poetry, was born at Jaroslaw, in 1725. Although he had received but a very ordinary education, which left him in the utmost distress and poverty, his mind seems to have been of a more than ordinary quickness. He was afterwards employed as a writer of verses and a turn for humourous satire enabled him to distinguish himself by his 'Yelisai', or Bacchus Enragéd, a burlesque poem in five cantos, the hero of which is a yamashibit, or carter, mounted on a horse, to whom Euphrosyne takes under her protection. It is chiefly by this production that Maikov is now remembered; but the fiction itself is so extravagant, and the narrative in many parts so confused, as to detract considerably from the pleasure afforded by the humour displayed in the remainder. He also wrote two poems in a similar vein: one entitled 'Igrok Lombera, or the L'Hom- bre Player', the other, 'The Most Shocking Fall of the Poets'; each of which is in three cantos. His other works consist of two tragedies and several tales and fables. To these last-mentioned productions the epithet 'Moral,' prefixed to them by the author himself, can hardly be said to belong, for one of them at least is most scandalously indecent. There is also considerable grossness in many parts of 'Yelisai.' Maikov died at Moscow in 1778, but the first entire collection of his poems did not appear till 1809, when they were published in one volume, at St. Peters burg.

MAIL (from the French maille), strictly 'the mesh of a net,' but applied in a collective view to defensive armor fashioned by the ancients. The word appears not in the dictionary, translates maille 'a little iron ring.' Mail or malle was also the name given to a bag or small sack, at first probably because made of net-work; since applied likewise to the portmanteau or portmanteau.

MAIL, OAT OF (also denominated the Hauberk or Habergeon), armour for the body, of which there were two kinds, one called chain-mail, the other plate-mail. Chain-mail consisted of a number of iron rings interlaced, each ring having four others inserted into it, the whole exhibiting a kind of net-work already described; and round shaping it, the Pla- te-mail consisted of lamina of metal-like scales, fastened down to a strong quilted linen or leathern jacket. [Ar- mour.] Compare also Gosee's Milit. Antiq, vol. ii.; Meyrick's Critical Enquiry into Antiquity, London, 1824; and his Observations on the Body Armour antiently worn in England, and Upon the Lorica Cutana of the Romans, in Archæologia, vol. xix. pp. 120-145, 335-352.

MAIM (in law, 'mayhem') is an injury done to the body of another person; for which the person causing it is liable to be servicable in a fight, as a means either of defence or offence, and permanently disabling him from offering such an effectual resistance to further attacks upon his person as he otherwise might have done; as if a foot, hand, or finger, or a joint of the foot or hand, be struck off or made crooked or weakened, or if a bone of the head be removed, or a fore- tooth broken or displaced, or if an eye be beaten out, or if any bodily injury be inflicted whereby the party is rendered incapable of making a vigorous defence. But destruction of a jaw-tooth, of an ear, or of the nose, or of other members, the loss of which does not interfere with the means of defence or of offence, does not amount to may- hem. The distinction however is by statutory alterations in the law rendered of little importance.

Mayhem was formerly punished by inflicting the same privation upon the offender which he had caused to the party injured. It was afterwards punishable by fine and imprisonment, as an aggravated trespass. But now, by Wm. IV. and 1 Vict., c. 85, to stab, cut, or wound, if with intent to murder, is a capital felony, and if with intent to main, disfigure, or disable, is a felony punishable by trans- portation for less than 15 years, or by imprisonment not exceeding three years.

Concurrently with these proceedings in the name of the crown, for the purposes of public justice, the party in- jured is entitled to compensation in the shape of damages, to be recovered by action for the malice of trespass, and when the damages found by the jury are not commensurate to the injury sustained, the court may increase them upon inspection of the mayhem.

MAIMONIDES, O R MAIMAITCHIN, [Keramites.]

MAIMBOURG, LOUIS, born in France in 1626, en- tered the order of Jesuits, and studied theology at Rome. On his return to France he was employed as a preacher. Having published in 1652, a work in which he defended the principles of the Gallican Church against the Tridentine doctrines of the Gallican Church, the pope caused him to be excluded from the order of Jesuits. Louis XIV. on this occasion gave him a pension, and he retired to the abbey of St. Victor at Paris, where he died in 1656. The four proposi- tions put by Maimbourg, with which the Gallican Church was identified, are these: 1. That the pope has no authority in temporal matters. 2. That the general councils of the church are superior to the pope. 3. That the pope may err in his decisions, which are subject to the approbation of the councils. 4. That the rights, prerogatives, and canons established in the Gallican Church cannot be altered by the pope without the consent of the clergy and the state.

Maimbourg wrote several works on church history, the principal of which are: 1. 'Histoire du Pontificat de St. Grégoire;' 2. 'Histoire duPontificat de St. Léon;' 3. 'Histoire du Calvinisme,' which has been criticised by Bayle and others; 4. 'Histoire de l'Arianisme;' 5. 'Histoire des Iconoclastes;' 6. 'Histoire du Luthéranisme,' in which he defends indulgences in their fullest extent, as remitting not only the temporal penalty, but the penalty hereafter, both to the living and the dead; 7. 'Histoire de la Ligue.'

Maimbourg is often prejudiced and inexact, but his style is attractive; and several of his works are not destitute of merit. Voltaire, no favourable judge, said of him that 'he had been too much praised at first, and too much neglected afterwards.'

MAIMONIDES, or more properly MOSSES BEN MAIMON, one of the most celebrated of the Jewish Rabbis, was born at Cordova in Spain, about a.d. 1131 or 1133. He studied philosophy and medicine under the cele- brated Averroes, an Arabian physician and philosopher, and also paid great attention to mathematics and natural science, as far as they were known at that time. In addi- tion to a knowledge of Hebrew and Arabic, he is also said to have been acquainted with Greek, and to have stud- ied the writings of the most celebrated Greek philoso- phers.

In consequence of a violent persecution having arisen against his master Averroes, Maimonides withdrew to Egypt, where he devoted himself to medicine, by working at the trade of a jeweller. His great merits afterwards introduced him to the sultan Alphadeld, who ap- pointed him physician to his own household, and treated him with distinguished honour. He died in Egypt at the age of 70.

The learning and abilities of Maimonides have been uni- versally acknowledged both by Jews and Christians, although the independent mode of thinking which character- ized most of his writings, as well as his rejection of some of the favourite absurdities of the Rabbis, rendered him an object of suspicion and dislike among many of his con- temporaries. The Rabbis of Montpelier in particular attacked his opinions with the greatest vehemence, and deprived his works of the approbation of the bulk of the Spanish Rabbis. The controversy con- tinued till about the year 1223, when the celebrated David

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Kimichi was chosen by both parties as an arbiter of the dispute.

The most celebrated of the writings of Maimonides are:

1. Moreh Nechomim, or ‘Teacher of the Perplexed,’ originally written in Arabic, and translated into Hebrew by his disciple Samuel Aben Tibbon. This is perhaps the most valuable work of Maimonides, it contains explanations of difficult passages in the Old Testament, as well as of types, allegories, &c. The original Arabic has not been printed; but the Hebrew translation has been published at various times; the best edition is by Solomon Bat-Levi. 3 Vols., 1742. Moreh Nechomim has also been translated into Latin by Justianus, bishop of Ne bip, Paris, 1529, and by the younger Buxtorf, Basel, 1629, with a preface, which contains an account of the life of Maimonides. Dr. Trenchard has translated an Early English Version of the treatise under the title of ‘The Reasons of the Laws of Moses, from the “More Nechomim’ of Maimonides,” London, 1827.

2. Perush ha-Mishna, or ‘Commentary on the Mishna,’ which was also originally written in Arabic, but has been translated into Hebrew by many Rabbis, and has usually been published with editions of the ‘Mishna.’

Surenhusius, in his edition of the ‘Mishna,’ Amat, 1698-1703, has given a Latin translation of this work. Part of it was published in the original Arabic by Joseph Cardozo, Oxford, in 1689, under the title of ‘Yad Hazakah,’ or ‘The Strong Hand,’ which contains a complete digest of the hebrew law. It is written in remarkably good Hebrew. The best edition is that printed at Amsterdam, 1792, 4 vols. fol. 4th ed. 1794, 4 vols. fol. The title page has a Latin translation of articles of faith,” printed at Worms, 1329, and Jena, 1540.

Maimonides also wrote several other treatises on different points of the Jewish law, and many works on medical subjects. He also translated, at the command of the sultan of Egypt, the writings of the Arabian physician Avicenna, or Ibn Sina.

Maimonides founded a college at Alexandria for the instruction of his countrymen, in which he delivered lectures on the philosophy of the Jewish law.

MAINE UPPER AND LOWER. (BAYARIA.)

MAINA, a district of the Peloponnesus, which occupies the south-west part of the ancient Laconia, extending along the range of the Taygetus to Cape Matapan. The inhabitants of this mountainous district were never subdued by the Turks, but lived in a kind of savage independence, often making incursions into and plundering the neighbouring districts occupied by the Turks. Among them there also occurred the sea pirates. Their chief, who was hereditary, but who had to be confirmed by the council of the principality, or heads of the principal families. The number of the Mainiotes has been variously stated, by some as high as 40,000. Thiersch (De l'Etat actuel de la Grèce) states the eparchy of Maina to consist of 30,000 inhabitants; but this includes merely the southernmost part, or rocky peninsula between the Laconian Gulf and that of Coron; but the name of Mainiote was given in general to all the mountaineers of West Laconia. They are a metheg people, not very docile ones, of the new kingdom of Greece.

MAINE, one of the provinces into which, before the Revolution, France was divided, was bounded on the north by the duchy of Normandie; on the east and south-east by the districts of Chartres, Dunois, and Vendôme, portions of Orléans, and by Touraine; on the south by Anjou, and on the west by Bretagne. Its length may be estimated at 113 miles, from east to west; its breadth from north to south at about 59: its area may be estimated at 3886 square miles, and this includes the department of Maine-et-Loire. It contains about 20,000 inhabitants on an area of about 2 per cent., and giving 170 or 171 inhabitants to a square mile. In extent of surface and in population, whether regarded as to amount or density, it is considerably above the average of the French departments; but in the last respect it far below the English counties with which it may be compared. The capital, Angers, is in 47° 28' N. lat., and in 0° 33' W. long., 161 miles from Paris in a direct line, or 178 miles by the road through Chartres and Le Mans. The department has no mountains, but there are seen very high hills. The high lands which separate the basins of the Vilaine and the Loire occupy a small part of the north-western border, and the southern part is overspread by the prolongations of the heights of Génoise, which bound the Seine on the west. The department consists of the most part of low hills covered with vineyards, or of gently undulating plains, divided by ditches and quick hedges, and adorned with clumps of trees. Its soil varies greatly in beauty and fertility. The eastern districts in forests which encircle the Paris basin; a belt of land in the centre extending across the department, first south-west along the eastern bank of the Seine to its junction with the Mayenne; then south-west from Angers, where the country is occupied by the formations between the valley of the Loire and the sanguine sandstone; the western side is occupied by the primitive rocks.

The whole department is included in the basin of the Loire, which river comes it from east to west. It consists of the department just below the junction of the Vienne and
from westward to Ingande 53 miles; for 23 miles below
Ingande it separates this department (which extends farther
west on the south side of the Loire than it does on the north
side) from that of Loire Inférieure. There are numerous
islands in this part of the river. The Mayenne, the prin-
cipal tributary of the Loire, enters the department on the
north side, and flows south-west, in a circular channel to Angers,
a little below which it falls into the Loire: its whole course
is about 27 miles. The Sarthe enters the department on the
north side, about 12 miles east of the Mayenne, and after
a tolerably direct course of 23 miles south-south-west, joins the
Mayenne just above Angers. The Loir enters the depart-
ment also on the north side, but about 12 miles farther east
than the Sarthe, and flows south-west, though with one or
two considerable bends, about 27 miles into the Sarthe, into
which it falls about five miles above its junction with the
Mayenne. All these rivers are navigable throughout that
part of their course which lies within the department. They
have no feeders of any consequence except the Oudon,
which enters the department on the north-west, and after
receiving the Arzou and the united stream of the Argos and
the Verzé, falls into the Mayenne, midway between the
border of the department and Angers. Its whole course in
this department is about 17 miles, for 10 of which it is
navigable. The Autun or Auton enters the department on the
east side, and flows north-east, and has a westward course of
34 miles in this department parallel to that river, into which it falls at Les Ponts-de-Cé near Angers. It receives the Laton and the Couanon. It is not marked as navigable, though
included in the official statements. All the above tributaries
of the Loire join it on the north bank.

South of the Loire are the Thoué or Thouet, with its
tributary the Dive; the Lambançy; the Layon, with its tribu-
try the Crase; the Erve; and the Dive, which success-
vively fall into the Loire. The Divatte, the most westerly of
them, separates this department from that of Loire Inférie-
ure. The Thoué, the Dive, and the Layon are given in the
official statements as navigable, but only the Thoué is
navigable. The Crase is represented on the maps. The Dive
skirts the south-west border of the department, and its tri-
butary the Moine waters the south-west part. The state-
ment of the inland navigation of the department is thus
given in the ‘Statistique de la France,’ printed by the
French government:

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<td>324</td>
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There were (January 1, 1837) nine Routes Royales, or
government roads, giving an aggregate length of 246
miles, namely, 89 in repair, 144 out of repair, and 13 unfin-
ished. The principal road is that which leads from
Chartres and Le Mans to Angers, and from thence to Nantes.
It enters the department between La Flèche (Sarthe) and Doul, following the right or south-west bank of the
Loire; at Doul it crosses that river and runs south-west
south to Angers. From Angers it runs west-south-west
along the valley of the Loire by St. George’s to Ingande, beyond which it enters the department of Loire Inférieure.
Another road, from Paris to Angers by Autun, enters the
department on the east, and follows the north bank of the
Loire, through Rozières and St. Mathurin. Roads lead
from Angers along the valley of the Mayenne west of that
river, by Le Layon, to Angers, to Longué, and to Les Ponts-
de-Cé, and from the Loire, by St. Lambert, Chemillé, Tremen-
taine, and Chollet, to Bourbon and Nantes. A road from
Olonne (Vendée). A road from La Flèche runs south by
Boué and Longué across the Loire to Saumur, from
which it continues southwest by Montrichard, Bellov
Chollet, Parthenay and Niort (Deux-Sèvres); another
runs southwest-southwest by Boué, Vihiers, Coron, and Vezins
to Chollet. There were at the same date twenty-four
Routes Départementales (departmental roads), with an
aggregate length of 383 miles, of which 143 were in good
repair, 34 out of repair, and 176 unfinished. The number of
by-roads and paths was above eight thousand; their
aggregate length more than 8500 miles. Few departments
would be so well provided with means of communication by
land and water, if the roads were kept in good repair.

The soil is in general fertile, and the quality of waste
land is but small. Nearly two-thirds of the department are
under the plough. The quantity of corn raised is consid-
erably above the consumption of the department. The
exports amount sometimes to more than 500,000 hectolitres,
more than 130,000 being sent for cisterns, 85,000 to
90,000, and yield on an average nearly 500,000 hectolitres,
or above 11,000,000 gallons of wine of fair quality. The best wines are the red wines of Neufchâtel and Chambéry-le-Scé, and the white wines of Varrains, Clos-Morn, Saumur, Rabelais or Rablay, Fayou or Ray, and Bonnezeau. The quantity of meadow-land is considerable,
about 200,000 acres. A considerable number of horned
cattle are reared, and of sheep of a breed crossed with the
merinos. The Thibout goat has lately introduced. The
horse is carried higher in price than in any other part of the
country, and has studied at Angers. The woods occupy about
150,000 acres, and consist chiefly of oak and beech trees.

Game and fish are abundant.

Among the mineral substances are granite, marble of
different varieties, excellent building-stone, sandstone for paven-
ments, roofing slates of excellent quality and great abundance
[Angers], limestone, iron, and coal. The quantity of coal dug in 1835 was 11,536 tons. There was in 1834
only one forge for smelting wrought iron, and six forges for the manufacture of wrought iron.
Charcoal was the fuel employed.

The department is divided into five arrondissements, as
follows:

| Area in Sq. Miles | Population in 1831 | Com-
|------------------|------------------|num-
| 615              | 134,938          | 138,459 |
| 239              | 81,690           | 81,695 |
| 623              | 104,947          | 108,518 |
| 570              | 89,505           | 91,159 |
| 451              | 57,191           | 58,109 |

There are thirty-four cantons, or districts, each under
a justice of the peace.

In the arrondissement of Angers are, Angers (pop. in 1831
25,933 for the town, 32,743 for the commune; in 1836
32,901 for the commune) [Angers], on the Mayenne; St.
Mathurin, Les Ponts-de-Cé, Savennes, Sts. Georges, and
Ingande, on the northern side of the Loire; Rochefort,
and Chalonne, on the south bank of the Loire; and St.
Aubin, on the Layon. St. Mathurin is in one of the
pleasantest parts of the valley of the Loire, and consists of
about 400 houses, the greater part of which are on the
north side of the road from Tours to Angers, the opposite
side of the road forming a kind of terrace immediately
above the bank of the Loire. The town of Les Ponts-de-
Cé, formerly written Ponts-de-Sai or Sé, takes its name
from the ruins of a Roman causeway; extends nearly two
miles in length across the arms of the Loire and the islands
encircled by them. The houses on each side of the causeway
form the town, which comprehends two parishes, forming
one commune, with a population of 2490 for the town, or
6545 for the commune. For many years their foundations of slate, and are in a very dilapidated condition; they
do not however present any marks of great antiquity.

Near the south end of the bridge, on an island of the
Loire, near the ruins of a Roman causeway, extends nearly
from the northern end of the bridge, at the confluence of
the Loire and the Mayenne, is a large Roman camp, capable
of containing 100,000 men, and forming an equilateral
triangle, defended on two sides by the rivers and on the
third by an entrenched bank and moat. Many of the other antiquities have been dug up here. Ingande has
a large glass-house for the manufacture of bottles; it employs
about 500 workmen.

Chalonne or Chalonnes (pop. 2289
town, 4069 commune) is in a delightful situation. There
are the ruins of an old bridge and mill.

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are chiefly boatmen and weavers; the latter make serges for home consumption, or handkerchiefs for the merchants of Chollet. Black marble is quarried near the town.

In the arrondissement of Baugé are, Baugé (pop. in 1831, 3433 town, 3553 whole commune; in 1836, 3400 commune), and Beauvau (pop. 3296 commune), on or near the Coureau [BAUGÉ]; Beauvau; Longué (pop. 1577 town, 4491 commune), and Vernantes, on or near the Latan; Durtal (pop. 3465) on the Loir; Moranne, on the Sarthe; and Jarzé. Durtal or Dureval has the remains of an old castle built by Boucicaut, Duke of Burgundy, containing two towers, having a parapet with machicolations. The other parts of the castle are of later date. There is a good stone bridge of five arches over the Loir.

In the arrondissement of Beaupréau are, Beaupréau (pop. in 1831, 3253 town, 3528 whole commune; in 1836, 3315), and Montreuvault, on the Evre; Jallais (pop. 3163) on a small feeder of the Evre; St. Florent, on the south bank of the Loire; Mauveuil, La Tessouaille, Chollet, (pop. 4637 town, 7345 whole commune) [CHOLET], and Mouton, on or near the north bank; Beaupréau; Chemillé (pop. 3694) on the Hyron; La Molière, Trementine, Tour Landry, and Vezins. Handkerchiefs, linens, and woollens are manufactured at Jallais, St. Florent, Chemillé, Trementine, and Vezins. Le May was destroyed by the Vendéens in the War, but has been restored, and La Tessouaille has a considerable establishment for bleaching linen.

In the arrondissement of Saumur are, Saumur (pop. in 1831, 5977 town, 10655 whole commune; in 1836, 12978 commune), on or near the Loir; Fontevrault on or near the south bank of the Loire; Röricx, on the north bank; Brissac on the Loubansay; Passavant, Neulé, Les Verches, Doué (pop. 2479), M国立, Chavaignes, Thouron, Rablay or Rabale, and St. Lambert, on or near the Loir, Chenonceau, (pop. 1812 town, 1907 whole commune), Coulon, and Puy Notre-Dame, on or near the Thoué; Viélos, Corin, Le Salle, and Grondon. In the old abbey of Fontevrault, Henry II. and Richard I., kings of England, are buried. Doué has the ruin of a priory of King Dagobert; the ruins of what some have regarded as a Roman amphitheatre hollowed out of a calcareous rock, others as the ruins of an old palace of the kings of Aquitaine; a handsome fountain, and in the neighbourhood, an extensive chalk-bed. On the south bank of the Loire below Saumur are the entrenchments, in good preservation, of a camp supposed to be Roman, forming a vast but irregular polygon approaching to an oval. Fragments of Roman pottery and medallions of different emperors, found in the same tract of country, with coins of the same period, the whole neighbourhood, and round the camp are many vestiges of tombs. At Gennes on the south bank of the Loire, a little lower down, are some other Roman antiquities, and especially the ruins of an aqueduct.

The church of Ségé are, Segré and Le Lion d'Angers, on the Oudon; Pouancé, near the source of the Vézère; Candé, on the Erdre, a stream which belongs chiefly to the department of Loire Inférieure; and Châteauneuf, on the Sarthe. Segré is a small place, consisting of a few stone-built streets or rather lanes, in a situation out of the way of any great thoroughfare, and from the badness of the roads scarcely accessible. The population of the town is probably little more than 800; that of the whole commune was, in 1836, only 2120. Le Lion d'Angers is a small town, and lies on the right bank of the Oudon, which is here navigable, a little above its junction with the Sarthe. It is a well built town, favourably situated on the road from Lavall to Angers, with a population probably of 2500. Pianon, the town has some iron-works, with a population probably of about 2000.

The population, where not otherwise specified, is that of the whole commune, and from the returns of 1831.

The manufactures of the department comprehend sailcloth, cotton and woolen goods of various qualities, coarse linens, and other linens called 'chelettes,' coarse woollen cloths, and woollen stuffs, cotton-yarn, paper, leather, and wax candles. There are also mills or presses for walnut, linseed, and other oils. Trade is carried on in corn, textiles, dyes, oil, wines, brandy, vinegar, paper, cattle, slate, marble, and coal.

The department contains the diocese of Angers, the bishop of which is a suffragan of the archbishop of Tours. It is in the jurisdiction of the Cour Royale and the circuit of the Académie Universitaire of Angers, and in the military division, the head-quarters of which are at Tours. It returns seven members to the Chamber of Deputies.

In respect of education this department is very backward: of every hundred young men enrolled in the military schools of 1820, the number could read and write, the average of France being thirty-nine.

This department originally formed part of the territory of the Anjou or Andou, north of the Loire; and of the Pictons, south of that river. In the subdivision of Roman tribes the land was wholly in the province of Lutetian Gaul, the latter in Aquitania Secunda. The chief town of the Andou was called at first Juliomagus; afterwards, from the name of the people, Andos or Andeacavi, the modern Angers. Combronzatium, now Combrés, a village between Segré and Angers, on the road from St. Florent to Saumur, and near the Latan, were towns of the Andeacavi. In the middle ages, and up to the time of the Revolution, the department constituted the greater part of the province of Anjou.

Maine is the most northern of the United States, between a basin bounded on the west by New Hampshire, on the south by the Atlantic Sea, on the east by the British colony of New Brunswick, on the north and north-west by Canada. The United States claim an appurtenance of Maine to the United States, a claim to which the British have adhered. The French claim the coast of Maine and its tributaries west of the boundary-line of New Brunswick (67° 54' W. long.), which is considered by the British as belonging to Canada. This disputed tract extends between 43° 5' 50" N. lat., and 66° 38' 15" W. long., and includes the state of Maine from 45° 5' to 46° 30' N. lat., and between 67° 7' and 71° W. long. Its greatest length, from south-west to north-east, is about 270 miles; and its greatest width, from east to west, about 190 miles. Its surface is of course at about 22,000 square miles, between 3800 and 4000 square miles less than the area of Ireland.

Coast, Surface, and Soil.—The coast-line is a straight line, 236 miles. The southern portion, as far as Casco Bay, is rather high, but the country is very bosomy. The rocks and islands, Casco Bay extends from south to north-east 20 miles, with a mean width of five miles, and is landlocked by a chain of islands. So far the coast trends from south-west to north-north-west, from Casco Bay to the mouth of the Penobscot river, nearly in a northerly direction. It contains numerous wooded islands, some of which are considerable, as Little Diamond, Casco, and Penobscot islands. The mainland runs nearly west and east; but numerous blow-pins stretch out from it southward into the sea, which are divided from each other by narrow and deep indentations, which form excellent harbours. These bays extend from south-west to north-north-west, and are divided into three in breadth, Fox, Deer, and Breaks islands. The remainder of the coast-line, from Penobscot Bay to Passamaquoddy Bay, resembles the coast west of Penobscot Bay, consisting of an alternation of promontories and indentations; but the former are considerably the south and north do not run so deep into the mainland. The most easterly bays are Frenchman's Bay and Machias Bay. Frenchman's Bay is formed on the west side by the extensive island called Mount Desert Island. The approach to the land is from the south; near the mouth of the river is also rendered difficult by numerous rocks and small islands. Though the coast along this shore is very steep in winter, and the numerous islands favour the formation of ice, the harbours are commonly all the year round the strength of the tide, which is 30 to 35 feet, preventing their being closed up. The country gradually from the shore, but rather rapidly, which is prevented by the tide entering the rivers only a few miles, except at Casco Bay, which is very high, but the entrance of the river is also rendered difficult by numerous rocks and small islands.

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East of this branch of the Penobscot the mountains recede northward to about 46° N lat. The region to the west and northward is full of high hills and mountains, of which the highest, Mount Katahdino, rises to more than 5300 feet. These hills, though mostly isolated, occupy a considerable surface, perhaps one-fourth of the region, and about as much is occupied by the lakes. The lowest part of this district is probably only from 600 feet to 700 feet above the surface of the sea, and few, if any, settlement. Inland this is formed in it, except at the southern extremity, in the valley of the Androscoggin, where the hills are of moderate elevation. This region occupies more than one-fifth of the area of the state.

The remainder of the state is occupied by the hilly region, which is well drained by numerous rivers with a rapid course. Swamps are of rare occurrence in this part and of moderate extent, except along the banks of the Matawancook, which is not less than 10 miles wide.

Along the sea-coast, and from ten to twenty miles inland, the soil is of moderate fertility, and frequently intersected with sandy and sterile tracts; but beyond this region the soil improves, and produces plentiful crops of grain, flax, and hemp.

Rivers and Lakes.—The rivers in the southern district have a short course. The principal are the Piscataqua [New Hampshire], the Saco, and the Presumpscot, or Casco. The two latter rise on the southern and western declivity of the range, and principally of the north and south declivities, emptying about 90 and the Presumpscot about 60 miles. The latter traverses a large lake called Sebago Pond, and falls into Casco Bay, a short distance north of Portland.

East of Casco Bay is a deep indentation which receives the waters of the north as far as Orono, and the Androscoggin and the Kennebec. The Kennebec rises in several branches on the eastern declivity of the mountain-range which separates Maine from Canada: these branches, some of which have a course of 40 miles, unite in Moose-Hound Lake, which is 30 miles long and the water is subject to sudden and great changes. Drought is frequent. The mean temperature is about 42°, or about eight degrees less than that of London. In the year the thermometer never falls below zero. In the interior of the hilly region the weather, though so warm, is much more regular. Little is known of the climate of the mountain region. The climate all over the state is healthy; but perhaps the swampy district on the north-east must be excepted.

Productions.—A very dense forest covered Maine in its natural state, and still spreads over the greater part of it, the settlements being yet restricted to a comparatively narrow zone along the sea-coast. These forests, consisting of birch, spruce, pine, hemlock, fir, and grey oak, constitute the principal wealth of the state; timber being its staple. The cultivated fields do not occupy one-twentieth part of the surface. Indian corn, which constitutes the principal food of the inhabitants, thrives well as far as Orono, and the farther north it does not ripen. Other articles cultivated in this state are wheat, rye, barley, oats, peas, hemp, and flax.

The fruit-trees of northern Europe thrive very well, especially pears and apples, as well as most of our vegetables.

Dairy and fishing are both numerous, and afford articles of export. Deer were formerly abundant; wolves, bears, beavers, foxes, and squirrels are still common. The sea abounds in fish, especially cod; and the rivers and lakes are full of fish, especially salmon; large trout are common in the lakes.

Maine, so far as it has yet been explored, is not rich in minerals, but iron-ore occurs in several places.

Inhabitants.—The population amounted, in 1826, to 297,639, but had increased in 1830 to 398,460; which gives about 19 individuals to a square mile. More than one half of that number is occupied in the forests, cutting the timber, and preparing other articles for exportation, as potash, pitch, &c. Many families along the sea-coast obtain a subsistence by fishing. The inshore and more fortunate course cloths and shingles, and on several of the rivers there are numerous saw-mills to prepare the timber for the market, which is floated down the rivers.

In the northern part there are still some few natives, who live mostly on the coast, and travel but little in the lakes. Their numbers seem not to exceed one thousand. The most numerous are the Penobscots, who occupy the upper and part of the central valley of the Penobscot river, in which fish abounds.

Political Geography.—Maine is divided into ten counties and 300 towns, a term which is equivalent to townships. The capital is Portland, situated on a promontory in Casco Bay, south of the mouth of Presumpscot river. It has a large and safe harbour, which is seldom frozen over. Many vessels are built there, and it is a foreign trade. In 1800 its population hardly exceeded 1000 souls, and in 1830 it exceeded 10,000. Along the coast there are several towns with good harbours. South of Portland is Arundel with 2500, Wells with 1500, and York with 5000 inhabitants. To the north of these are Boothbay with 4000, Damariscotta with 2500, Androscoggin, with 2700, Kennebec with 2500, Walthamborough with 2200, and Thomaston on the Penobscot Bay, with 3000 inhabitants, are thriving places on the coast north of Portland. At the last-mentioned places many vessels are built. On Passamaquoddy Bay is a town founded in 1815, and having already a population exceeding 1500. In the interior are also a few towns in the southern and most populous districts; as Berwick on the Piscataqua, with 5000, Paris with 2000, and Augusta on the Kennebec, with 2000 inhabitants.

Bowdoin College, at Brunswick, on the banks of the Androscoggin, with numerous students.
seasgin, 26 miles from Portland, was incorporated in 1796. It is well endowed and has a good library. A medical school, in connection with the college, was established in 1820. There is also a college, founded by the Baptists in 1820, at Waterville on the west branch of the Kennebec; and a state school at Augusta, for the education of the youth of the state, and for the repair of the roads. The Gardiner Lyceum, at Gardiner, was established for the purpose of giving to farmers and mechanics such a scientific education as may enable them to become skilful in their professions. Every town is by law required to have an academy, for the support of which the second class of the common schools, a sum equal to at least 40 cents for each person in the town, and to distribute this sum among the several schools or districts, in proportion to the number of scholars in each. A sum raised by a tax on banks is also appropriated to the support of the academies.

Commerce.—The exports consist chiefly of the produce of the forests, as timber, lumber, boards, and poteash, and of dried fish, beef, pork, and grain. From the 1st of October, 1852, to 30th of September, 1853, the value amounted to 9,187 dollars; foreign produce imported from the harbours, to the amount of 30,644 dollars, is added to this amount, making a total of 1,019,831. The import consist in the same year amounted to 1,380,300 dollars, and consisted mostly of manufacred articles from Europe, and salt, iron, and mineral produce from the West Indies, especially Cuba. This state possesses a larger amount of shipping than any other state in the Union except Massachusetts and New York.

History.—It appears that Maine was discovered by one of the French, about 1604. It was a part of the territory of French, who called the southern part, west of the Kennebeck river, Maine, and the eastern part Acadie. In the beginning of the 17th century the English attempted to make some settlements in the southern district, and succeeded about 1623. The first charter common schools, a sum, and granted in 1639 to Sir Ferdinando Gorges; but in 1652 Maine was united to Massachusetts, under the title of the county of York, and Maine. In 1676 Massachusetts bought the country from the family of the Gorges, and from that time it remained an English possession, except that small part that still continues the account of the eternal disputations between the English and French, until in 1712 England obtained its full possession by the peace of Utrecht. Massachusetts opposed the attempts of the inhabitants to separate Maine and Massachusetts, but in 1619 it gave permission to the French of Maine to decide this important question, and the majority of votes being in favour of a separation, a constitution was formed and adopted, and in 1620 Maine became an independent country.

The legislative body consists of a Senate and House of Representatives, chosen annually by all the male citizens of 21 years of age and upwards. The executive is in the hands of a governor, who is chosen annually. Maine sends two senators to Congress, and seven to the House of Representatives at Washington.

(Darby's View of the United States; Warden's Account of the United States of North America; Pitkin's Statistical View of the Commerce of the United States of America.)

MAINE NOTES. [Maine.]

MAINEyON, FRANCOIS D'AUBIGNE. Marquise de, was born at Nort in 1635. Her father, Constant D'Aubigné, son of the friend of Henry IV. (Archbishop of Rouen), was a nobleman of great character. He was in prison at Nort at the time of the birth of his daughter; he afterwards went, with his wife and child, to the West Indies, where he died in 1643. His wife and daughter returned to France in a state of destitution, but Madame de D'Aubigné was supported by her aunt, and educated at the Calvinist communion, which was that of her paternal relatives. After her mother's death, her godmother, Madame du Neillant, took her into her house and became her mother. Becoming a nun, she won the confidence of Madame du Neillant, and her interest was never lost on her. When Scarron died in 1660, his widow was left poor; but some of her friends recommended her to Madame de Montespan, the mistress of Louis XIV, as governor to her children by the king. She thus became known to Louis, who gradually conceived great esteem for her, especially for the care which she bestowed on the Duke of Maine, one of his sons. The king made her a present of 100,000 livres, with which she purchased the estate of Maintenon. Madame de Montespan's temper was such that Louis XIV. and the minister of the king, the marquis de Louvois, had much to endure from the imperious favourite. Louis himself was often obliged to interfere to restore peace. By degrees the king, who had grown tired of Madame de Montespan, became more strongly attached to Madame Scarron, whose character and disposition were more agreeable to him, and he ordered her to be placed in the school of charity, great forbearance and much tact. The king at length conferred on her the title of Marchioness of Maintenon. The queen consort of Louis was now dead; Louis was no longer young, and he felt the want of an intimate friend; and Madame de Maintenon was elected to fill his thoughts. Having consulted his confessor, Father La Chaise, the latter advised a private marriage; and in 1665 Louis, who was then forty-seven years of age, was secretly married to Madame Scarron, who was fifty-two years old, by the archbishop of Paris, in presence of the Prince de La Chaise and two more witnesses. The marriage was always kept secret, and Madame de Maintenon herself never avowed it. Louis however lived openly with her, visited her several times a day, attended her masses in her apartments, and sometimes in their seclusion, asked her advice upon state affairs. Without appearing to seek any political power, but rather professing to shun it, she undoubtedly exerted great influence over the king in matters of state. Louis XIV. was a man of a cool and collected mind, and was not easily carried away. Madame de Maintenon, who has been called by many writers, and by St. Simon among the rest. She was ambitious, but not interested, arrogant or vain; she was fond of religious discussions, and she exerted considerable power over the conscience of Louis XIV., and the advice which was ascribed to her by common report, and she was accused of many faults committed by the cabinet. But it would be very difficult to discriminate between those acts in which she really had a share, and those in which her influence was only an interest. Madame de Maintenon has been justly dealt with by many writers, and by St. Simon among others.

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(Lettres de Madame de Maintenon, 6 vols. 12mo, Paris, 1812; Lettres inedites de Madame de Maintenon, Paris, 1826; Lecomte, Essai sur l'Établissement d'un musée historique et philatélique, No. IV., Observations sur le Mariage de Louis XIV., et sur la vie de Madame de Maintenon.)

MAINTENANCE is defined to be when a man maintains a suit or quarrel to the disturbance or hindrance of right; and if he who maintains another is to have by agreement part of the suit and or compensation. In suit, it is called Chaupiry. Maintenance was an offence at common law, and has also been the subject of several statutes. By 32 Hen. VIII. c. 9, no person shall bargain, buy or sell, or by any means obtain any pretended rights or titles to any lands, and of lands not yet occupied or cultivated by any person, by whom he claims the same, have been free from any kind of prejudice of right, or of the reversion or remainder thereof, or take the rents and profits thereof, by the space of a year next before the bargain or sale, on pain of the seller forfeiting all that he shall pay to the buyer, and all that the said buyer shall pay to the seller, and to the buyer, knowing the same, also forfeiting the value of such lands. The perfected object of the statute was to prevent the inequities, oppression, and vexation which the former men as the consequence of the buying of titles and other interests in lands not being in possession of the lands sold.

A man may assign his interest in a debt after he has instituted a suit for its recovery, and such assignment of itself is not maintenance. But if the assignment be made on condition that the assignee give the assignor any indemnity against the costs of the suit, already incurred or to be incurred, this makes maintenance.

(Cowis's Digest, 'Maintenance.')
MAINZ, or MENTZ, or in French Mayence, the Roman Magnaustica, or Moguntiacum, is the capital of the province of Rhenbessen in the grand-duchy of Hesse-Darmstadt. It is situated in one of the most beautiful and fertile parts of Germany. It sits on three hills; the Rhine, a little below the junction of the Maine with that river, on the slope of a hill, and it also occupies a long slip of land on the banks of the river: 50° N. lat. and 8° 11' E. long. Being connected, by a bridge over the Rhine, with the strongly fortified vil-

lages of Prudingen and Clerp, it is commanded by three forts and holds the Rhine against France. The extent of the works, which were much en-

larged by the French while the city was in their possession, including the work called the Weissenseur Schanze, but excluding Kastel, is 14 1/2 leagues in circumference and 1 1/2 miles deep. Among the principal works are the citadel, with the Eichelstein, and that which is called the Hauptstein, an extremely strong work projecting beyond all the rest, on an esca-
exence called the Linsenberg. Kastel, which is united to Mainz as an outworks has very extensive fortifications, which consist of four strong forts besides the strongly for-
tified island of Petersau, including which latter the works are of greater extent than even those of Mainz itself. The area of Mainz is 6,813 acres, which contains 4,714 houses and 1,159 gardens. On the land side there are four great gates, with double drawbridges, and toward the river several gates. The Rhine runs from south to north, and the Main from east to west. About a mile above the junction of the two rivers is the famous bridge of Mainz, formerly called the Holstenburg, and now the Landstrasse, which was built up by a bridge of boats, defended by a strong 18t de pont. On the last settlement of the affairs of Germany by the Congress of Vienna, Mainz was assigned to the grand-duke of Hesse-Darmstadt, but it was decided that, as a fortress, it should be kept by a force of 11,000 men, divided between 2,000 Austrian, Prussian, and Hanseatic troops. This garrison in time of peace consists of 6000 men. The military governor, who retains his post five years, is alternately an Austrian and a Prussian general. It has been objected to this garrison that it is not large enough, as it requires for its defence a garrison of 30,000 men.

Mainz is on the whole an old-fashioned and ill-built town. The streets, with three or four exceptions, are narrow, crooked, and gloomy, though there are many handsome private houses, but the public buildings are few. The principal square and market-places is the Parade, which is surrounded with avenues of trees. Of the 11 churches, of which only one is for the Protestants, the most remarkable is the cathedral, the church of St. Endres, which is considered a model of beautiful ecclesiastical architecture, St. Peter's church, and St. Stephen's. The cathedral, founded in the twelfth century, has frequently suffered by fire. It is 350 feet long, 140 wide, and has 14 altars and 29 chapels. It was begun by French in 1790, and under the government of Napoleon it was intended to pull it down, but it has since been gradu-

ally repaired. Nothing however remains of the great trea-

sures which it formerly possessed, or of its library, and even many of the fine monuments have been plundered. The public edifices, we may mention the magnificent grand-ducal palace (formerly the house of the Teutonic order), the arsenal, the palaces of the commandant and of the vice-
governor, the episcopal palace, the new theatre, &c. A great fortress, that it has taken the former university, and there are several schools. The city library consists of above 90,000 volumes, and in the same building there are cabinets of medals, and of natural history, a collection of philosophical and mechanical instruments, a gallery of pic-
tures, of which many are by the ancient masters, statues and votive tablets, and above 6000 other works. The Eichelstein, in the citadel is sup-

posed to be a monument in honour of Drusus Germanicus, brother of the emperor Tiberius. Mainz is the seat of one of the chief bishoprics in Germany, and the republic said to have been built by the same Drusus. There are pleasant walks on the Rhine; the environs are very beautiful and the pro-

spects over the surrounding country magnificent. The city has few manufactures; but the trade in wine is consider-

able.

The history of Mainz is remarkable and interesting. Its origin is supposed to have been under the Mediomatriab, who inhabited the left bank of the Rhine, and whose do-

main ended in the year 72 A.D. The Drusus founded the fortress of Moguntiacum, on the site on which Kastel now stands. The town which sprung up near it did not extend, under the Romans, to the Rhine. It was destroyed by the Vandals in 406, and lay in ruins for some centuries, till it was rebuilt by the kings of the Francs. A new and ill-fated epoch in its history commenced with Boniface (Bonaccius), the apostle of the German, who was the first bishop. Some however affirm that Mainz has had 114 bishops and archbishops, from Crecenhous, who they say was a disciple of St. Paul's, to sufferers martyred, A.D. 103, which none of the old histories mentions. In 1785 it became the capital of the French department of Montferrat; in 1816 it was ceded to the grand-duke of Hesse. Among the remarkable men born at Mainz are the Minnesinger Frau-

enhub, and Gutenberg the inventor or improver of the art of printing, in 1450. The city is named, and contains a statue erected at the expense of the Cassino club. The population of Mainz is 32,000, of whom about 2600 are Protestants, 1700 Jews, and the remain-

M. K. Curtius, Geschichte und Statistik von Hessen; Werner, Der Dom von Mainz, and Schickes der Stadt Mainz, &c.; Hassel, Stein, Cannabiah, &c.)

MAIRE, JAMES LE, was the son of a merchant esta-
blished at Egmont, near Guernsey, or Paris, in 1590.
A Dutch East India Company, which had been formed about that time, had obtained a declaration from the states-
genell operation, by which every Dutch vessel not belonging to the company was prohibited from doubling the Cape of Good Hope, some pairs of ships in the South Sea trade operated to the Cape, and after some orders from the government, Hoorn formed a joint-stock company for the purpose of trying to effect a passage to the East Indies without doubting the Cape. Among these was Isaac Le Maire, the father of James. Two vessels were equipped for sea; the command of them was given to Isaac and to his son James, the navigator, and James Le Maire was sent with him as the com-

missioner of the company. They set sail in June, 1615, and having passed the entrance of the Strait of Magalhaens in the following January, they continued their voyage southward and crossed the southern tip of South America, which was then undiscovered. They doubled the Cape of Good Hope on the 24th of January, and gave it the name of Le Maire. In a few days they doubled Cape Horn, being the first navigators who accomplished this undertaking. In traversing the Pacific from the east to the west, they sailed through a part of it, where only a few scattered islands occur. At last they arrived on the southern shores of Terra del Fuego. They landed on land near a cape called Good Hope was named after Schooten. After visiting Gilolo, one of the Moluccas, they proceeded to Batavia, then called Jaccatra. From Batavia they sailed for Europe, in a vessel belonging to the East India Com-

pany, being on their return to the Cape, and arrived in England on the 31st of December, 1616.

MAIRE LE, STRAITS OF, lie in the Southern Atlantic Ocean, on the eastern shores of Terra del Fuego, between 55° and 59° 30' S. lat., and are traversed nearly in the middle by the Beagle Channel. In the 17th and 18th centuries, they were frequently used by the Dutchmen to trade to Terra del Fuego, and in the 19th century, they were traversed by the schooners, and ships of commerce, and at present, they are the chief resort of the youthful countrymen, particularly for the study of the law. On his return to Scotland he was successively employed by King James V, the regent Arran, and Mary of Lorraine. Of the early part of his life however few particulars are known, other than the date of his birth and the date of his death.
comencees: and about the same time he appears in the sederunt of the court as an extraordinary lord of session.

Not many years afterwards his eldest son William, having returned from the Continent, whither he had been sent, like his father, in early life, was appointed by the queen's secretary of state; but, afraid, as it seems, of his safety, that troublesome period, he left her and joined the Protestantists in October, 1559, and in August, 1560, acted as speaker of the Convention, in which the Roman Catholic supremacy of Scotland was destroyed. In the meantime his son Sir Richard had become blind. At what time this calamity overtook him is uncertain: it was probably about the year 1559, in the end of which he concludes his History and Chronicle of the House and Surname of Seton. He held however the decree for the court of session; and what is remarkable, from about the period of his becoming blind he began to write and collect Scottish poetry. In 1562 he was made lord privy-seal; but this office he in a few years afterwards resigned in favour of his second son. In 1563 he was appointed an ordinary lord of session. His eldest son William had been some time before in the like situation, being in 1561 appointed an extraordinary lord of session, and in 1565 advanced to the place of an ordinary lord of the same court. Other particulars of his address and position in the cause were curiously saved to him in the political broils of that period; but nevertheless, in 1570, when his sons were denounced as rebels by the king's party, his lands were ravaged by the English. He lived however to know that his house was reinstated in its antiquated position on the court of session, and he died only a month or so before he was advanced to the high office of chancellor of Scotland. He died on the 20th March, 1566, with the character of a most unspotted and blameless judge, one valiant, grave, and worthy, as is in his possession of a writer who has been a collector of Scottish poetry that he is now chiefly remembered.

His collections consist of two volumes: a folio, comprising 176 articles; and a quarto, of 96 pieces, in the handwriting of Lord Maitland. They are now in the Pepysian Library, Magdalen College, Cambridge. His poetical writings were for the first time printed in an entire and distinct form in 1830, in one quarto volume, by the Maitland club, a society of literary antiquaries so designated from this distinguished collector of Scottish poetry.

MAITTAIRE, MICHAEL, was born in France, 1688, of Protestant parents, who settled in England at the revolution of the edict of Nantes. Maittaire was educated at Westminster school under Dr. Buckland, and was sent to the university of Oxford, whither he afterwards went, a warm friend and patron in Dr. South. He took his degree of M.A. in 1696, and from 1691 to 1699 discharged the duties of second master in Westminster school. In 1699 he resigned that appointment and entered on the study of law, intending to follow literary pursuits. He died August 4th, 1717, at the age of 79.

Maittaire was a learned and laborious scholar. He edited many of the classical authors, with useful indexes, and also wrote several works, of which the most important are—De Grecia et Latina, in dictione latina, ad notas explicat, Lond. 1672; Euphranorium Historiae vitarum aepulorum, Lond. 1675; Historia Typographorum aliquot Parisiensium vitae et librorum complectionis, Lond. 1677; Americanae Typographiae ab artis inventoriæ adjunctorum, 1647; Marcellus Oxoniensis, Lond. 1723.

MAIZE, or Indian Corn, is a plant commonly cultivated in many parts of the world; but it answers a purpose-similar to that of wheat in more northern countries. It is the Zea Mays of botanists, a monocious grass, of vigorous growth, with stems not more than two feet high in some varieties, and reaching the height of eight or even four feet in others. The leaves are broad and long, arising from large rough sheaths which surround the stem. The male flowers grow in loose, terminal, compound racemes, standing clear of the leaves; the females are arranged in numerous rows on a spike, which is wrapped round by several folds of sheathing bracts, which press upon the grains and give them the flattened figure they eventually acquire when ripe. Each grain has a long thread-like style, which projects beyond the enveloping sheaths; and as there are hundreds of them upon each spike, the whole form a long tassel, which looks as if made of silk. The ripe grains are regularly arrayed one over the other in rows, are compressed at the sides, flattened at the apex, and of various colours. Their most common colour is pale yellow; some are red; some party-coloured, and there are varieties with brown and even purple grains. A plant normally bears two ears, the grains of which vary greatly in size. The largest ears in America contain at least 600 grains.

This plant in its wild state is met with in Paraguay, according to Augustus de St. Hilaire. It was also found in the continent of North America by the European the first time it was discovered. A second species, called Carinaria in Mexico, is said to occur in Chili; but little is known of it further than that the leaves are serrated, and all the parts much smaller than usual.

The cultivation of maize is a particular line on the continent of Europe north of which the maize does not thrive. To the south of this line, which passes through Nancy, formerly the capital of Lorraine in France, it has a great measure of success, and is the common produce of the English and French vineyards. It is grown in the shape of baked bread that maize is most generally used in Europe, but in baked messes and soups, as in paes with us: it is not only the ripe grain which is used, but the ear in every state, from that of a green vegetable to that of a baked crust. Thus it is employed in place of croutons or bread, or used in some way or other to complete the meal. Nothing can be better than ripe maize to fatten hogs or pigs with; and the young stem cut down quite green gives excellent cattle.

A plant which gives such a return cannot be expected to ripen its grains in poor land, or without attentive culture. The land must be naturally fertile, or made so artifically, as must be so prepared as to be in readiness when the manure must be given to it. A light, most, most warm soil suits this plant best. It thrives well on land broken up from grass, as is the case with most plants. A light, sandy soil also grows well, and the plants thinned to a considerable distance, the intervals may easily be ploughed or stirred with the horse-hoe, by which means the seeds are kept down, and the earth fertilized by exposure to the air. The seed should be taken from the largest and best grains, and should be selected by eyes, and not rejected as loose-cast. They should not be taken off until it is warm, and then steeped in water to soften them. If the seed is steeped in brine and dried with quicklime, as many are done with wheat, it might probably be advantages in this grain, especially so to small grains, as this is often a great want in this crop, but this is not often done. The time for sowing maize in the south of France is the month of April; farther north it is sown later for fear of frost, which would entirely destroy the plant on its first appearance above ground; this is of the greatest importance. The seed is not sown to the size of a foot apart, but in very rich soils three feet is better. In this case three or four ears may be expected to ripen on each stalk. In thin soils on a raised mound, the earth is raised in ridges, or, what is better, a mound is raised by the ridges being thrown together; in the latter case three or four seeds are put into each hillock, which are two to three feet apart. As the plants rise, only one, or at most two are left in each hillock, and the earth is carefully moulded up to the stems; thus a deep dry bed is provided.
As the plant, and there is sufficient moisture from the impervious subsoil. This method might perhaps be adopted with advantage in England, in experiments on maize, where the situation admits of its cultivation. Maize, however sown, must be repeatedly hoed. At the first hoing the plants which are too close together, and where there is deficiency they are planted in: at least, this is the practice in Europe; but in America the general practice is to plant fresh seeds in the vacant places. When the plants are a foot high, there is a second hoing; the weeds are then cut up, and the earth is drawn to the plants. In a dry season, cut the stems. The reason of this is that there are several joints very near each other at the bottom of the stem, and from each of these fibres strike out into the soil which is brought into contact with it, and form additional roots to the main root of the corn, and the maize is raised more or less from the stem. When the flowers are ready to expand, a third hoing is given, to kill weeds and open the surface of the soil slightly. The earth which is raised around the stems should be flattened a little at top, and very slightly below; these also are very much placed to cut of dry seasons. If any tillers or shoots appear from the bottom of the stem, they should be carefully removed, as they diminish the nourishment which should go to the main stem. A fourth hoing and earing up at the time when the flowers are set, is what is done in England, like grass and corn being cut, with a brush, and then the ears are gathered. The growth of irrigation, the growth of maize is most rapid and luxuriant. The time to cut it is when the male flowers are just appearing out of the sheath in which they are enveloped in the early stage of their growth. It may be dried or left for hay, and when it is dried, and if it does not sprout in this state it must be bruised or soaked when given to cattle, as the stems get very hard in drying; they may however be cut, as the cane-tops are in the sugar-plantations.

MAJOR (Latin), Greater, in music, a term applicable to the imperfect cadence at the interval of the 3rd. It is also used to distinguish the mode which takes a major or sharp 3rd, from that having a minor or flat one. The major mode has always a greater 3rd—i.e. a 3rd consisting of two tones and the minor mode has always a minor 3rd—i.e. a 3rd consisting of a tone and a semitone. [Key; Mode; Third.]

MAJOR, a field-officer next in rank below a lieutenant-colonel, and immediately superior to the captains of troops in a regiment of cavalry, or the captains of companies in a battalion of infantry. His duty is to superintend the exercises of the regiment or battalion, and, on parade or in action, to carry into effect the orders of the colonel. The major has also to regulate the distribution of the officers and men; he is the person to whose care is committed that for which he has a temporary charge of the effects appertaining to any individual of the corps, in the event of the absence or death of such individual.

This class of field-officers does not appear to have existed before the beginning of the seventeenth century; and, at first, such officers had the title of serjeants-major, a designation borne at an earlier time by a class corresponding to that of the present majors general of an army. (Grose, vol. i., p. 245.)

No mention is made of either lieutenants-colonel or majors as field-officers in the account of Queen Elizabeth's army in Ireland (1600). But Ward, in his Animadversions of Warre (1639), has given a description of the duties of this latter class, under the name of serjeants-major, from which it appears that those duties were then nearly the same as are exercised by the present majors of regiments. They are stated to consist in receiving the orders from the general commanding the army; in conveying them to the colonel of the regiment; in subsequently in transmitting them to the officers of the companies; also, in superintending the distribution of ammunition to the troops, and in visiting the guard by day or night. A brigade-major is a staff-officer who performs for a brigade, or in any duties corresponding to those of a major in a regiment or battalion.

The prices of a major's commission are—

In the Life and Royal Horse

Guards . . . . . £350: daily pay £1 4 5.

In the Dragoons

4575 0 19 3.

In the Foot Guards (with the
rank of colonel) . . . 8300 1 3 0.

In the regiments of the line . . . . 3200 0 16 0.
A sergeant-major of a regiment is a non-commissioned officer, who in general superintends the military exercises of the soldiers: on parade, he has the care of dressing the line.

MAJOR-GENERAL. [General.]

MAJOR, or MAIR, JOHN, was born at the village of Cloghern, near North Berwick, in 1540, and died in 1620. He appears to have studied for a short time both at Oxford and Cambridge, but he always regarded the university of Paris as his true alma mater, whither he proceeded in 1593, and where he attached himself successively to the Colleges of St. Benets, St. Michael de Montaigu, and St. Sever. Having been made a doctor of the Sorbonne in 1595, he betook himself to the teaching of the scholastic philosophy, or divinity, in the college of Montaigu, and in this department soon came to be reputed one of the most distinguished scholars of the college. His philosophical writings indeed have been rated by Dupin and others in later times as the ablest that have come down to us from that age.

In 1596 he returned to his native country, and officiated for some time as one of the regents or masters in St. Salvator's college, St. Andrew's; but a dispute with some of his colleagues soon induced him to go back to Paris, and there he remained till 1599, when he was induced once more to return to Scotland by the solicitation of his friends. He afterwards left. He became eventually provost or principal of St. Salvator's college, and appears to have died in that office about the year 1550.

Major's works are all in Latin, and the principal are contained in the Posthumous Work of the Right Honourable Sir William Temple, bart., a collection of his epistles, sermons, and other philosophical and theological works, with an account of his life, by his son. His works are noted for their learn, and his epistle to his younger son, Mr. Henry Major, is especially valuable. His Life of Knox, Edinb., 1718 (vol. iii. p. 345), has given some extracts from Major's works, which exhibit the liberal complexion of his opinions. The well-known epigram of Bucicchan however, in which he designates himself *Solo cognitos, non me noscum* (I am but a great scholar and wish to have no very high opinion of the intellectual endowments of his old master.

MAJORCA. [Mallorca.]

MADRAS. [Anatolia.]

MAKRIZI. [Ahmed Al-Makrizi, a celebrated Arabic writer, was born at Cairo between A.D. 1358 and 1368. His family originally lived in one of the suburbs of Bokhara, near Bukhara, whence he derived the surname by which he is usually known. We have very few particulars of his life; but it appears that he resided at Cairo, during the greater part, if not the whole of his life, that he discharged at different times the duties of several public offices, and that he died, at an advanced age, in A.D. 1442.

Makrizi wrote several historical works in which copious extracts are given in De Sacy's Arabic Christomathy. The most important of these works is his *Description of Egypt*, which gives an account of the history of the country from its earliest period to the time of the French occupation, and contains a description of its natural history and antiquities, and of the manners and customs of the inhabitants. De Sacy, in his notes added to his translation of Abd-Allaf, published with the title of *Relation of Egypt*, Paris, 1810, has made many interesting quotations from the work of Makrizi.

The only works of Makrizi which have been printed are, as far as we are aware: *Historia Monete Arabicae*, in Arabic, 1613, printed by Tychsen, Rostock, 1707, of which a French translation, much superior to the Latin one by Tychsen, was published by De Sacy, under the title of *Treatise on the Money of the Mussulmans*, Paris, 1797; *An account of the Mohammedan Princes in Abyssinia*, by Rain, Leyd., 1791; *Narration of Expedition on Cretan Francisque adversus Dimyshulam ab A.C. 708 ad 1221 subscripsis*, in Arabic and Latin, by Hamsaker, Amst., 1624; *Historia Coptorum Christianorum in Egyptia*, Arabic and Latin, by Weitzer, 1628.

MALABAR, a province of Southern India, lying between lat. 10° 25' and 22° 20' N. lat., and between 72° 15' and 76° 5' E. long., is a state on the south-west coast of India, with its greatest breadth about 118 miles, and its breadth does not in any part exceed 25 miles: its area is about 7250 square miles. It is bounded on the north by Canara; on the east by Coor, Wynad, and Coimbatore; on the south by the territory of the Coorg, and on the west by the Indian Ocean. Its production is adapted for the cultivation of rice. The whole of the province lies immediately below the western ghats.

The pepper-vine grows most abundantly along the coast-line of Malabar, and its produce forms the chief article of export. Ayrum, or a large succession of Virum, is sent to Europe, but large quantities are also exported to China, or conveyed by native traders to Arabia and the north-west countries of India. Sandal-wood, which is another principal article of export from Malabar, is mostly introduced within the western ghats. Jaggery, a coarse kind of sugar, is made in large quantities from a species of palm, the *brut-prost*, and is commonly sold at a very low price, less than three shillings per hundredweight. Part of the coast is covered with mangrove timber, of which a prodigious revenue is drawn by the government.

The province is divided for the purposes of internal government into 2212 villages, which do not however consist, as in most other parts of India, of aggregations of houses, but rather of territorial divisions answering more to our parishes. The dwellings of the natives are the most scattered over the face of the country. Almost the only collections of houses are found in the seaports. The climate of Malabar is very favourable for agriculture, and the produce of which a revenue is drawn by the government.

The province consists of the northern part of the peninsula of Hindustan in which the ownership of the soil is recognized as belonging to individuals, and not to the supreme government. Landed property is held in this province, as well as in Canara, Cochin, Travancore, and Bednore, on tenures which from time immemorial have been established, and which cannot be annulled without the concurrence of the native proprietors. It is not correct to say that the English government has not committed the same error with regard to those provinces as it has in other parts of India, that of considering the property in the land to belong to the state. The succession to lands in Malabar and the mode of acquiring them are those that regulate the succession to other kinds of property.

The population consisted almost wholly of Hindus until the invasion of Hyder Ali in 1760, since which time the ahas been an ascension ofMohammedans. Census returns of 1836 show that not in any part of the Hindu population the distinctions of caste are kept up with the greatest scrupulosity. The distances within which an individual of an inferior may not approach one of a superior caste are almost indistinguishable. The most curious names of the castes are—Lat., Nambrories and Brahmas: 2nd, Naurs or Sudras; 3rd, Tiars, who are free cultivators of the land; 4th, Maleras, who are musicians and warrors (these are free also); 5th, Paliars; these are slaves and are properly below all caste; but there is an otest...
which in a few years became a great commercial place, Malacca sunk to insignificance. The town and fort of Malacca, with its dependancies, were ceded to the English by the treaty between the British and Netherlands governments of March, 1824. Besides the town, this colony consists of a tract of country about 40 miles long and 30 miles wide; its surface may be about 1000 square miles. The country along the sea-coast, to the distance of 3 or 4 miles inland, is flat and swampy in many parts, and mostly covered with wood. The soil is not distinguished by fertility; and though rice is raised, this article, as well as other grain, is annually imported from Bengal. Fruits succeed exceedingly well, as also carobs, almonds, oranges, and many others. The cultivation of coffee has been introduced lately. Pepper is grown to a considerable amount, and 4000 piculs (1 picul = 133.5 pounds) are annually exported. The amount of gold annually got from the mines is estimated at 4000 piculs. There is also gold.

The bulk of the population consists of Malays. There are some Hindus and Chinese, and also some descendants of the Portuguese and Dutch. In 1822 the population in the town of Malacca amounted to 12,000 souls, and in the whole colony to 22,000. After the British got possession of it, the number decreased by emigration to Singapore, but the population has recently begun to increase, and is said to be 36,000. (Crawford's Journal of an Embassy to the Courts of Siam and Cochinn China; Finlayson's Journal of a Mission to Siam and Hout.)

MALACCA, THE STRAITS OF, separate the Malay Peninsula from the islands of Sarawak and Brunei, in the north between Diamond Point on Sumatra and the island of Pulo Penang near the shores of the continent, about 5° 20′ N. lat., and terminate on the south between the most southern cape of the Asiatic continent, the Tampoom Burus and the islands of Carimun or Kruman (1° N. lat.). Its direction is from north-west to south-east, between 97° 30′ and 103° 40′ E. long. At its northern extremity it is nearly 180 miles wide, but southward it grows narrower, and opposite the town of Malacca, from which it does not, however, extend 36 miles wide, and both the shores are visible from the middle of the channel, though they are rather low. The strait preserves this width to its southern extremity. Being enclosed on the south-west and north-east by countries in which the mountain-ranges rise to great elevations, and are covered with dense forests, and necessarily stripped from the branches for the facility of navigation; hence most probably originated the fables with their early accounts are accompanied.

The banana groves of the Malay Peninsula extend along the western coast of the Malay Peninsula, in 2° 14′ N. lat. and 102° 12′ E. long., on the straits called by its name. It is on the northern banks of a small river. The roads along the shores are good and safe. South of the town there is a small island, between which and the continent is a harbour, where, during the south-west monsoon, vessels not drawing more than 16 feet water are secure. The bar at the mouth of the river has only water enough during high tide for boats. Many of the houses are tolerably well built, but the greatest part, which are inhabited by Hindus, are composed of bamboo and mat huts. On the southern side of the river are the ruins of a fort, now converted into a public promenade.

Malacca was built in 1296, by Sri Isander Shah, the king of the Malayas, after his expulsion from Singapura, a town situated on or near the site of the emporium now called Singapore. It was first visited by the Portuguese in 1507, and taken by Alfonso Albuquerque in 1511. It was then a large commercial town, and the harbour contained 800,000 inhabitants. It was a flourishing town in 1640, when it was taken from the Portuguese by the Dutch, upon which event its commerce began to decline, being partly transferred to Batavia. But its position on the great thoroughfare between the Gulf of Bengal on one side and the Indian Archipelago and China still gave it some importance; though the establishment of a British colony in the island of Pulo Penang, in 1876, diminished its commerce. It was taken possession of by the British in 1795, at the peace of Amiens, but soon afterwards taken possession of by the British having founded the town of Singapore in 1819, P. C. No. 890.
after his second return from Persia into Judaea. (Compare Mal. ii. 8-11, with Nehem. xiii. 23-29; Mal. iii. 8, 10, and Nehem. xiii. 5, 12, x. 35, 39, with Nehem. xiii. 6-13; Mal. i. 8, 11, 13, ii. 8, with Nehem. xiii. 15, &c.) Hence Viritunga and others have concluded that Malachi prophesied during the later part of Nehemiah's administration (about n.c. 432 or 420).

The object of this prophecy is to reprove the people and the priests for their irreligion. To the complaint of the people, that God dealt unkindly with them, the prophet replies by showing their prosperity with the calamities that had befallen the Edomites (i. 2-5). He reproves the priests for their dislike to the service of God, their un holy sacrifices, and their perversions of the law, an the people for their intermarriages with the neighbouring heathen nations (i. 6, 7-16). Before things were better than they had been the great sin of the Jews, but now they seem to have been prone to iniquity, complaining that the wicked were favoured by God, and that the Messiah did not appear. The prophet therefore announces the approach first of the Messias, and then of the Messiah himself, whom he styles the 'messenger of the covenant,' to purify the people of God, and to punish the ungodly (ii. 17, to iii. 6). He points to the witholding of rites and offerings as the cause of the barrenness of the land, and promises a return of prosperity to Israel (iii. 7-12). He again answers the infidel complaints of the people of the prophet, by referring to a future recompense, and predicts the coming of Elijah to bring the people to repentance, denouncing a curse upon the land if they despised his ministry (iii. 13, to 17). He also promises that the law of God would be written upon their hearts (iii. 14, 15). He again answers the infidel complaints of the people of the prophet, by referring to a future recompense, and predicts the coming of Elijah to bring the people to repentance, denouncing a curse upon the land if they despised his ministry (iii. 13, to 17). He also promises that the law of God would be written upon their hearts (iii. 14, 15).

The prophecy of Malachi is almost entirely in prose. His style has the vigour which belongs to an indifferent caser of abuses, but he is deficient in the poetical beauties of the earlier prophets. Bishop Lowth remarks that the book is written in a style of oratory, and the Corinthians to indicate that the Hebrew poetry from the time of the Babylonish captivity was in a declining state, and being past its prime and vigour, was then fast verging towards the debility of age. (Praecis, xxii.) The canonical authority of this book is not disputed, and that of the Messiah himself, whom he styles the 'messenger of the covenant,' to purify the people of God, and to punish the ungodly (ii. 17, to iii. 6). He points to the witholding of rites and offerings as the cause of the barrenness of the land, and promises a return of prosperity to Israel (iii. 7-12). He again answers the infidel complaints of the people of the prophet, by referring to a future recompense, and predicts the coming of Elijah to bring the people to repentance, denouncing a curse upon the land if they despised his ministry (iii. 13, to 17). He also promises that the law of God would be written upon their hearts (iii. 14, 15).

MALACOLAPHUS. [Woodpeckers.]

MALACOLOGY. The science of molluscous or soft-bodied animals, and the knowledge of such animals, whether protected by shells or entirely naked, and their distribution into classes, subclasses, families, genera, and species. In this more extended and philosophical view of the subject, conchology may now be considered a branch of the natural history of animals, and the molluscous animals are based upon the anatomy of the soft parts and the habits of the animals, as well as upon the structure of the shells in those molluscous forms which have that protection. In the article CONCHOCOLOGY will be found a short statement of the present state of the science. The shell-collector of former days looked upon his drawers, if they were rich in rare species or varieties, as containing an assemblage of gems; and indeed the enormous prices given for fine and scarce shells, combined with the surpassing beauty of the objects themselves, almost justified the view which the possessor took of his cabinet of treasures. They were to him really 'Les Delices des Yeux et de l'Esprit,' and the energetic zeal with which he collected and the sacrifices that he made to procure a perfect Many-ringed Bub, a Gloria Maria, or Cedo Nulli, among the cones: an Aurora or Orange-Couey, a Poluta aulica or Poluta Jonumia, &c., were only comparable to the extravagances of those visitors of the tulip mania when it was at its height. Although, however, they were, in nine cases out of ten, little more to the owner of them: they were mere trinkets on which he looked dotingly without knowing, and scarcely wishing to know, the organization of the animal whose skeleton only was before him. This innocent trifling came at last to view its true light by some collectors worthy of employment, who put off childish things and went into the subject. Lister, Adams, Linneus, Pohl, Os Lamark, De Blainville, and others gave dignity to it, and raised it to the dignity of a science, and vouched for its proper rank; whilst the comparatively impermanence of the covering of the testaceous mollusca leads to the hands of such men as William Smith and his followers among the most valuable records by which the strata of the earth's crust are determined, and the history of the animal realm is deciphered. [Zoology, vol. xi. p. 131.]

We must first examine what animals are included in the general name of Mollusca, or, if M. de Buffon term be adopted as being the more comprehensive, in the name Mollusques, which is the French term used by Buffon. The Mollusca of Aristotle, his Opera or Operaet and his Malacolopera, and his Malacolopera, are distinguished by him from fishes as not having, like the latter, blood; which must be understood as meaning that they were without red blood. And these would have been distinguished from the Oepetidm, which is defined as having the fishy parts internal and the soft parts external. The Mollusca are divided into two classes: the soft parts external, and the solid or firm parts internal, which are distinguished from the Oepetidm, which is defined as having the fishy parts internal and the solid or firm parts external. The Mollusca in this genus generally correspond with the naked and Testacea Mollusca of the moderns.

Pliny and the ancient Latins zoologists employ the Greek term as the Greek term, and have translated them by the terms Mollusca for the Naked, and Testacea for the Shell-protected Mollusks.

Upon the revival of letters, we find Belon, Redout, Gesner, and Aldrovandus adopting the denominations of the ancients, and interpreting the moderns, the Zoologists employing the term Vercus for all invertebrate animals (venes), and having already distinguished the different classes of beings, according to the nature of the covering, whether it be shell, or not, or whether the circulating fluid is white, and who employed the term Vercus (Mollusca) and Vercus (Testacea) to denote the divisions of Aristotle.

In his 'Synops Mathematica Concholurium,' conchology was developed from the comparative history of the animals, and having done much as a systematic and though that zoologist gave the anatomy of many molluscous animals, as had been done by Fabius Columbar before him, and Willis, Swammerdam, and others after him, little appears to have been effected for a principle of classification resting on their external organization of their form, and still less for one resting on their internal structure.

Linnaeus, in his 'Natural Division' of Animals into three or four, depending on the structure of the heart and on the circulating fluid, makes his third section consist of the Mollusca and Vercus, which are an unimportant group (inanimur), and a white and cold circulating fluid (semis frigidus, albida). This section he separates into two subvisions: the first (Ancistrota) consisting of the Suctoria (conch:); the second consisting of the Vercus (Mollusca) and Vercus (Testacea) to denote the divisions of Aristotle.

In the article CONCHOCOLOGY will be found a short statement of the present state of the science. The shell-collector of former days looked upon his drawers, if they were rich in rare species or varieties, as containing an assemblage of gems; and indeed the enormous prices given for fine and scarce shells, combined with the surpassing beauty of the objects themselves, almost justified the view which the possessor took of his cabinet of treasures. They were to him really 'Les Delices des Yeux et de l'Esprit;' and the energetic zeal with which he collected and the sacrifices that he made to procure a perfect Many-ringed Bub, a Gloria Maria, or Cedo Nulli, among the cones: an Aurora or Orange-Couey, a Poluta aulica or Poluta Jonumia, &c., were only comparable to the extravagances of those visitors of the tulip mania when it was at its height. Although, however, they were, in nine cases out of ten, little more to the owner of them: they were mere trinkets on which he looked dotingly without knowing, and scarcely wishing to know, the organization of the animal whose skeleton only was before him. This innocent trifling came at last to view its true light by some collectors worthy of employment, who put off childish things and went into the subject. Lister, Adams, Linneus, Pohl, Os Lamark, De Blainville, and others gave dignity to it, and raised it to the dignity of a science, and vouched for its proper rank; whilst the comparatively impermanence of the covering of the testaceous mollusca leads to the hands of such men as William Smith and his followers among the most valuable records by which the strata of the earth's crust are determined, and the history of the animal realm is deciphered. [Zoology, vol. xi. p. 131.]

We must first examine what animals are included in the general name of Mollusca, or, if M. de Buffon term be adopted as being the more comprehensive, in the name Mollusques, which is the French term used by Buffon. The Mollusca of Aristotle, his Opera or Operaet and his Malacolopera, are distinguished by him from fishes as not having, like the latter, blood; which must be understood as meaning that they were without red blood. And these would have been distinguished from the Oepetidm, which is defined as having the fishy parts internal and the soft parts external. The Mollusca are divided into two classes: the soft parts external, and the solid or firm parts internal, which are distinguished from the Oepetidm, which is defined as having the fishy parts internal and the solid or firm parts external. The Mollusca in this genus generally correspond with the naked and Testacea Mollusca of the moderns.

Pliny and the ancient Latins zoologists employ the Greek term as the Greek term, and have translated them by the terms Mollusca for the Naked, and Testacea for the Shell-protected Mollusks.

Upon the revival of letters, we find Belon, Redout, Gesner, and Aldrovandus adopting the denominations of the ancients, and interpreting the moderns, the Zoologists employing the term Vercus for all invertebrate animals (venes), and having already distinguished the different classes of beings, according to the nature of the covering, whether it be shell, or not, or whether the circulating fluid is white, and who employed the term Vercus (Mollusca) and Vercus (Testacea) to denote the divisions of Aristotle.

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MOLLUSCA consists of the following genera ar-
el in the subdivisions here given: -

MOLLUSCA.

1. Mouth above. Animal fixing itself by its base.

2. Mouth anterior. Body perforated with a small lateral


4. Mouth lateral.

5. Mouth posterior.

(Animal Ascidia).

**Bivalvia:**

(Animal Tethys). Donax (Animal Tethys). Venus (Ani-
mal Tethys). Spisula (Animal Tethys). Chama (Ani-
mail Tethys). Arca (Animal Tethys?). Ostrea (Animal
Tethys?). Anomia (Animal Corpus Ligula, emarginata, citi-
ata, clitic valva superiores affinis. Brachiis 2, linea-
ris, corpore longioribus, convexitatis, porrecta, valva supe-
riora, ut in clitic, citat affinis valvae utique. Mytilus
(Animal Ascidia?). Pinna (Animal Limax).

**Univalvia Spiraea regularis:**

Argonauta (Animal Sepia). Nautilus (Animal -Rumph.,
sub. t. 17, f. 67. Conus (Animal Limax). Cyprea (Ani-

**Subclass Linacina:**


Murex (Animal Limax). Trochus (Animal Limax). Turbo
(Animal Limax).

**Univalvia abigua regularis:**

Patella (Animal Limax). Dentulum (Animal Tere-
bellum). Septaria (Animal Terebellum). Teredo (Animal Te-

This arrangement makes each of the generic characters
reside in the shell, which is treated as the habitation of
the animal. Any one who examined this method soon
found that it was impossible to affix any definite idea to
many of the inhabiting animals; and but a vague one to
most. To the bulk of the Bivalves or Conches, a Tethys
is assigned as the animal; to the bulk of the Univalves with
a regular spire, a Limax or Slug, which last is stated to be
the animal of Pinna among the Bivalves; and yet the
wonder is how Linnaeus approached so nearly to a natural
arrangement with the scanty materials—for scanty they
were when compared with the information that we now
possess—which formed the groundwork of his classification.
Upon the system almost all scientific collections of shells
were arranged till within these few years; and yet digested
were many of the followers of this great man, who would
have been the first to remodel his arrangement as new light
poured in upon him, that every attempt at adopting the vision
as Linnaeus stated it. Linnaeus had a knowledge of Bruguier,
founded upon the structure of the animals, was for a long time resisted, and almost resented as a presumptu-
ous attempt at 'genius-making.'

Daubenton had read to the Academy of Sciences at Paris
a memoir on the system of shells, in which, whilst he admitted that an acquaintance with these alone might suffice for arrangement, he remarked that a know-
ledge of the animals, or soft parts, was indispensable for
forming a complete system of conchology and a natural dis-

Guettard seems to have been the first who carried out
the suggestion of Daubenton; for in 1756 he read a memoir
in the 'Académie des Sciences' (Académie des Sciences) and
therein established upon sound principles the necessity, in
forming a classification of shells, of having recourse to the
animals, or soft parts which they enclose, and a part of
which the shells are. He did more; for he well charac-
terized, upon the same principle, the division of the animal
advanced by him, several genera, especially among the Univalves, as they were then called. And although he acknowledges that his information with regard to the Bivalves was not sufficient to enable him to carry out his views in the same manner with regard to them,
he observes that the same principle of being applicable to both
animal and to the Bivalves. Guettard further pointed out the divi-

The principle of the classification of shells was then followed in the year 1757
more extensively applied by Adanson in his 'Histoire Naturelle des Coquillages.' He distinguishes all the exter-

animals or the soft parts, under the name of Zoozoanophores:
those, it is true, are many, if not all of them, very bad.

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The byssus, or threads, which exist in some species, and do not exist in others. The shells which he had observed at Senegal are figured and distributed generally in the following order, under two families.

**Family 1.**

**LIMACONIA.**

§ I.

**Limacops Univalves.**


§ II.

**Lionops Operculata.**


**The Conques** are also divided into two sections.

§ 4.

**Conques Bivalves.**

Genera: — Ostreum (Ostrea of the moderns). Jatunus (Spondylus of the moderns). Perna (including Mytilus, Modiolus, Avicula, Puna, and Cardita). Chama (including Venus, Cytheres, Mactra, Cardita, and some of Solen; but apparently not the same as the Chama of modern authors). Tellina (Donax of the moderns). Pectunculus (including Cardium, Arcas, and some true Pectunculi of Lamarck). Solon.

§ II.

**Conques Multivalves.**

Pholas. Teredo.

Such is the system of Adanson; and although it presents errors, which would very probably have been avoided by so good an observer, if he had lived at a later period, when this branch of knowledge became better known, we must allow him the merit of being the first who practically applied the principle of classification based on the structure of the soft as well as the hard parts, or, in other words, on the organization of the animal and shell.

Geoffroy, a physician of Paris, applied the same principle to his little 'Treatise on the Terrestrial and Fluvialite Shells' in the neighbourhood of that city. His genera of Univalves amount to five only, viz. Ancylus, Cochlea, Buccinum, Plano-bis, and Nerita. His genera of Bivalves consist of two, Chama and Mytilus; in the first of which he places Cyclia, and in the second an Anodon and a Unio. Müller, the Dane, presented zoologists with a system founded on the organs of life. It was more complete than that of Guettard, inasmuch as it extended to all conchyliferous animals, was less natural than that of Adanson, and altogether inferior to it, as far as Adanson's went; but it was much more elaborate, and demands a great share of praise. The system of the Zoologia DANICA, in his 'Vermium terraeastrum et fluvialium Historia,' adopts three primary divisions—Univalves, Bivalves, and Multivalves.

He divides the Univalves into three sections:—

1. Those testacean univalves whose shell is pierced through and through; and in this section he places the Echiu and Denudalum.
2. Those which have a large aperture, consisting of a holar (hull of modern zoologists), Argonauta, Angustula (Physa of Draparnaud and others), Buccinum (Linnæus of the moderns), Carchesium, Turbo, Helix, Planorbis, Ancylus, Patella, and Haliotis.
3. Operculated testacean univalves, in which he places the genera Truncum (Cerithium of Linnæus), Trochus, Nerita, Valonia, and Serpula.

The Bivalves are divided by the same author into two sections only: the 1st consisting of those which have a toothed hinge, including Terebrata, a new genus; and the 2nd, of those which have a toothless hinge, including two new genera, Anomus and Proxen; which he separates from the oysters.

The Multivalves comprise the genera Chiton, Lepas, and Pholus.

There can be little doubt that it was to these shells (among whom we would not include Müllers, which are nearly simultaneously) we owe the arrangement of Linnæus as it finally appeared in his last edition of the Systema Naturæ (the 12th, 1767), and as we have given above. In the second edition, which was in 1766, they seem to have occurred to him. The naked mollusks are distributed among the order Zoophytes, of his class Vermes, and the testacean mollusks formed his third order of that class, Testacea. Among the first we find Tethys, under which he arranged the animal, however, which he placed near the Hydraspis; the second were not yet divided into Univalves and Bivalves. The genera Patella and Cochlea seem to have embraced all the turritated univalves; and Cypraea, Haliotis, and Nautilus, the simple univalves, still under the term Concha; and the Ascides, under the name of Microcosmus, seem to have found a place under his Testacea.

It is in the tenth edition (1768) that we first trace considerable improvements, which increased in the last that received the correction of the great Swedish naturalist's own hand, and which appeared in three volumes: the first part of the first volume being published in 1766; the second part of that volume, containing the Insecta and Mollusca, in 1767; the third, containing the shells (Regnum Vegetabile), in 1767; and the third, containing the minerals (Regnum Lapidum), in 1768. Adanson's work was published at Paris in 1757, ten years before the second part of the second volume of the last edition. The system is the only profitably the labours of Guettard and Adanson to add to the genera of the orders Mollusca and Testacea of his Verme, and to define them more closely. Geoffroy's publication appeared nearly at the same time with his, who, we believe, the object of Linnaeus seems to have been to establish a nomenclature and form a system of conchology resting on the modifications of structure in the shell alone; in fact an arbitrary system which has now generally given way to systems founded on the organs of life. All the natural principles of the Linnaean system are the same. The object of Linnaeus seems to have been to establish a nomenclature and form a system of conchology resting on the modifications of structure in the shell alone; in fact an arbitrary system which has now generally given way to systems founded on the organs of life. All the natural principles of the Linnaean system are the same.

Pallas (Miscellaneous Zoologica, 1766) seems to have been the first to point out the unstable foundation on which the system of Linnaeus rested. He shows that the subdivision of the testacean mollusks, as adopted by Linnaeus and has followed, resting on the shell alone, without taking into account, is far from natural; and, in that spirit of prophecy which is now fulfilled, he remarks that it cannot be preserved.

Bruguière, nevertheless, weighing the great influence which the work of Linnaeus had exercised on zoology in general, and the powerful aid which it afforded to the student of that science, clung, in his Dictionnaire des Vérs, to the method of the Swede in so many points that he may be said almost to have done little more than imitate him. 

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Among the Regular Bivalves are three new genera, viz. Acado, Placuna, and Perna.

The Irregular Bivalves contain the new genera Trigonia, Pecten (previously separated from the oysters by Müller and the fol.), Triduma, Conus, and Tritonia (formed at the expense of the genera Chama, Linna., and Terebratula, containing a division of Anomia.

The Univalves are subdivided into the Unilocular, or those without any partitions, and the Multilocular, or those which are furnished with partitions or septa.

The Unilocular Univalves without a regular spire contain Potelia and Fissurella, divided for the first time, and, notwithstanding the observations of Pallas, Dentalium, Serpula, Species, and Aspergillum, among others; Fissurella, Subquaria, and Aspergillum being new.

The Unilocular Univalves with a regular spire present a less heterogeneous assemblage. We find among them Fontula reduced to a more uniform genus by withdrawing from it some of the widely different species which Linnaeus furnished the genus with.

The Multilocular Univalves not noticed by Linnaeus, but pointed out by Brey or Breymanus of Danzig, in his Description, are Testacea, Conus, and Tricholum (1723), comprise the genera Camerina, Ammonites, and Orthoceras, at the expense of the genus Nautilus of Linnaeus.

Gmelin, whose edition of Linnaeus appeared about the same time with the work of Bruguière, requires but little attention. Four or five new genera were added to the Systema Naturae, which received in this edition a great number of species, too many of them added carelessly and in a manner to create confusion, instead of dissipating it.

In 1791 Poit gave the first volume of his splendid work, Testacea uniusque Siciliae etque eorum Historia et Anatomie. Of the care with which the details are wrought out, and the magnificence and accuracy with which they are illustrated, it is impossible to speak too highly. But while it avoids the errors of those who sought to establish a system of testaceous mollusks on the structure of the shell alone, he runs into the opposite extreme, and rests his arrangement on the soft parts of the animal only, without any reference to the hard part or shell. He divides the class into three orders—1. Mollusca bidentata (Seep c. &c. of Linnaeus), and the Tridoma and Serpula of the same author. 2. Mollusca reptantia (Gastropods of the more modern authors). 3. Mollusca subrostrata (Multivalves and Brulaves of the old school, and characterised as being provided with a long beak fixed to rocks or free, and as always wanting a head and eyes).

Of these families the most natural are the Bivalves, and their arrangement is based on the structure of important parts. Little seems to have been done for the science from 1789 to 1848, a period which included the French revolution and its reign of terror; but in 1789 a new era commenced, and George Cuvier published his Tableau Élémentaire de l'histoire Naturelle des Animaux. This great man, clearly perceiving that Geuttard, Adamson, Geoffroy, Müller, and Cuvier, were the great names of the day, and that they proposed the organisation of the animal as its basis, adopted that method, and united, as Pallas had done, under the name of Mollusca both the Vermes (Mollusca) and Vermes (Testacea) of Linnaeus. Considering the absence of a shell as a contingency of secondary importance, he divided the Mollusca into three sub-classes, viz.:—the Cephalopoda Mollusca, the Gastropoda Mollusca, and the Aschelomai Mollusca. Finally he arranged this 'Second Grand Division of the Animal Kingdom' in six classes, and gave the following method in his last edition of the Régne Animal (1830).

MOLLUSCA.

Class I.

CEPHALOPODA.

1. Sepia of Linnaeus, including the following genera and subgenera:—Octopus, Polygus, Eledone, Argonauta, Bellerophon, Loligo, Loligopsis, Onychoteuthis, Sepiola, Sepioidea, and the Cuttles properly so called, viz. Sepia of Lamarck.


[In the text, Actinocoma is included in the section appropriated to the new Belemnites, though it is spoken of as a genus. In the Table Margalef's chiton is prefixed as a genus not a subgenus.]

nites properly so called (Tipinigades of De Montfort), Planites of De Haan, Ceratites, Orbilia, Globites, Goniatites, Pelagia, Scaphites, Becluiites (Tirannites, Rabidites, Ichthyosarcolites), Hamites, Turrites (the last with M. Audouin's doubt).—5. Camerina (Nanumultines of Lamarck), with their infinity of genera. [FORAMINIFERA.]

Class II.

PETROPODA.


Class III.

GASTROPODA.

Order I. Pulmonifera.

§ 1.

Pulmonifera Terrestria.


§ 2.

Pulmonifera Aquatica.

1. Oncidium. 2. Planorbat. 3. Linus or Linnaea. 4. Pyla, near which Cuvier would place Sculbus of De Montfort. 5. Auriculae, including Carychiun of De Fersseac. 6. Melampus (Convolus, Lam.)

Order 2.

Nudibranchiata.


Order 3.

Inferobranchiata.

1. Phydidia. 2. Diphylidia.

Order 4.

Tectibranchiata.


Order 5.

Heteropoda. (Lam.)

These were all comprised by Forskal under his genus Pterotrachas, and comprehended 1. Carinaria. 2. Alatia. 3. Fisola. 4. the Timoriennes of Quoy and Gaimard. 5. the Monophores of the same. Phidole of Péron is placed here, but with doubt.

Order 6.

Pectinibranchiata.

Family of Trochoids.

1. Trochus (including Tectus, Calcar, Rotella, Cantharbus, Infundibulum, Teleoper, and Esomaphy.). 2. Turbo, including, as genera and subgenera, Turbo properly so called (which comprises both Turbo and Melagris of De Montfort), Delphinia, Pleurotomaria, Turritella, Scolaria; together with certain terrestrial and fresh-water subgenera, viz.: Tylor, Malacostoma, &c.; and the following:—Littorina, Monodon, Phasianella, Ammularia (including Laniates of De Montfort), Helicina, Melania, Rissoa, Melanopsis, Piren, Acteon (Tornatella, Lam.), Paryssimida, Janthina, Nerita, NATICA, Pefolanta, Velate, Narrina, and Chin.

Family of Capulídæ.

Family of Buceciniidae.

1. Conus. 2. Cypraea. 3. Ovula, or rather Ovulum, including Volva (Rhinilla?) and Calyptra of De Montfort. 4. Terebellum. 5. Voluta, including Oliva, Volvaria, the true Volva (subdivided by Broderip* into Cymba—Cymbium of De Montfort—Melo, and Voluta), Marginella, Columbella, Mitra, and Cancellaria. 6. Bucinum, including Bucinum of Bruguier, Nassa, Eurytia, Ancilla, Doliolum (the Tuns, and Partridge Tuns), Harpa, Purpurea, Unicolor (Monoceros, Lam.), Rinucina (Siatrum of De Montfort), Conchoilepis, Cassis, Cassidaria (Morio of De Montfort), and Terebra. 7. Cerithium (including Potamides), 8. Murex, including Murex, Brug., 9. Nerita, which comprises the Murexes properly so called (Murex, De Montfort), and Bronte, Typhlops, Chiococora, Aquilus, Loricata, Triton, and Triquetrum of the same; Ranella (including Apollion of De Montfort); Fusus (including Fusus and Latus of De Montfort); Struthiosaria; Pleurotomaria; Clavatula; Pyla (including Fugura of De Montfort), and Fasciolariaria. 9. Strombus (including Strombus, Lam., Pteroceras, Rosellaria, and Hippocrepes).

Order 7.
Cyclopirce. 1. Patella. 2. Chiton. Class IV.
Achephalia. Order 1.
Acephala Testacea (with four branchial funnels, or clefts).

Family of Ostreacea.

Family of Mytilacea.
1. Mytilus, Linn., including Modiola and Lithomus. 2. Anodonta, including Iridia, Dipsas, &c. 3. Union, including Hyria and Castalia. 4. Cardita. 5. Cypricardia, and the Carinacases of M. Blainville, Fenecicardia, and Cras-sate (Paphia, Roiss.).

Family of Chamaeacea.
1. Chama, Linn., including Tridacna, Hippopus, Chama (Brug.), Diceras, and Isocardia.

Family of Cardiacea.

Family of the Enfers.
Acephala without shells.
1st Family (Simple).
1. Biphora, including Thalina, Salpa, and Dagnys. 2. * In the "Rugel Animal." * Sucreesse is erroneously printed for "Broch." * The suffix "e" by Broch. * Echolog. pl. 123 p. 12. 3. This appears to be nothing but a double expression of the verb "to be." * There is another edition of Lamark's "Anisome." 4. Vesica with valves not and without a Cteno-Desbвиз and Grave Edwards.

Class V.
Brachiopoda.
1. Lingula. 2. Terebratula, including Spirifer and The-tidea. 3. Orbicula, including Dicoria and Crania.

Class VI.
Cirripedia.
(Lepas and Triton, Linn.)
1. Anatina, including Patellaminis, Pollicipes, Cinera Oton, and Tetrasomas. 2. Balanus, including Anadana, Conus, Assema, Pyrgoma, Octonio, Crenus, Coronula, Tropi-calina, and Diadema.

Such is the method finally proposed by Cuvier; and while pursuing it, the reader should remember that he has the advantage of reference to almost every suborder which he had written on the subject, down to the year 1806. Not that this at all detracts from the excellent use which he has made of the materials at his command, and the philosophical views which he took of this intricate depart-ment of zoology.

We must now go back to 1798, when Lamarck began his publications on the Mollusca, by a paper in which he described the great genus Sepia into three genera; and in 1799 he gave to the world his Prodromus of a new classification of shells, wherein he established several new genera. In this work he states his adhesion to the principles of the works of Bruguiere, whilst profiting by the observations of Cuvier as to the organization of the animal, and remarking that he had been compelled to restrict still more the characters of the genera, and continually to augment the number. In 1801, when he published his Animal's and Vertébrés他会 believe in a conviction of the justice: the views of Cuvier; and no longer confining his attempt to the shell, he followed very nearly the example of the great zoologist, and rested his system upon the organization of the soft parts, as well as on the form of the shell of the animal. The 1st vol. of the last edition, which received 4 corrections of Lamark's own hand, was published in 1801, and the last vol. in 1822.* the following is the arrangement he divided into three orders:

I. The Amphidactyla, containing the Hirundo, Lesches, and the Lombricidae or Worms (Echidna). II. The Antennated Annelida, containing the Apr- tide, the Néronidae, the Limnidae, and the Amphipoda. III. The Sedentary Annelida, containing the Mucos, which include Arenicolida and Saccides, and the Amphipoda, which include Cymene and Dentilium; the Amphipoda which comprise Pectinaria, Sabellaria, Terebrata, and As- phirite, and the Serpulidae (Spirorbis, Serpula, Vermin-Galeolaria, and Magellia). The Annelida immediately preceded Lamark's Class 1.

Class I.
Cirripedia. Order 1.
Sessile Cirripedidae.

Order 2.
Pedunculated Cirripedidae.
§ 1. Body completely enveloped by its tunicae. Scop-posed of contiguous pieces, leaving a free space for the animal when they are expanded. Anatina. Pollicipes.

§ 2. Body completely enveloped by its tunicae, which are without an anterior opening. Shell formed of pieces which have no need to open themselves for the arms of the animal. Cineras. Oton.
Class XI.
Conchifera.
Order: 1.

Conchifera Dimyaria.

Two muscles of attachment at least. Shell, internally, with two muscular impressions, which are separate and ateral.

(1) Shell regular, generally equivelar.
(A) Shell gaping, in general, at the lateral extremities, valves being approximated.
(*) Crenated Conchifers.—Mantle with its lobes united generally, either entirely or partially; foot thick posterior; top of the shell always remarkable, often considerable.
   (i) Shell either contained in a tubular sheath, distinct from its valves, or entirely or partially incrustated in the wall of the sheath, or projecting externally.

Family Tubicinidae.


(f) Shell without a tubular sheath.

(*) Ligament external.

(?) Shell either furnished with accessory pieces, foreign from its valves, or gaping very much anteriorly.

Family Pholadidae.

Pholas. Gastrochena.

(**) Shell without accessory pieces, and gaping at the lateral extremities only.

Family Solenidae.


(b) Ligament internal.

Family Mytilidae.

Mya. Anatina.

(**) Tenuepode Conchifers.—Mantle with its lobes not united, or hardly united anteriorly; foot small, compressed; gaping of the shell often considerable.

(*) Ligament internal.

Family Mactridae.

(1) Ligament internal only.

(a) Shell gaping on its sides.

Lustraria. Mactra.

(b) Shell not gaping on its sides.

Crasatella. Erycina.

(2) Ligament visible externally, or double, one part being internal, the other external.


Family Corbulidae.

Shell inequivalve. Ligament internal.)

Corbul. Pandora.

(**) Ligament external only.

Family Lithogastridae.

Boring shells without accessory pieces, without any particular sheath, and more or less gaping at their anterior side. Ligament of the valves internal.


Family Nymphidae.

Two cardinal teeth at most in the same valve. Shell gaping a little at the lateral extremities. Ligament external; nympha, in general, gaping outwards.

(1) Solen-like Nymphidae.


(2) Tellin-like Nymphidae.

(a) Lateral teeth, one or two.


(b) No lateral teeth.

Caspia. Crassina.

(*) Shell closed at the lateral extremities, when the valves are closed.

(*** Lamellipode Conchifers.—Foot flattened, lamellibranch, not posterior.

Family Conchidae.

Three cardinal teeth at least in one valve, with as many or less in the other. Lateral teeth sometimes.

1. Fluviatile Conchidea.

Family Cardiidae.

Cardinal teeth irregular, either in their form or situation, and accompanied, in general, by one or two lateral teeth.


Family Arcidae.

Cardinal teeth small, numerous, intrant, and disposed in each valve on a line which is either straight, or arched, or broken.


Naiidae.

Fluvial shells, whose hinge is sometimes furnished with an irregular cardinal tooth which is simple or divided, and with a longitudinal tooth which is prolonged under the corselet; and sometimes is without any tooth at all, or is furnished along its length with irregular, granulous tubercles.

Muscular impression posterior and compound. Umbones with the epiphragms peeled off, and frequently eroded.

Ustio. Hyria. Anaonta (or rather Acanthia) and Inridia.

(****) Ambiguous Conchifers.

Family Chamidae.

Shell irregular, inequivalve. A single cardinal tooth which is oblique and suberebrate, inserted into a little pit in the opposite valve.

Muscular impressions two, distant, lateral. External ligament depressed.


Order 2.

Conchifera Monomyaria.

Only one muscle of attachment, which seems to traverse their body.

Shell with an internal subcentral muscular impression.

(*) Ligament marginal, elongated on the border, sublinear.

(a) Shell transverse, equivale, with an elongated muscular impression, bordering the upper limb.

Family Tridacnidae.

Tridacna. Hippopus.

(b) Shell longitudinal or subtransverse, with a muscular impression contracted into an isolated space without bordering the limb.

(*) Ligament at the lateral border of the shell, and always entire.

Family Mytilidae.

Hinge with a subinternal ligament, which is marginal, linear, very entire, occupying a great part of the anterior border. Shell rarely foliated.


(/**) Ligament at the lower border of the shell, or divided.

Family Malleidae.

Ligament marginal, sublinear, either interrupted by cre- nutations or serial teeth, or altogether simple. Shell sub- inequivalve, foliated.


(**) Ligament not marginal, contracted into a short space under the umbones, and not forming a tendinous tube under the shell.

(a) Ligament internal or demi-internal. Shell regular, compact, not foliated."

Family Pectinidae.


(b) Ligament internal or demi-internal. Shell irregular, foliated, sometimes papraceous.

Family Ostreidae.

(1) Ligament demi-internal, shell foliated, but nevertheless often acquiring great thickness.

Lamark does not use the termination ‘ida‘; but it is now so generally employed in zoology to designate family names, that we have thought it advisable to adopt the form for the Lamarkian families.

* The term foliated is here applied to relating to the structure of the shell itself, rather than to the external exocruretes.
on the wall of a particular cavity, the aperture of which is a hole which the animal contracts or dilates at its pleasure. Animals of this section breathe nothing but air.

Family Limacidae.


Order 3. Travelpipoda.

Travelpipoda without a projecting siphon, and respiring in general by means of a hole. The greater part of the body furnished with jaws. Shell with the aperture entire, having at its base neither doral subascending nor central ciliary. The Travelpipoda respire air. They do not distinguish naeaceous.

Family Colimacidae (terrestrial).


(b) Two tentacles. Auricula. Cyclotoma.

Family Limacinae.

Amphibious. Living in the water, but coming to the surface to breathe. Shell with a sharp edge to the lip. Planorboidea. Physa. Lymnaea, or other Lymnaea.

Travelpipoda breathing water only. Branchial projecting in form of filaments, laminae, or tufts in the branchial cavity. Shell often naeaceous, and often also having protuberant parts on the surface.

(a) Shell fluvialite, operculate, the left border of which does not resemble a demi-partition.

(b) Shell with united borders.


(b) Shell fluvialite or marine, whose left border resembles a demi-partition.


(*) Shell floating at the surface of the water.


(**) Shell not floating, having the aperture very wide; no columnella.


Family Plicidae. Tornatella. Pyramidalis. (****) No plates on the columnella.


Section II. (Zoephagous.)

Travelpipoda with a projecting siphon, which only breathe the water which arrives at the branchial by means of this siphon. These feed on animal substances only, as marine, have no jaws, and are furnished with a retractive proboscis.

Shell spirivalve, sheathing the soft parts, with an aperture which is either canaliculated, or notched, or turned up at its base.

(a) Shell with a canal more or less long at the base of an aperture, and the right border of whose lip does not change with age.
Family Canalisereiæ.

§ 1. No constant bourrelet on the right lip of the species.


§ 2. A constant bourrelet on the right lip in all the species.

(a) No bourrelet on the spire.

Struthiolariæ.

(b) Bourrelets on the spire.

Rasella. Murex. Trion. (d) Shell with a canal more or less long at the base of its aperture, and the right border of whose lip changes its form with age, and has a sinus inferiorly.

Pterido (Allées or Wing-shells).

Rostellaria. Petocera, or rather Pteroceras. Strombus. 

(c) Shell with a short canal, ascending posteriorly, or with an oblique notch at the base of its aperture, this demi-canonical being directed towards the back.

Family Purpuridae (Purpurifereis).

§ 1. An ascending canal, or recurved towards the back.

Cassidariæ. Cassia.

§ 2. An oblique notch directed backwards.


(d) No canal at its aperture, but a subdorsal notch and plates on the columella.

Family Columellidae (Columellaires).


(e) Shell without a canal, but having the base of its aperture notched or versant, and the whors of the spire large, compressed, and enrolled in such a manner that the last whorl nearly entirely covers the others.

Family Comoludiiæ (Comoludes).


Order IV.

Cephalopoda.

Mantle in form of a sac, containing the lower part of the body. Head projecting from the sac, surrounded by arms, which are not articulated, but furnished with suckers (tentacles), and which envelop the mouth. Two sessile eyes; two horny mandibles to the mouth; three hearts; sexes separate.

1st Division.

Polythalamous Cephalopods.

Shell multilocular, enveloped completely or partially, and which is enclosed in the posterior part of the animal, often with adherences.

(a) Shell multilocular, with simple chambers.

1. Shell straight or nearly straight: no spiral.

Family Orthoceratidae.


(3. Shell partially spiral: last whorl continued in a straight line.

Family Litostroites.

Spirula. Spirillina. Litula.


Family Cristaæ.


(4. Shell globulose, spheroidal, or oval, with enveloping whors or partitions united in tautique.

Family Sphurellidae.


(5. Shell discoid, with a central spire, and partitions radiating from the centre to the circumference.

Family Radiolidae.


(6. Shell discoid, with a central spire, and partitions which do not extend from the centre to the circumference.

Family Nautilidae.


* A seed.

P. C. No. 891.

** Shell multilocular, with chambers pitted (decoupés) at the edges.

Family Ammonitidæ.


2nd Division.

Monothalamous Cephalopods.

Shell unilocular, entirely external, and enveloping the animal.

Genus, Argonauta.

3rd Division.

Sepiæ Cephalopods.

No shell, either internal or external. A solid free cretaceous or horny body, contained in the interior of the greater part of the animals.

Genera:—Octopus. Loligopsis. Loligo, Sepia,

Order V.

Heteropoda.

Body free, elongated, swimming horizontally. Head distinct; two eyes. No arms surrounding the head; no feet under the belly or under the throat for creeping. One or more fins, without any regular order, and not disposed by pairs.


Such was Lamarck's arrangement, as he finally left it, after various modifications in the course of his publications, from the commencement of them to the second edition of his 'Animalium non vertebres.' During that interval many authors had presented their views to the public, and we proceed to notice some of them.

In 1800, M. d'Audubard de Péruwes (the father) produced a system of Conchology based on the consideration of the animal and its shell. He introduced some observations on the complete or incomplete state of what he calls the 'spiral cone' of the shell, and the point of attachment of the foot, under the neck or under the belly of the Gastropoda. His views were limited to the terrestrial and fluviatile Mollusks, or 'Muscules,' as he calls them, and subdivides them into orders almost as numerous as his genera, among which he find Hoticollmaex, forming the passage between the Limaces and the Helices.

The work of M. Bosc, in the supplements to Buffon (Dek., 1802), may be considered as rather of a retrograde character, for it still clung to the system of Linnaeus as amended by Bruguière; and, notwithstanding the progress already made, we find him adhering to the terms Mollusca Worms and Testaceous Worms, as designating the Naed and Testaceous Mollusca. His divisions were nearly those of Bruguière, though he adopted the new subdivisions which Cuvier and Lamarck had established, and appears to have been conscious of the value of those innovations. Bosc was an observer, and had studied many of the Mollusca in a living state. He established many new facts and some new genera.

In 1803 appeared the Prodromus of the work of Draparnaud, which was not published till after his death in 1808, on the Terrestrial and Fluviatile Mollusca of France. This work is conceived and executed in a philosophical spirit, and with rational views of a natural system of classification. He abandoned the arbitrary method of Linnaeus, and returned to the principle proposed by Réaumur (1711) in his 'Mémoire sur le Progressive Motions of Shells,' making the classification that of Cuvier.

The 'Natural History of Mollusca,' for Sonnin's edition of Buffon, was hardly commenced by Denys de Montfort, and almost entirely executed by M. de Roissy. The classification is carried out on the principles of Cuvier, but the author differs from him on some points, as, for instance, in thinking that the section of the Anodons ought not immediately to follow that of the Oysters, and that the aperture which Cuvier regarded as anterior in Biphora was really posterior—an opinion in which he is supported by MM. Bosc, Péron, De Blainville, Chamisso, and Kuhl. In this work the analogy of the Polythalamous or chambered shells is pointed out. M. de Roissy appears to have perceived the passage from the Univalve to the Bivalve Mollusks by means of the Patelle, and he seems to have been the first who placed Aspergillum near to Patelle, a position which it still holds.

M. Duméril, in 1806, published in his 'Zoologie Analytique,' Vol. XIV. 2 T.
tigae' a classification of Mollusca nearly similar to that of Cuvier. M. Dunéril divides the Mollusca into five orders: Cephalopoda, Pteropoda, Gasteropoda, Apechala, and Bradopoda. The principal novelties in this publication were a division of the Gasteropoda, according to their organs of respiration; seven families, and subdivisions of the Class Conchifera, Brancliata, and Adelobranchiata, which correspond nearly to the three divisions established on the structure of the shell; and a separation of the Bradopoda as a distinct order.

In 1808 Denys de Montfort published his Uniovalles Choissonnes, and in 1810 the second volume of his Conchyliologie Systematique, containing the Uniovalles non Choissonnes. His genera are very numerous, and not many of them are retained at present by zoologists, though they are for the most part well defined. The method is only carried out with regard to the Uniovalles; but his primary division rests upon the number of valves, and is separated into Uniovalles, Multivalves, and Bivalves, as in the systems of the older conchologists. He differs however in restricting the term Multivalves to shells made up of several united pieces, without any solution of continuity; whilst he applies the term Disvalves to shells made up of many pieces, but not coherent nor adherent to each other, as Termites. S.

Oken, in 1810, read to the society of Gottingen a paper upon the knowledge of Mollusca apart from their shells and upon a natural classification established upon this basis; and carried out this principle in his 'Manual of Nat. Hist.', published at Jena in 1816. Oken will do more than call the reader's attention to this work, which he will find well worthy of perusal, though it does not contain any new principle of arrangement, and there is somewhat too much of change of name about his genera, of which there are but few really new, nor considers do more than hint at the work of M. Rafinesque (Palemo, 1814). About the year 1816 much light was thrown on the Aggregates Mollusca by Leueur, Desmarest, and above all by the great Savigny, and in 1817 M. de Blainville first recognized the great part played by the Cephalopods, which he afterwards carried out to its completion, and to which we shall call attention in the proper place. The systems of Goldfuss and Ranzi appeared in the same year, 1820, the first at Nuremberg and the second at Bologna; the first may be regarded as a compilation of the labours of those malacologists who had embraced the natural system; and the basis of the second, as far as the Cirripedae are concerned, rests on the structure of the shell and its operculum without regard to their Brutana, Balamus, &c. Oken, as far as relates to the cephalopods, does little more than give new designations to the four sections of that division.

M. de Férussac (the son) divided (1819) the Mollusca into two grand sections, the Cephalous and the Acephalous. Cephalous Mollusca.

These are divided into three classes—Cephalopods, Pteropods, and Gastropods. The first class, Cephalopods, contained the two orders, Decapods and Octopods, as in the arrangement of Dr. J. R. D. It embraces all the naked cephalopods and also the animals with multilocular shells; but was subsequently considerably modified in a joint work with M. d'Orbigny. The second class, Pteropods, which originally consisted of the families of the Limacinae, the Clypeus, the Pneumoderms, and the Phyllirhoeae, also underwent considerable changes in a subsequent and joint work with M. Rang. The third class, Gastropods, contains the following orders and suborders:—1. Nudibranchs (Anthrobranchiids and Polybranchiids). 2. Inbranchna (Philidians and Semi-philidians). 3. Teetibranchiids. 4. Pulmoniids without an operculum (Geophilinae, Geohydrobi- lians, and Hydrobius). 5. Operculated Pulmoniids. 6. Pectinibranchiids (Pomatostomes, Halimicostomes, Apomastomes). 7. Apneustanibranchiids (Ornior, Haloclicus, ). 8. Cylocibranchiids (Chiasmobranchiids and Polyplaxiphores). Asephalous Mollusca.

These are divided into four classes—Cirripedes, Brachio- pods, Lamellibranchiids, and Tunicida. The first class, Cirripedes, is divided into the orders—:Sessile Cirripedes and Pedunculated Cirripedes.


The fourth, Tunicidae, consists of the two orders—Tetra Ascidiane (Tethidae and the Pyronomae) and Thaliace As- cidae (Biphora and). In England Dr. Leach had been active in introducing a natural system, as appears from his published papers, descriptions, and works. He had in contemplation to publish a general history of English Mollusca; but the most distressing of maladies deprived zoology of one of its most zealous cultivators, and the work was never appeared.

Mr. Gray (John Edward) published in the London Med- ical Repository (1821), his system, which divides the Mollusca (taken in the largest sense of the word) into seven classes. The first, Antitrabanchiata (Cephalopods) consists of three orders—Anostopoda, Sepiopoda, and Nauti- phora. The second, Gasteropodophora, is divided into three subclasses—Pneumobranchia, Cryptobranchia, and Gymno- branchia. The first of these subclasses contains two orders—Ade- pneumona and Planoropneumona. The second embraces the classes of the Carnobranchia, which are divided into nine sections by the application of a new principle, viz. the form of the operculum: the Oracherebranchia, the Polyplembranchia, the Gastrobranchia, the Notochora, the Chiastracrania, the Dicranobranchia, the Cyclobranchia, the Polyplaxiphora, and the Dipleurobranchia. The third class consists of two orders—Gyrobanchia and Polybranchia.

Mr. B. J. Fraser, 'Gasteropodophora' corresponds with the Heteropoda of Lamarck, and is similar to M. de Blainville's order Nucleobranchia.

The fourth class, Stomatopteropora, corresponding with the Pteropoda, contains two orders, Pteropoder and Dec- thieria. The fifth class, Saccopora (Tunicidae of Lamarck), consists of three orders—Holobranchia, Tomobranchia, and Diphyllobranchia. The sixth, Conchophora, consists of orders depending upon the form of muscular impressions, and are composed of the form of the foot, as Cladopoda, Leptopoda, Phyllopoda, Pogonopoda, and Mero- phora. The seventh, Spirobranchia, corresponds with the Echinoidea.

M. de Blainville, who in 1814 had published his first sketches of a methodical arrangement of the Mollusca, as he designates the animals on which we are treating, a few further developed that method in 1817 in his 'Prodromus', and again in 1823 in his 'Prodromos'. The classification of the animal kingdom. The organ upon which that arrangement is based is the shape of the Respirations, and it was finally perfected in the memoir which appeared in his 'Manuel de Malacologie,' (1824). We here give an outline of it.

Type.

MALACOZOA.

Class 1. Cephalopodophora.

Order 1. Cryptobranchiata.

Family 1. Octoceras, containing the genus Octoceras, which includes Beline (Leach) and Ocytheoe (Rafinesque).


Order 2. Cellulacea.

Family 1. Spherulaceae, containing the genus Mollusca (including Pollonies of De Montfort), Melonas (including Boreli of De Montfort), Sarcenaria, and Textula.

Family 2. Planulaceae, comprising the genera Rutilia, including Fornicularea of Defrance, and Peneroplia, including Pin- nodia and Defrance.

Family 3. Nummulaceae, containing Nummulites, in- cluding Lycophrys, D. Mont., Helictis, including Ruti- tales and Egeon of Mollusca; Siderolites, including Ty- porus and the Siderolites of Mont.; Orbulina, including...
Notes. Helonia, and Archasia of the same; Placentula, including Epicondyle and Flora of the same; and Vorticie, including Themeeon, Sporitis, and Andromeda of the same.

Order 3. Polythalamacea.

**Family 1. Orthocerata. Genera** (with simple chambers or partitions). Belomeutes, including Cellirhöe, Bitholestes. Procarinata, Azania, and Facilites of De Montf.; Conoloria; Conilites, including Achelois, Ammonites, and Thalamus of the same; Orthoceras, including Nodosaria (Lam.). Reophaeus, and Molossus of De Montf. **(with simple chambers); Baculites, including Turritale of the same.**

**Family 2. Litocerata. Genera** (with simple chambers); Ichthyosarcoites; Litula; Spirula, including Hortulus and Lineares of De Montf., and Spirula of Lam. **(with simple chambers); Hamites, and Ammonites.**

**Family 3. Cretaceae. Genera** Crepidula, including Astacolus, Ceneria, and Peripels of De Montf.; Ores; and Lithuris.

**Family 4. Ammonaceae. Genera** Discoritida; Scaphites; Ammonites; and Simplegs, including Ammonitites, Planulites, and Amaltheus of De Montf.

**Family 5. Nauticeae. Genera** Orbites, including Aganides and Pelagius of De Montf.; Nautilus, including Angulites, Oceania, and Baiophytes of the same; Polyostome, including Geomorpha, Pterodes, Eophyton, Planor- nus, Chrysosul, and Melonis of the same; Lentilicella, including Patrocles, Nonion, Macrodites, Rubulus, Lampas, Phasmum, Antoceros, Chiroposites, Rhincodon, Heron, and Spinocerulas of the same.

**Family 6. Turbinacea. Genera** Cibicides; Rotalites, including Storius, Cidorillus, and Cortulus of De Montf.


Subclass I. Paracephalophora Dioicae (Aquatic, but capable of living for some time out of water).

§ 1. Organs of respiration, and shell, where it exists, non-symmetrical.

Order 1. Siphonobranchiata.

**Family 1. Siphonostomata (Murex, Linn.). Genera** (as persistent turbo; right tip). Pleurotomaria, including Clavatula, Lam.; Rostellaria, including Hippolythes of De Montf.; Fusus, including Luteres of De Montf.; Pyrum, including Fulgur of De Montf., and Melangea and Rapsana of Schum.; Fasciolaria; Turbinella, including Polysters, Spondylus; Cassidae, and Persius of De Montf., and Struthiolaria of Lam.; Ranella, including Boforo and Appolon of De Montf.; Murex, including Bronte, Choccure, Typhus, and Phos of the same.

Order 2. Entomostomata (Buceinum, Linn.). Genera** (Turriulicated Entomostomes), Cerithium, including Ver- tages of Schum.; Triphora or Tristoma of Dehaye; Neuniforme of Detrione, Patamides of Brongniart, Prymnus of De Montf., and Pirena of Lam.; Melanopsis; Planaxia; Subula. **(Turritulicata, or those whose shell is in general globulous); Harpa; Dolium, including Perdis of De Montf.; Cassidaria, including Oisica of Sowerby; Casi; Riecula, including Scutum of De Montf.; Cancellaria; Perpura, including Monocerus of De Montf.;

**Family 3. Angbyostomata. Genera** (an operculum), Strombus, including Pterocerases of Lam.; Cones, including Rhombus, Cylinder, Rollus, and Harmes of De Montf.; Terebella, including Sperchus of De Montf.; Oliva; Ancilla; Mitra, including Turris of De Montf.; Imbricaria of Schum., and Conulus of Swain-son; Voluta, including Turbinellus of Oken and Cymbium of De Montf.; Margella, including Volvaria of Lam.; Peribolus; Cyprea; Ovula, including Calpurnia, Ulti- mus, and Radius of De Montf.

Order 2. Asiphalenobranchiata.

**Family 1. Goniosomata (Trochus, Linn.). Genera** Solarium, including Maelorites of Lesueur and Euomphalus of Sowerby; Trochus, including Infundulibus, Phorus, Calcar, Tectus, Telecoscopium and Cantharides of De Montf., and Rotella of Lam.

**Family 2. Cricostomata (Turbo, Linn.). Genera** Turbo, including Clanculus and Melagraps of De Montf.; Labio of Oken, Monodontia of Lam., and Littorina of De Faurussac; Stomatostoma, including Stomatostoma and Turritella, including Trigonomastix; Turritella; Proto; Scalacia, including Acta of Leach; Vermetus; Siliquaria; Magulus; Volva; Cyclostoma, including Cyclophorus of De Montf.; and Puladina.

**Family 3. Elicitostomata. Genera** Melania, Rissos; including Alvaria of Riss; Phasianella; Apomeli, including Laniates of De Montf.; Helicina, including Amphylus and Olygira of Say; Plerococerus, including Oxy- trachne of Rafinesque.

**Family 4. Hemicyclostoma (Nerita, Linn.). Genera** Natia, including Polinices of De Montf.; Nerita. **(right lip dentated, Nerita, Lam.), Peleronata of Oken and Cithon of De Montf. **(right lip not toothed), Neritina, Lam.; Velates of De Montf.; Pediulus, Sor.; and Septaria.


§ 1. Organs of respiration, and shell, where it exists, non-symmetrical.

Order 1. Pulmonobranchiata.

**Family 1. Limmoceae. Genera** Limmoceae, including Radius of De Montf. and Impialis of Rafinesque; Phsys; Planorba.

**Family 3. Auriculacea (Voluta, pars., Linn.). Genera** Pedipes, including Tornata and Conovulus, Lam.; Auricula, including Scorabas of De Montf., Carychium of Müll., and Phytis of Grey; and Murex.

**Family 3. Limacinae (Holox., Linn., terrestrials).** (anterior border of the mantle elevated into a roll (bouret) and not a buckler; a shell). Genera, Suecinea, including Amphibulium, Lam.; Sulcata, including Bulina; Pinxia, including Ligumia and Polyphygos of De Montf.; Clasilia; Pupa, including Chondres of Cuvier, Gibbus of De Montf., Vertigo of Müll., and Partula of De Férussac; Tonnogere (Anastoma, Lam.); Helix (circumference of the shell constantly contracted or subordinated at all ages). Caracoloids, Lam., including Iberus, Caracolus, Acavus, and Zonites of De Montf., and Helicella of Lam. **(anterior border of the mantle enlarged into a kind of buckler; shell null or nearly membranous), Helicelinos, including Helicelinae, including Helicarion of De Férussac; Testacella; Parmaceae, Limaceae; Limax, including Arion of De Férussac; Philomique and Rumelé of Rafé.; Oncidium, including Veronice of De Blainv.

Order 2. Chitoniobranchiata.

**Coriociella; Sigaretus; Cryptostoma; Oznio; Stomatella; and Velutina.**


**Family 1. Subaplysacea. Genera** Berthella; Pleuro-branchia; Peraequulotrichi. **Family 2. Aplysacea. Genera** Aplysia, including Ac-† Probably only the young of Gyraea, notwithstanding Adans's observation, that he had seen both young and old ones. He, no doubt, saw them in various stages of growth, during which the young of Gyraea is of very different appearance. His figures represent the young of a Gyraea. |

† Mr. Gray, who has been long in this country, tells us that the true Tornata, at least, should be separated from Pedipes, because the type of the latter genus is oper- 

† Mr. Gray, according to Mr. Gray, pointed to him. | Copedal at the opercular plates at least, with Cryptostoma, Quoy and Gaimard, De Blainvillet. | M. de Blainville thinks that Wester and Gerrit of Quoy and Gaimard belong to this genus. |
son of Oken; Dolabella; Burstella; Notarchus; and Elisia.

Family 2. Patelloidea. Genera, Umbrella (Acordo of Megerle); Siphonaria; and Tylodina.

Family 4. Akera. Genera, Bulba, including Aplustrum of Schum, and Aty and Scaphander of De Mont; Bellero-
phus; Bulla; Lobaria; Sormetus; Gasteropiera; and Atlas.

§ 2.

Order 2.

Aporobranchiata.

Family 1. Thecosomata. Genera, Hyalma; Cleodora, including Vaginella of Daudin and Styloila of Lesueur;
Cymbula, including Argivora of Lesueur; and Pyrgo.

Family 2. Gymnosomata. Genera, Clio, including Clido-
ite, Quoy, and Gaim.; and Pneumoderma.


Order 3.

Polybranchiata.

Family 1. Tetracladus. Genera, Glauceus; Laniogerus; Tergipes; Cavolinia; Bolla; Dermatobranchus; and Pia-
cobranchus.

Family 2. Dicerata. Genera, Scylla, Tritonia; and Tethys.

Order 3.

Cyclobranchiata.

Genera, Doris, including Polycoerus of Cuv.; Onchidoris; and Peronia.

Order 4.

Inferobranchiata.

Genera, Phyllidia and Lingueilla.

Order 5.

Nucelobranchiata.

Family 1. Nectopoda. Genera, Pterotrochus, including Firolia, Firoliolés and Sagittula of Lesueur; and Car
naria.


Subcl ava III.

Paracephalophora Hermaphrodita (Patella, Linn.).

§ 1.

Organs of respiration and shell symmetrical.

Order 1.

Cirrhopranchiata.

Genera, Dentalium, including Entale of Defr.

Order 2.

Ceratobranchiata.

Family 1. Retiera. Genera, Patella, including Helcion of De Montf.

Family 2. Branchifera. Genera, Pissurella; Emarginula, including Rimula of Defr; and Parmophora.

§ 2.

Organs of respiration and shell non-symmetrical.

Order 3.

Scutibranchiata.

Family 1. Oidea. Genera, Haliotis, including Padolus of De Montf, and Sotamia of Lam.; and Ancylius.

Family 2. Calyptraeata. Genera, Crepidula; Calyptrae;
Capulus; Hipponyx; and Natroma.

Class III.

Acephalophora.

Order 1.

Palliobranchiata.

§ 1.

Shell symmetrical.

Genera, Lingula, Terebratalia, including Pentamerus, Spirifer, and Productus, Sow., Styrgecepsalus, Defr., and
Magna; Thecosils; Stromatombus; Fychites; Dianchora; and Podopsis.

§ 2.

Shell non-symmetrical, irregular, constantly adherent. Genera, Orbicula, including Ducina, Lam.; and Cania.
including Otion and Cinera of Leach; Pentalepas, including Pentalepian and Pollicipes of Leach; Polyplepas, including Scalpellum of Leach; and Litholepas.

Family 2. Balanidae.  (Balanus, Brug.). ** (operculum sreflects on a central or lateral vertical.) Genera, Balanina, including Acosta of Leach; Ochthoibia; Conia, including Aseata of Ranznani; Crenia, including Pyrgoma of Savign.; and Chthalamata. ** (operculum not articulated, and more or less horizontal.) Coronula, including Cheloniobia of Leach, Gepetaps and Diadema of Ranznani, and Tubicenilla of Leach.

Class II. POLYPLAXIPHORA. (Chiton, Linn.) Genera, Chiton, including Chitonellus of Lam, and Chitonylla of De Blainv.

Our limits will not allow us to do more than refer to the systems of Schumacher, Latreille, and Rang, though they will, the latter especially, which in many respects a happy combination of the systems of Cuvier, I'homme, and De Blainville, with some alterations, will repay the student for their perusal.

The organization of the animals above treated of will be found under the titles CEPHALONIDA, CONCHIFERA, GASTROPODA, and other articles relating to them in this work.

MALACONOTUS. [SHRINKS.]

MALACOPTERYGII, according to Cuvier, the second great division, or order, of osseous Fishes, the species of which are soft and cartilaginous; exhibiting minute articulations and often divided into small fibres at their extremities. It frequently happens however that the anterior ray of the dorsal or the anal fin is hard and bony, a character observable in nearly all the species of the Siluride and in many belonging to other families.

The greater portion of the fishes of this order have the scales formed of simple laminae and with smooth margins; in some cases differing from the species of the Perca, Scinidena, &c., in which the edges of the scales are pectinated or serrated. The Pleuronectidae, or Flat-fishes, however, present the latter structure of scale; and yet, according to Cuvier, are placed in the Malacopterygi. M. Agassiz, in this respect respects, this group to another section, and he also arranges the Siluridae in another group, owing to the structure of their scales. [SILURIDAE.]

The Malacopterygi are divided into three sections. First, the Abdominatae, in which the ventral fins are situated under the body and not very long; the body has a long and rounded body, while the external parts are well marked. The second section (Subbrachiata) the ventral fins are situated immediately beneath the pectoral fins, and the pelvis is suspended to the bones of the shoulder. In the third section (Pectorinatae), there are no representatives in this country, at least not well authenticated. 4. Salmonidae, or fishes of the salmon tribe. 5. Clupeidae, of which we have familiar examples in the Herring, Sprat, White-bait, Pinfish, Shad, &c.

The section Subbrachiatae includes the families Gadidae (Cod-fish, Haddock, Whiting, Ling, &c.); the Pleuronectidae, or Flat-fishes, such as the Plounder, Halibut, Sole, &c.; the Discobolt, of which the common Lumpfish shall furnish an excellent; and finally the Echeneidae, containing the family of Remora of Malabar.
abundant and cheap. The citizens are gay, courteous, and hospitable; and the females are renowned throughout Spain for their grace and beauty, sprightliness and humour. The lower orders of Malaguates are indolent, thievish, revengeful, and prone to commit assassination. Malaga gave birth in the twelfth century to Ibn Beitarah, the naturalist, the Pliny of the Arabians.

[Note: The text continues with historical and geographical information about Malaga and other places in Spain.]

MALAGA (Jausara). Mala, also called Malela, or Malalas, or Malelas, was the author of a chronicle in the Greek language, in 18 books, which extends from the creation of the world to the reign of Justinian. The time in which he lived is uncertain. He must have been alive after the reign of Justinian, and before the reign of which that emperor reigned. Hody, in his Prolegomena to the Oxford edition of this writer, endeavours to show that he lived in the ninth century; but this opinion has been controverted by Jortin, Gibbon, Reiske, and L. Dindorf, who maintain that he lived shorter than the reign of Justinian.

Malala is a Syrian word, signifying 'orator,' or 'rhetorician.' He is also called John of Antioch; but he must not be confounded with the John of Antioch who also wrote a chronicle, which is cited by those which have been preserved in a work of Constantine Postophregogenem, "On Virtues and Vices."

The chronicle of Malala was printed for the first time at Oxford, 1691, under the superintendence of Chilime, who 48 and 49 had expressed a wish to do the work with accuracy. He fixed a dissertation to that edition on the life and writings of Malala; and Bentley an appendix, in the form of a letter to Mill, in which he corrected numerous passages. Bentley's letter to Mill was reprinted at the end of Bentley's "Emendations," and the whole in a Latin edition, Com, 1713. The chronicle was also published at Venice in 1733; but the best edition is by L. Dindorf (Bonn, 1831), which contains the notes of Chilime and Hody, as well as Bentley's letter to Mill. (Ogilvie, "Life of Constantine; Dindorf's Preface.

MALARN, LAKE OF. [Sweren.]

MALATIA (or more correctly Malatiah), a town of Asia Minor, about 38° 25' N. lat. and 38° 20' E. long., is built in a fine plain, about 15 miles from the banks of the Euphrates. About six miles south-west of it is the town of Aspiz, to which the inhabitants of Malatiah go for the summer months, returning for the five winter months to Malatiah. These towns, which may be considered as one, contained in 1836, 3923 families, 2500 of which were Turkish and 123 Armenian. The town of Malatia is beautiful, but plagued, cholera, and the depredations of the Kurds have greatly reduced it. Aspiz is situated on the side of a mountain in a forest of fruit-trees. Malatiah is in a plain, which at present is nearly reduced to an uncultivated state. The mountains have been laid down; the houses have a mean appearance, and the shops in the bazaar are mere mud-stalls. There are two well built mosques and two caravanserais, all in the Persian style of architecture. Malatiah derives its present importance only from the large corn market which leads from Sivas to Diar-bekr and Mosul, and from being one of the places to which the Kurds resort for the purpose of trade. (Brant, in the "London Geographical Journal.

MALAY PENINSULA constitutes the most southern extremity of the continent of Asia, extending between the Gulf of BengaI and the Straits of Malacca on the west, and the Gulf of Siam and the Chinese Sea on the east. It is divided into three great divisions: the northern part, which is the smallest, is called the Malay Peninsula; the southern point forms the northern shores of the Straits of Singapore; the southern promontory of Asia, in 1° 15' N., and Cape Roman, in 1° 17', constitute the two extremities of the Straits of Singapore. The peninsula lies between 96° and 104° E. long. It is 750 miles long, with a width varying between 150 and 120 miles. Its surface may cover an area of about 80,000 square miles, or about 4000 square miles less than that of Great Britain.

The peninsula is traversed by a mountain-range, which is a continuation of the Samroiyt (i.e. three hundred peaks) mountains, which between 12° and 14° N. lat. separate the valley of the Taneserrim rich from the three which fall into the Gulf of Siam. This chain, which in this part rises in numerous peaks to the elevation of 3000 feet, and lower south of Kwai Point, where it traverses the isthmus of Krah, the narrowest part of the peninsula, between 8° and 9° N. lat. and 100° E. long, seems to be the continuation of the long isthmus, though of moderate elevation, once joined together with its offsets the whole country from one sea to the other, except at its southern extremity, where an extensive tract of alluvial land, enclosing the bay of Char-yu, occurs on the coast of the Gulf of BengaI.

The isthmus of Krah lies due north and south. At its southern extremity, between 8° and 9° N. lat., the Malay Peninsula turns to the south-east, and preserves the direction to its most southern point. Between 6° 30' and 8° N. lat., and 99° and 101° E. long, the southern coffers of the Gulf of BengaI; but the fact is not established, as no European has ever traversed this country. The tract between 5° and 6° 30' N. lat. appears to be the highest part of the mountain-range, the peak of Titch Banga, opposite the town of Queda, town of Pakan, which contains 5600 feet. In this part the country is occupied the greatest part of the country, leaving only a low level tract, about seven or eight miles in width, along the Gulf of BengaI, which is swampy and mostly covered with jungle, but which is crossed by several rich voyages. Here and there along the eastern coast the level tracts are more extensive, but the offsets of the mountains in some parts approach the sea-shore, as Cape Pakan and Rocky Point.

South of 8° N. lat. is the widest part of the peninsula, which is about 180 miles in breadth. The interior or mountain-region of this part is little known, but it is certain that it is less elevated than the country farther north, and the summits of the hills are more rounded. The level tract along the Straits of Malacca is considerably about 18 miles in breadth north of 4° lat., and more than 20 miles in breadth south of that parallel; but along the sea-shore a few isolated hills rise to a moderate height, as Racho Point and others. The range forming the water-side begins at the rivers which issue from Malacca and the Chinese Sea does not occupy the centre of the peninsula, but is nearer the western than the eastern shores. The level country along the Chinese Sea is also, so far as is known, much more extensive south of the Straits of Malacca than it is north of them. The Straits of Malacca are 23 miles in circumference. On the eastern boundary of the district of Malacca is an elevated summit, the Gunag lead of the natives, and Mount Ophir of the Portuguese, whose summit is estimated to be 4900 feet high. 26° 15' E. long. The town of Singapour, the capital of the South Sea Islands, which is the mountainous side subsides into hills; but even along the Oriental Straits, which divide the island of Singapore from the continent, the country presents a rocky and elevated shore, and its surface is strongly undulating, though it can hardly be interrupted, the clouds brought by the southern-west monsoon during which period the dry season prevails. But the country is exposed to the full effects of the north-east monsoon.

The climate differs on the eastern and western sides of the peninsula. The eastern resembles the coast of Coromandel and of Cochin China Proper, as the mountain-range protects it from the monsoon winds, and the climate is regular during which period the dry season prevails. But the western exposure is to the full effects of the north-east monsoon.
and the wet season commences in the beginning of November and continues till March. The northern part of the western coast is exposed to the south-west monsoon, and in climate resembles Arcan, having its rainy season in our summer, and its dry season in our winter. The southern portion of the western coast differs in climate from all other coast lines in the archipelago; it is the head of a large valley, running from north-west to south-east, in the centre of which the Strait of Malacca extend like a large river.

On the north-east this valley is sheltered by the mountain-range which traverses the peninsula in its whole length. The cultivation of fruits and rice is extensive, and the coast is inhabited by several peoples who have their own language and customs. They are extremely timid, and have little intercourse with their neighbours. The whole of the Malay peninsula is thinly inhabited, and many extensive districts in the interior are unpeopled. The whole population perhaps does not exceed 10 millions.

The northern part of the peninsula, as far south as the bay of Chai-ya, is immediately subject to the king of Siam. On that bay are two harbours, called Chai-ya and Bandon, and on the opposite coast the harbours of Phueng or Pongo, from which a commercial road travels the peninsula to Chai-ya and Bandon. The produce of the island of Junk Seylon, or Salanga, and also European goods, are transported from Phueng across the isthmus to the Produce of the island of Kos Sammi, or Pulau Carnam, the Chinese fetch cotton and edible nuts; ten or fifteen junks arrive annually for that purpose.

That portion of the peninsula which lies between the bay of Chai-ya and that of Pongo is partly under the sovereignty of the Malay kings, dependent on the king of Siam, and partly belongs immediately to Siam. The town of Ligar is said to have 5000 inhabitants, Malaya, Chinese, and Siamese. A few Chinese junks arrive annually here for cotton, tin, pepper, and rice. The same articles, and in very large quantities, are exported from the towns of Talung and Sungega, which lie opposite the mountainous island of Tantame. A road begins at Talung which crosses the peninsula to the small town of Trang, and is passable for elephants. It is about 75 miles long, and passes along the mountains. The kingdom of Malaya is divided between the states of Pahang and Johore on the eastern side, of that of Rumbwo in the interior, and of those of Salangore and Perak on the west, and of Melaka, a small city of the peninsula. The Malays of this country have not attained that degree of civilisation which is found among the inhabitants of Sumatra and Java. They show little inclination for cultivating the ground, and still less in the mechanical arts. They are pastoral and agriculturals.

The Malay language of these nations is different. In the interior there are two other nations: the Jakong, or Benus, inhabit some wooded plains towards the southern extremity of the peninsula; they are of a copper-colour, their hair is straight, and their features resemble those of the Malaya. They have no fixed habitations, and live by the produce of the chase. Crawford thinks that they are Malaya in the lowest state of civilisation, an opinion which is supported by their language, which contains but few words that cannot be traced in the Malay language. In the interior, between 6° and 8°, live the Samaux, who seem to belong to the race commonly called the Australian negroes, which is found from the Adamam Islands on the west, to Papua, or New Guinea, in the east, as well as on the continent of Australia. They resemble the African negroes in form and size, but differ in colour. They are naturally uncivilised and in subjection; their language is not understood by the Malaya, but the notes of their language are not known, to be much frequented. Another communication connects the mouth of the river Muda in Queda with the town of Patani. For a considerable distance the goods are conveyed in boats on the river, but still this road is not much frequented. The British colony of Pulo Penang, or Prince of Wales Island, is partly situated within the kingdom of Queda. [PENANG.] The town of Queda is a small place. Its commerce was formerly considerable, but has been nearly destroyed by the establishment on Prince of Wales Island. A few miles froem them is another populous place, and the favorite residence of the princes.

The southern extremity of the peninsula is divided between the kingdoms of Pahang and Johore on the eastern side, that of Rumbwo in the interior, and of those of Salangore and Perak on the west, and of Melaka, a small city of the peninsula. The Malays of this country have not attained that degree of civilisation which is found among the inhabitants of Sumatra and Java. They show little inclination for cultivating the ground, and still less in the mechanical arts. They are pastoral and agriculturals.
to Siam and Hue; and Notices of the Indian Archipelago, &c., collected by J. H. Moor, Singapore, 1837.)

MALAYS, THE, are a nation of Southern Asia, who occupy the shores of the Malay Peninsula, and, if language may, that is not a proof of the fact, seem to have spread over all the islands from Madagascar on the west to Ester Island on the east. Almost all the languages spoken in the islands of the Indian Archipelago and in the Pacific contain a great number of words and expressions which even the natives from the same speech, and, from their physical character of the people confirms the inference drawn from this circumstance. The great body of this nation however inhabit the larger islands of the Indian Archipelago.

In person the Malays are short, squat, and robust. The medium height of the men may be five feet two inches, and that of the women four feet eleven inches, or about four inches less than the average stature of Europeans. Their legs are rather long and heavy, but not ill-formed. Their arms are rather short, and the chest is somewhat prominent. The face is of a round form, the mouth is wide, and the teeth remarkably fine. The chin is rather of a square form; the angles of the lower jaw are very prominent. The cheekbones are high, and the cheek subsiding rather hollow. The nose is short and small, never prominent, but never flat. The eyes are small, and always black. The complexion is generally brown, but varies in the different tribes: climate seems to have nothing to do with the colour. They do not appear to be vitally to the position on the equator. The hair is long, lank, harsh, and always black. Compared with Europeans and the nations of western Asia, the Malay's must be considered an ill-looking people. In person and complexion they most resemble the inhabitants of the island of Java, but they have none of the seldom even from them, and are a very distinct people, with a striking likeness among themselves, and a marked dissimilarity from all other people.

Crawford, who has carefully examined the different languages in the island of Java, finds in them a great similarity in respect of pronunciation, grammatical structure, and idiom. Twenty consonants and five vowels are the greatest number which these languages generally admit, and only two diphthongs sounds occur. The structure of the verb is very regular, and is the same in all the languages. These languages are rich in expressions for familiar objects, but poor in the expression of abstract ideas, particularly such as relate to the operations of the mind. For many moral ideas there are no verbs at all. Certain kinds of written character are known among the nations who inhabit the Indian Archipelago, the Arabic characters not included, which are in general use among the nations that speak the Malay language. In the Malay language there is considerable progress in civilization; but more in the island of Java than on the other islands of the Indian Archipelago. They are well acquainted with agriculture and some of the mechanical arts. They have also made some progress in medicine and music. They are undoubtedly more civilized than any of the nations of southern Asia which inhabit the countries between China and Hindustan. The Malays have great mental activity, and eagerly apply themselves to commerce and navigation, but their navigation does not extend beyond the seas surrounding their country. The Malays have ships of great size, and having the Malay pirate never attack European ships. Many of the nations that inhabit the Indian Archipelago are Mohammedans, but they differ considerably from the Arabs in manners; their wives, for instance, are not secluded from society. They are musical, and among the different ways of taking revenge is the extraordinary one of 'running a muck,' as it is called.

According to the traditional history of many of the Malay tribes, the country of Menangkabao, in the interior of Sumatra, was the capital, and it is asserted that they first issued from it so late as 1160, and passed over the larger part of the islands of the Archipelago. But when we consider how far the Malay tribes are scattered towards the east in the islands of the Pacific, it is improbable. It may however refer to the introduction of the Mohammedan creed, as, according to Mardan, a Mohammedan is called in Sumatra a Malay, even when he belongs to one of the tribes which are not of Malay origin. In the larger islands the Malay tribes occupy lower tracts along the coast, and the original inhabitants have retired before them into the interior. On the smaller islands the original inhabitants have been exterminated by them.

MALCOLM I., king of Scots, was the son of King Donald IV., who died in the year 994. He succeeded to the throne when King Constantine III., abdicated, for the retirement of his son. He reigned over an extensive dominion. He is styled Malcolm the Brave, or Malcolm the Gallant; but it is not certain when he reigned. Malcolm the Great is the subject of the following paragraph.

MALCOLM II., king of Scots, was the son of King Kenneth III., and inheriting the ambitious spirit of his father, he set up a claim to the throne, in opposition to his uncle, the illegitimate son of King Alexander II., who was styled Alexander III. The struggle between the two princes was long, but it finally terminated in favour of Malcolm, who reigned for seven years. He was a brave warrior, and was crowned at Scone, in the year 1214. He was a prince of great energy and dignity, and his name is highly honored by the people of Scotland. He was the father of the famous nobleman, Malcolm the Great, who reigned over a larger dominion than his father could ever do. He was the subject of the following paragraph.

MALCOLM III., king of Scots, was the son of Malcolm the Great, and inheriting the ambition of his father, he set up a claim to the throne, in opposition to his uncle, the illegitimate son of King Alexander II., who was styled Alexander III. The struggle between the two princes was long, but it finally terminated in favour of Malcolm, who reigned for seven years. He was a brave warrior, and was crowned at Scone, in the year 1214. He was a prince of great energy and dignity, and his name is highly honored by the people of Scotland. He was the father of the famous nobleman, Malcolm the Great, who reigned over a larger dominion than his father could ever do. He was the subject of the following paragraph.

MALCOLM IV., king of Scots, was the grandson of Malcolm the Great, and on the death of that king, in the 24th of May, 1163, he succeeded to the throne, being then in the twelfth year of his age. He was a prince of great energy and dignity, and his name is highly honored by the people of Scotland. He was the father of the famous nobleman, Malcolm the Great, who reigned over a larger dominion than his father could ever do. He was the subject of the following paragraph.
Hebrew chief of such great influence, that when a peace with him was secured, the event was deemed of sufficient importance to be recorded in the annals of the nation. The standard of rebellion was afterwards raised in Galloway, and Malcolm was obliged to lead a great force against Fergus, the lord of that country, whom he at length subdued. Malcolm had also a struggle with the men of Moray, who affected alliance, and in 1161 he compelled them to submit to his authority. The powerful Somerled also again rose, and prepared to make another attempt on the dominions of the Scottish king; but the latter by his promises to thousands of soldiers, and by his alliance with the king of his reign however was not of long duration; as he died of a lingering disease at Jedburgh, on the 9th of December, 1165, at the early age of twenty-four.

MALCOLM, SIR JOHN, G.C.B. and K.L.S., was born at Eskdale, in the county of Dumfries, in Scotland, in 1769. He was sent to India, when he was only thirteen, under the care of his maternal uncle Dr. Paisley, and was appointed a cadet on the Madras establishment. He returned to England in 1794, for the benefit of his health, but again went to India in 1797, but was not allowed to get any active part, as an inferior officer, in the war with the celebrated Tippoo. After the fall of Seringapatam he was appointed, jointly with Captain (afterwards Sir T.) Monro, secretary to the commissioners who were sent to negotiate with the ruler of Mysore for the capitulation of his capital and subjects; and were already so highly estimated by the British government, in India, that he was sent in the same year (1799) to Persia in affairs of the most important nature.

On his return, in 1800, he was appointed private secretary to the governor-general; but he was again sent to Persia in the following year, in consequence of the death of Hajed Kulleed Khan, the Persian ambassador, who was accidentally shot at Bombay. In February, 1803, he was sent again to Persia with the further object of arranging the affairs of General Wellesley in his campaign against the Mahrattas; but in 1805 he was recalled to Bengal, where he was occupied in the performance of the most active and responsible political duties, and particularly in the concluding treaties of alliance with several of the Indian princes.

In consequence of the extensive projects of Bonaparte, who was said to be meditating an invasion of India, and who had entered into an alliance withPersia, Malcolm was again sent to India in 1807, but was never allowed to obtain any advantages in favour of the British government. On his return to India, in 1808, he proceeded to his government in Mysore; but owing to a change in the policy of the government in England, he was again sent to Persia in 1809, where he arrived in 1809, and was received in the most flattering and distinguished manner. On his departure in 1810, in consequence of the nomination of Sir Gore Ouseley as his majesty's ambassador at the Persian court, Malcolm was succeeded in the office of Sir Thomas, and he was appointed to the post of Sir Alexander, and Sir John, and appointed him a khan and sepadar of the empire. Malcolm returned to India in 1812, and was knighted shortly after his arrival. In 1815 he published his 'History of Persia,' in 2 vols. 4to., which contained an account of the country from the earliest period to the time when the work was published. This work is extracted from native sources, and is the only account which we possess in the English language of any parts of Persia.

Malcolm's narrative terminated with the reign of Shah Shuja. In 1817, he was again sent to Persia, and he remained in that country, under Sir T. Halsey, the Deccan. He served under this general, as second in command, in his campaigns against the Mahrattas and Pindarries, and greatly distinguished himself in the decisive battle of Methipoor, in which Holker, one of the most able commanders of the time, was unhorsed. The chieftains, then presiding the Board of Control, after moving the thanks of parliament to Sir T. Halsey, added, 'and to Sir J. Malcolm, who was second in command on that occasion, but who is second to no one in valour and renown. The name of that gallant officer will be remembered in India as long as the British flag is hoisted in that country.'

After the conclusion of this war Sir J. Malcolm received the military and political command of Malwa and the adjoining provinces, where he remained four years. The central provinces of India were at that time almost in a state of anarchy; the plundering expeditions of the Mahrattas and Pindarries had reduced many fertile districts to complete deserts, and had thereby forced multitudes to adopt the same marauding mode of life; and the war, which had just been brought to a close, had thrown upon thousands of the poorer classes, every species of bloodshed and rapine. Too much praise cannot be attributed to the prudent and firm manner in which Sir J. Malcolm administered the government of these provinces: he was particularly successful in conciliating the affections of the natives, and reclaiming by mild and conciliatory means the remains of the Mahratta and Pindarrie armies from their savage mode of life. When Bishop Heber visited this part of India, a few years afterwards, the inhabitants spoke of Sir J. Malcolm in the highest terms of respect and affection, and deplored the fact that their lives had been saved by him, and that they might expect his return. An interesting account of this part of India was published by Sir J. Malcolm in 1823, under the title of 'A Memoir of Central India, including Malwa and the adjoining Provinces; with the History and copious Illustrations of the past and present Condition of that Country.'

Sir J. Malcolm returned to England in 1821; and on his quitting Madras a general order was issued by the government, following this: 'The following communication to him occurs:—'His career has been unexceptionable; for no other servant of the Honourable Company has ever, during so long a period, been constantly employed in the conduct of such various and important military and political duties, as he has done, and at a time when their being confined to the range of service under his own presidency. The exercises of them under different situations has connected him with every presidency, and rendered him less the servant of any one of them than of the Indian empire at large.'

Sir J. Malcolm continued to remain in England till 1827, when he was appointed governor of Bombay; but he resigned this office at the end of three years, and again returned to England. He was elected, shortly afterwards, a member of parliament for Lymington, and he took an active part in the opposition to the Reform Bill. He died on the 31st of May, 1833, of an attack of paralysis. A monument has been erected to his memory in Westminster Abbey, and also an obelisk, 100 feet high, in his native town of Eskdale.

In addition to the works of Sir J. Malcolm, which have been mentioned above, he also wrote an account of the 'Political History of India, from 1784 to 1823,' in 2 vols. 8vo., which has been published after his death, in 1836. (Memoir of Sir John Malcolm, in 'The United Service Journal,' 1833.)

MALDIANS, or MALDANIE, the second family of sedentary Annedals in Larmor's system, including Clymege and Dentilumae, which last is not an annelid, according to the latest and best authorities, but a mollusk. [DENTILUMAE.] Savigny established the family.

MALDON, a corporate town of considerable antiquity, and a parliamentary borough, in Essex, about 7 miles north and 4 miles west of Chelmsford, and county of Essex. The town, which is eight miles east from Chelmsford and thirty-four miles north-east from London, is on the right bank of the Chelmer, about a mile above its junction with the Blackwater, and is an important town of two principal streets, at right angles to each other; and their cruciform figure has led some authors to suppose that the name of the town itself is derived from the Saxo name Maldon, signifying a crossed hill. The circumstance of the hillock on which the town is situated being also of such shape, mainly owing to the construction of a canal, called the 'new navigation,' which commences at Collin's Reach, one of the channels into which the Blackwater river is divided by Northey Island; and after passing through the village of Heybridge, joins the Chelmer above Maldon, and is continued to Chelmsford, and thus the trade to this town has been in a great measure lost. The haven is convenient, and vessels of 200 tons come up to the town during spring-tides. The foreign trade, which in
MALE BRANCHIE, Nicolás, one of the most illustrious disciples of Des Cartes, who both gave to his master’s views a wider development and imparted to them clearness and vivacity, was born at Paris, 1636. He was sickly and formed habits of retirement in his youth. He early acquired a taste for metaphysics and the close study of languages and biblical literature. His attention was first directed to the pursuit of philosophy by accidentally meeting with the work of Des Cartes ‘De Homine.’ The perusal of this work led to such a degree that he was several times forced to lay it aside on account of the violent palpitation of his heart. Abandoning his previous literary pursuits, he devoted ten years to the examination of the Cartesian philosophy, and he acquired the reputation of surpassing all his contemporaries in a knowledge of its true spirit and tendency. As the result of his philosophical meditations, Malebranche published, in 1673, the first book of the ‘Recherche de la Vérité,’ which was quickly followed by the other five.

Moreover this hypothesis does not account for the origin of the different distances of objects. Malebranche proceeds, in the next place, to refute the idea that the soul may entertain is potentially infinite, and it is therefore clear that we cannot suppose that an infinity of ideas have been as planted in the mind, of which however most minds are actively conscious of a very few. Besides, with such a supposition, it is not conceivable. Again, the supposition of each operation of thought the ideas are created by God, is contradicted by the fact that
MALDIVES, commonly called the Maldivian and the Indian Ocean islands, consist of about 3000 islands, among which the fullest study of those of about 7° 6' N. lat. to 40° S. lat., or nearly 550 miles; but in no part is the breadth of the chain supposed to exceed 50 miles in a direct line, although the most western limit of the most northern group, or Atoll, is in 72° 48' E. long.; and the most eastern boundary of the chain is in 13° 48' E. long. The most norther Atoll is about 350 miles from Cape Comorin, the nearest point of Hindustan. The appellation is derived from the language of Malabar, in which the Sanscrit dhipa, an island, is corrupted into diph, the name of the largest of these islands, which is called Maldives.

The sovereignty of these islands stiles himself Sultan of the Thirteen Atolls and Twelve Thousand Islands, but Captain Owen believes the actual number of these islands to be only 24, all but three of which are enclosed and protected from the sea, which during the southwest monsoon is violently agitated, by narrow strips of coral-reefs, which surround them like a wall. This protecting wall in many places scarcely reaches the surface of the water; in other places it forms a long sandy beach, perhaps less than six feet above the level of the sea, and is either circular or oblong. Each of these circular enclosures contains breaks, which constitute convenient passages for vessels or boats to enter. The number of these coral reefs is in the north from 80° to 90°, and in the south from 90° to 100°.

These navigable channels are south of the equator: the Addon, or south channel, from the equator to the Adon Atoll, and the island of Adon, which is about five miles long and five leagues wide; and the Equatorial Channel is between the island of Adon and the Atoll Sudivika, which is ten leagues wide. North of the equator are first, the One and a Half Degree Channel, which is 17 leagues long; the Sudiva Atoll and the Adonnatis Atoll; it is the widest and safest of all these channels, and frequented by ships proceeding eastward in the western monsoon. Further north is the Collonamandus Channel, formed by the Adonnatis Atoll on the south, and the Collonamandus Atoll on the north; it is only seven or eight miles wide, but it is safe. The most northern is the Canovitch Channel, which also seems to offer a safe passage, but it is not used at present, though it appears to have been a favorite station in ancient times.

Within the Atolls the sea is not agitated by storms, and there are always soundings in twenty or thirty fathoms water. The islands are generally situated along the enclosing coral wall, the central part of the Atolls containing only a few of them. The islands are all small; not many of them exceed a mile in length and breadth, and as a rule not more than half a mile. They are generally circular or lozenge-shaped. Many are mere narrow strips, 50 or 100 yards broad, forming a circle, which encloses a lower tract, filled up with earth and clay at springs. Wherever there is no enclosing wall there is sometimes a considerable depth of water, from one to ten fathoms, so that a perfect lagoon is formed. The highest part of the islands is from six to 14 feet above water. Their surface consists of sand, about three feet thick, the top of which is covered with black, light, sandy soil. Beneath the sand is a soft sandstone, resembling particles of beach-sand indurated. This sandstone is about two feet thick, below which depth it softens again to sand, and here fresh-water is found. All the inhabited islands have fresh water, and some also which are not inhabited.

All the islands are covered with a thick impenetrable jungle, among which there are many fine large trees, as the Indian banyan fig-tree, the candoor-tree, the breadfruit-tree, and others. The ground cover is very green; the cane is scarce. On some of the islands are small plantations of Indian corn and sugar-cane. A little cotton is grown, from which a small quantity of cloth is made. Two kinds of millet are cultivated, but not extensively. The inhabitants live entirely on fish, and other fish which are cultivated with care. They are of a very small species, none of the fruit being as large as a common tea-cup, and most of them much smaller; but the coir is fine, strong, of a white texture, and very strong, and is exported to a considerable extent. There are few cats to be seen on the Maldives, or Maldiv Atoll, but there are no sheep or goats, and no poultry, except the common fowl, which is abundant. A few cats are kept to keep the rats out of the houses, which are very numerous in all the cocoa-nut plantations. The flying fox, as it is called in India, a large species of bat, is very common. Fish is very abundant, and salt-fish once constituted an article of export. Turtle are common. Cows are collected and exported to a great extent.

The climate seems very pleasant all the year round, the range of the thermometer not being great; but we have no observations extending over a whole year. In December, January, and February, the thermometer ranges during the day from 70° to 75°, and the nights from 65° to 60°; there fall a few showers of rain. The easterly winds set in early in December, and seldom blow strong, but generally in pleasant light breezes. Towards the end of January they pass to the northward, and calms begin to be frequent. During the remainder of the year westly and south-westerly winds are by far the most prevalent, and frequently stormy. The climate is not favourable to the health of Europeans.

The inhabitants are Mohammedans. It is not ascertained whether they belong to the Arab race or the inhabitants of the coast of Malabar. Two languages are in use among them; the common, which seems to be peculiar to the people, and the Arabic, as a learned language. They have also a peculiar alphabet, differing from the Arabic used in India and from the Sanscrit. It is written from right to left, and the words are indicated by points, as in the Arabic. The whole population may amount to between 150,000 and 200,000. They are governed by a chief, called Sultan, who is proud of his descendant from 2400 years. There is an annual embassy, bearing presents of the products of the islands, and receiving others in return. He resides on the Maldives, or Maldiva Atoll, which contains the largest of the islands, called Maldives; its circumference is about seven miles. These islands were formerly annually visited by one or two vessels from Hindustan for cowries and other produce. At present, the inhabitants themselves bring their own goods in their boats to Bengal, which consist of cowries, coir, cocoa-nut oil, turtle-shell, and some smaller articles;
and they export from Bengal rice, which is not grown on the islands, sugar, silk stuffs, broad-cloth, hardware, and tobacco. They arrive at Calcutta in March or July with the south-western monsoons and depart from that place in the middle of December with the north-east monsoon.

(Horshurg, Owen, and Moresby, in the London Geographical Journal, vols. ii. and v.)

MALIC ACID has already been described under the name of 
Fructose Acid; the present appellation is given in consequence of its having been procured by subjecting malic acid to heat. It is composed of

One equivalent of Hydrogen 1
Four equivalents of Carbon 24
Three equivalents of Oxygen 24

Equivalent 49

The crystals contain one equivalent of water. . . . 9

Equivalent 58

MALETOZO'ARIA, articulated mollusca, the second 
sub-type in the system of M. de Blainville. [Malacology, p. 244.]

MALESHERBES, CHRETIEN GUILLAUME DE 
LAMOIGNON, distinguished by his courage and mis-
fortunes, the associate of Turgot and those illustrious 
statesmen who sought by moderate and beneficial reforms to 
change the state of the old monarchy, was born at 
Paris, 16th Dec. 1721. His father was chancellor of Paris, and 
Malesherbes, after finishing the course of legal study, was 
first appointed deputy to the procureur-generaL Shortly 
thereafter he was elected a counsellor of the par-
liament, and in 1754 governor of the Cour des 
Aides. In this office, he on the one hand courageously 
resisted the extravagant expenditures of the court, and on 
the other put a stop to the frauds and peculations of the 
farmers-general of the revenue. When, in consequence of 
their invasion to the court, the parliament were 
styled by Louis XV., the Cour des Aides was also abrogated, and 
Malesherbes retired to his country-seat, and employed him-
self in benevolent plans for the education and improvement 
of his vassals. Upon the restoration of the constitutional 
courts of the parliament, Malesherbes resumed his duties as 
president of the Cour des Aides; and in the following year (1775) he was appointed minister of the king's household. Upon the retirement of Turgot, Malesherbes also tendered his resignation to the king, which was accepted. The interval between this date and the troubles which preceded the outbreak of the Revolu-
tion Malesherbes devoted to a tour of inspection through 
his native country, Switzerland, and Holland, acquainting 
himself with the state of industry and the arts, and care-
fully observing the nature and condition of their public 
institutions. He was again invited by the king to aid him 
with his counsel in 1787; but finding that he had no power, 
and that his advice was not listened to, he again retired 
just before the meeting of the states-general. When Louis 
XVI. was abdicated, Malesherbes claimed the ho-
norable but dangerous post of his defender, and was asso-
ciated with Tronchet and Desèze. The fearless intrepidity 
of Malesherbes entailed upon him the hatred and suspi-
cions of the party in power, and, with several members of 
his family, he was cast into prison, condemned to death, 
and guillotined on the 22nd of April, 1794, meeting his 
fate with cheerfulness and resignation.

The works of Malesherbes, who was a member of the French Academy of Inscriptions, are mostly on subjects of natural history and rural economy. His 'Discours et Remonstrances,' printed in 1779, are still quoted as authorities on financial questions. His 'Mémoire sur la Liberté de la Presse' par-
took a prominent place in the course of events. When, it takes upon this difficult question, the more especially as 
the tolerance and liberty which it advocated had been practiced by himself when the surveillance of the press was 
entrusted to him. On this ground he incurred the censures of 
the inveterate party, and La Harpe expressly ascribes the ex-
pressions of the Revolution to the facility of publication under 
Malesherbes' ministry of the press. After the Restoration 
a monument to the memory of Malesherbes was erected by 
Louis XVIII. in the hall of the Chamber of Justice, with 
the inscription: 'Strenue semper fides regi suo, in 
seco veritate, praesidium in carceri attulit.'

MALESHERBES/C.E. post. a natural order of polyteneous 
Exogena, with a tubular inferior calyx, with the 
sepal, with eleven to twelve stamens, and a short rim or crown of the same nature as that 
of Passiflorceans, but more rudimentary. The ovary is ovate 
tate, superior, one-celled, with parietal or free placenta. 
The order is therefore nearly allied to Passiflorceans, from 
which it differs in the more elongated and cases remarkable for the beauty of their yellow or white 
flowers, and have been cultivated in this country, their 
seeds having been brought from Chili. They are however 
seldom seen, and are of no known use. [Lindl, Nat. Syst. 
1843.]

MALERBER, FRANÇOIS DE, born in 1555, at 
Caen, in Normandy, of a noble family, studied first in his 
native town, and afterwards at Heidelberg and Basel. On 
his return to France, he accompanied Henri of Anjou, 
throned in January 1554, who went to Paris to receive his 
investiture, and in the same year, 1559, and remained attached to his household till the 
prince's death in 1563. During that period he married 
at Aix in Provence, and settled there. He afterwards 
retired in the army during the war of the League. In the year 
1600 he wrote an ode on the arrival in France of 
Medecis, the wife of Henri IV. With this ode his poetical 
reputation began. In 1605, having come to Paris on private 
business, Henri IV. sent for him, praised his poetry, and 
provided him with the means of remaining at court. After 
the death of the king, which precipitated maladies of 
excitement to the point of suspension in consequence of an ode which he addressed 
in his to her. In 1527 he had the misfortune to lose his only sur-
viving son in a duel. He felt the loss severely, and took 
steps to bring the offenders to justice. He even went a 
quarrel against the writer of an ode which 

This letter is published among his works. Malherbe having 
repaired to the camp before La Rochele, where the cow 
was then pressing the siege of that place, he fell ill, and 
died in a few days, in 1629, being 73 years of age.

Malherbe has been the subject of many critical studies. The 
restorer of the French language and poetry. He had a 
delicate ear and a refined taste, and he was very careful of 
the choice of his expressions. The eulogium bestowed 

Faut sentir dans la vie une juste cadence.

Malherbe's poetry is more remarkable for grace-

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of any of those materials mixed with each other or with any other material; or looms, frames, machines, engines, racks, tackles, or implements prepared for or employed in manufacturing thereon. The materials, whether by force into any place with intent to commit any of those offences. By section 4, it is made felony punishable by transportation for seven years, or imprisonment not exceeding two years, with or without whipping in case of a male, to cut, break or destroy, or with intent to destroy, or to render useless, threshing-machines, or engines or implements prepared for or employed in manufactures, except those manufactures, &c. injures to which are more severely punished under the 7th section.

By the 6th and 7th sections it is made felony punishable by transportation for seven years, or by imprisonment not exceeding two years, with or without whipping in the case of a male, to cause water to be conveyed into mines, or subterranean passages communicating therewith, or to fill it, or obstruct air-ways, water-ways, drains, pits, levels, or shafts, with intent to destroy, damage, or hinder or delay the working of mines; or maliciously to pull down, or destroy, or damage with intent to destroy or render useless, steam-engines, or engines for pumping, draining, or working mines, or staithe, buildings, or erections used in conducting the business of mines or bridges, waggon-ways, or trunks for conveying minerals from mines, whether completed or unfinished. By sect. 12 it is made felony punishable by imprisonment not exceeding four years, with or without whipping in the case of a male, to break down or cut down sea-banks or sea-walls, or the banks or walls of rivers, canals, or marthas, or thereby land or houses. By sect. 13 it is made felony punishable, in the case of a male, to cut off, draw up, or remove piles, chalk, or other materials fixed in the ground and used for securing sea-banks or sea-walls, or the banks or walls of rivers, canals, or marthas, or to open or draw up flood-gates, raise or mischievously lower water in navigable rivers or canals. And by the same section it is made felony punishable by transportation for seven years, or by imprisonment not exceeding two years, with or without whipping in the case of a male, to break down or cut down sea-banks or sea-walls, or the banks or walls of rivers, canals, or marthas, or to open or draw up flood-gates, raise or mischievously lower water in navigable rivers or canals, with intent or so as to obstruct or prevent the carrying on or completing or maintaining the navigation.

It is made felony, punishable by transportation for life, or not less than seven years, or by imprisonment not exceeding four years, with or without whipping in the case of a male, to break down or cut down sea-banks or sea-walls, or the banks or walls of rivers, canals, or marthas, or thereby land or houses. By the 13th section, to pull down or destroy public bridges, or to do any injury with intent or so as to render them dangerous or impassable; and by the 15th section, to cut or destroy hop-bins growing on poles in any hop-plantation.

But the legislature has, at different times, interposed to repress, by penal enactments, injuries to private property in the aggregate, and to prevent the outrages of those who were engaged in the business of the new police. The different statutory provisions against mischievous acts done wilfully and maliciously were modified, as well as consolidated, by 7 and 8 Geo. IV., c. 30, which also extended the punishment rendering it impenetrable whether the mischief of the offender be against the owner of the property or otherwise.

By the third section of that statute it is made felony punishable by transportation for life or not less than seven years, or by imprisonment not exceeding four years, with or without whipping in the case of a male, to cut, break or destroy, or with intent to destroy or to render useless, any goods or articles of silk, woollen, or linen, or of articles in which any of those materials are mixed, or any frame-work-knitted goods. By sect. 5 it is made felony, punishable by transportation for seven years or by imprisonment not exceeding two years, with or without whipping in the case of a male, to set fire to any crop of corn, grain, purple, or pulses, or to any stock of wood, coppice, or plantation, or to any heath, goze, furze, or fern, and by 7 Win. IV. and 1 Vict. c. 89, it is made felony punishable by transportation

M A L

333 M A L

The Crystals contain one equivalent of water; whereas those of citric acid contain different proportions of it, according to the circumstances under which they are formed. When the salt is dehydrated, the crystals are converted into a new substance, the ultimate salt of the acid. The crystals of the acid, therefore, undergo change on being submitted to the influence of heat, water, or other agencies. The ultimate salt is a non-crystalline substance, and is incapable of being converted into a crystalline form. The crystals of the acid are therefore not to be regarded as permanent forms, but as intermediate states.

MALICIOUS INJURIES TO PROPERTY. At common law, mischief perpetrated with whatever motive against the property of another was not punishable criminally, unless the act amounted to felony, was accompanied with breach of the peace, or affected the public convenience. In other cases the offender was liable only to an action for damages at the suit of the party injured. But the legislature has, at different times, interposed to repress, by penal enactments, injuries to private property in the aggregate, and to prevent the outrages of those who were engaged in the business of the new police. The different statutory provisions against mischievous acts done wilfully and maliciously were modified, as well as consolidated, by 7 and 8 Geo. IV., c. 30, which also extended the punishment rendering it impenetrable whether the mischief of the offender be against the owner of the property or otherwise.

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for life or not less than 15 years, or by imprisonment not exceeding three (sect. 10), to set fire to any stack of corn, grain, pulse, tares, straw, haulm, stubble, furze, heath, fern, hay, turf, peat, coals, charcoal, or any steer of wood, or (sect. 11) to set fire to any mine or canal or coal.

The enactments in this statute with respect to the burning of houses, &c. [Asson] have been repealed; and now by 7 Wm. IV. and 1 Vict. c. 89, sect. 2, it is felony punishable by death to set fire to a dwelling-house, any person being therein, and by sect. 3 it is punishable by transportation for life, or not less than 15 years, or by imprisonment not exceeding three, to set fire to a church or chapel, or a chapel for the religious worship of dissenters, or to a house, stable, coach-house, out-house, warehouse, office, storehouse, house, barn, or granary, or to a building used in carrying on trade or manufacture, whether in the possession of the offender or of any person, with intent to injure or defraud any person.

For the protection of shipping against malicious mischief several statutory provisions have been made. By 1 and 2 Geo. IV., c. 75, sect. 11, it is felony punishable by transportation for seven years, or imprisonment for any number of years, to cut, cast adrift, alter, deface, sink, or destroy any ship or vessel complete or unfinished, with intent to destroy them or to render them useless.

By 3 and 4 Vict. c. 89, sect. 5, it is made felony punishable by death to exhibit false lights or signals with intent to bring any ship or vessel into danger, or to do any thing tending to the immediate loss or destruction of ships or vessels in distress. And by sect. 6 it is made felony punishable by transportation for not less than 15 years, or by imprisonment not exceeding three years, to set fire to, cast away, or destroy ships or vessels, with intent to prejudice owners or part-owners of vessels or goods, or underwriters on ships, goods, or freight. And by the 4th sect. it is made felony punishable by death to burn, cast away, or destroy any ship or vessel, either with intent to murder any person or whereby the life of any person shall be endangered.

The criminal responsibility thus created in respect of the acts of spoliation above enumerated, the legislature has given summary relief to persons whose property has been subject to petty but wilful aggressions. The last enactment on this subject is sect. 7 and 8 Geo. IV., c. 30, sect. 24, under which persons wilfully or maliciously committing damage, injury, or spoil, upon real or personal property in which no remedy or punishment is specially provided by that act, are, on conviction before a justice of the peace, to forfeit and pay such sum of money as shall appear to him a reasonable compensation for the damage, injury, or spoil committed, not exceeding 5L, to be paid, on the case ofreira- vate property, to the party aggrieved, except where such party is examined in proof of the offence; and in such cases or in the case of property of a public nature, or wherein any public right is concerned, the money, when applied towards the county-rate or borough-rate; and if such sums of money together with costs (if ordered) are not paid either immediately or within such period as the justice may appoint, the justice may commit the offender to the common gaol or house of correction, and he shall be kept to the term for any term not exceeding two calendar months, unless such sum and costs be sooner paid. This enactment does not extend to any case where the party trespassing acted under a fair and reasonable supposition that he had a right to do the act complained of, and is being wilful and malicious, committed in hunting, fishing, or in the pursuit of game.

By the 28th section any person found committing any offence against this act, whether punishable upon indictment or upon summary conviction, may be immediately apprehended without a warrant, by any peace-officer, or the owner of the property injured, or his servant, or any person authorized by him, and forthwith taken before some neighboring justice of the peace.

These summary proceedings before magistrates must be commenced within three calendar months from the commission of the offence.

The provisions of the law with respect to malicious injuries to property are to be found in the 3d sect. of 1 and 2 Geo. IV. [Pomeroy's Dig.], and the 10th and 11th of the same session [Hawkins's Dig.]. Capital punishment is denounced only against those who set fire to buildings, ships, warehouses, wood-yards (chantiers), forests, underwoods, or grass growing or cut down, or to any combustible matter placed or kept to communicate fire thereto. Minor offences in forests are provided for by tithe 12 of the Code Forestier.

MALINES. [Mechlin.]

MALLEABILITY is that property of certain metals which admits of their being extended by the blows of a hammer or by pressure. In the case of gold exceeds other metals: thus the gold-leaf sold in books is extremely thin, that less than 3 grains cover about 184 square inches, and the thickness of each leaf does not exceed 0.00003 of an inch.

Metals which are malleable are also ductile, that is, they may be drawn into wire.

According to Dr. Thomson, malleability and ductility seem to depend upon a certain quantity of latent heat in the metals which possess those properties. During hammering they become hot, sometimes even red hot, and after this many of them become brittle, owing to the freezing out of the latent heat which they contained. By annealing, which consists in heating them artificially and allowing them to cool slowly, the metals regain their malleability and ductility; and thus it is that we have been made hot by hammering loses its malleabiliy, and cannot be again hammered till it has been annealed.

M. Le Rêc, of Malles, is a family of Monume- narian Conchifers according to the system of Lamarck, in the genera of which are to be found in the family Mur- ritacea of De Blainville. They belong to the tribe Can- tidae, and the Oxygyneae of Latreille. Lamarck placed the family consist of five genera only:---Crencatula, Pro- melleus, Avicula, and Melagryus.

Animal, with the mantle non-adherent, entirely open: its whole circumference, without tube or particular open, prolonged into irregular lobes, especially backwards; the mantle prolonged into a very irregular; hings without teeth; marginal liga- ment subtent, simple, or interrupted by crenulations:--straight, a little prolonged on each side, so as to be sur- rected; hinge teeth; no pit for the ligaments: no passage for a byssus.

M. Rang places the fossill genus Potoniadia at the best of the family, so that the position of that genus is approximated to Lima, which is arranged as the last of the Po- toniacea.

Genus. Potoniadia (Bromii).

Animal unknown. Shell very delicate, nearly membranous, equirad, quadri- quilateral, oblique, rounded, not gaping? cardinal beak straight, a little prolonged on each side, so as to be sur- rected; hinge teeth; no pit for the ligaments: no passage for a byssus.

Potonadia (from specimens in Irish Museum).

M. Rang remarks that this genus had been essays (1829) established for impressions sufficiently common in the schists of Dilmenburg, and which some naturalists have been tempted to refer to rudimentary shells of Aplysia: Pleurobranchus. M. Rang agrees with M. Bronn.
that these are the impressions of bivalve shells, and assigns to _Psitacina_ the position above stated. M. Deshayes however, in the last edition of Lamarck (1836), does not mention the genus among the Malleacea.

_Vulissa._ (Lam.)

_Animal_ elongated, compressed; _mantle_ very much prolonged backwards, and bordered with two rows of papillary tubercles which are very close set; _foot_ small, calcareous, without a byssus; _mouth large_, labial appendages very much developed and triangular; _branchia_ narrow, very long, and united nearly throughout their extent. 

_Shell_ subcuneiform, delicate, elongated, flattened, irregular, inequilateral, subequivalve, the umbones nearly anterior, distant, and a little recurved; _hinge_ toothless, and offering only on each valve a projecting calllosity comprehending a pit for the insertion of the ligament; _muscular impression_ subcentral.

**Geographical Distribution of the Genus.**—The seas of warm climates, more particularly those of the East Indies, though some species are found westward, as at the Antilles, Cape Verde, and the Azores. The species are moored to the rocks and mangrove trees by means of their byssus, and have been found at depths ranging from the surface to ten fathoms.

Example, _Perna Isognomon_. _Locality._—East Indian Ocean.

_Crenatula._ (Lam.)

_Animal_ not known, but very probably bearing a close relation to that of _Perna_. 

_Shell_ foliaceous, flattened, subequivalve, inequilateral, irregular, a little gaping behind, but without any aperture for a byssus; _hinge_ linear, marginal, marked with serial crenulations, which are callous and hollowed into rounded pits for the reception of the divisions of the ligament; _muscular impression_ subcentral.

**Geographical Distribution of the Genus.**—The seas of warm climates, principally those of the East Indies and New Holland, as far as is yet known. The species, which are not numerous, are not fixed by their valves nor by a byssus, but, like the _Vulissa_, are found in submarine bodies, such as sponges, &c.

Example, _Crenatula avicularoides_. _Locality._—Seas of America, especially those of the South.

_Crenatula avicularoides._

_Perna._ (Brug.)

_Animal_ compressed; _mantle_ very much prolonged backwards, and fringed at its lower border; _foot_ very small, with a byssus. 

_Shell_ corneous or black, lamellar, very much flattened, subequivalve, inequilateral, very irregular, gaping in front for the passage of the byssus; _hinge_ straight, marginal, having on each side a row of small parallel furrows, which are transverse, not intransit, and in which the divisions of the ligament are inserted; _muscular impression_ subcentral.

**Geographical Distribution of the Genus.**—The seas of warm climates, more particularly those of the East Indies, though some species are found westward, as at the Antilles, Cape Verde, and the Azores. The species are moored to the rocks and mangrove trees by means of their byssus, and have been found at depths ranging from the surface to ten fathoms.

Example, _Perna Isognomon_. _Locality._—East Indian Ocean.

_Perna Isognomon._

4. Valves closed, showing the byssus; b, inside view of valve, showing hinge and muscular impression.

_Malleus._ (Lam.)

_Animal_ considerably compressed; _mantle_ prolonged backwards, and fringed with very small tentacular appendages; _foot_ very distinct, calcareous, and furnishing a byssus; _burseal appendages_ spherico-triangular; _branchiae_ short and semicircular.

_Shell_ foliaceous, black or corneous, subequal, subequivalve, inequilateral, very irregular, often auriculated, and presenting a hammer or T shape; umbones not distant; an oblique notch in front for the passage of a byssus; _hinge_ linear, very long, toothless; with a conical oblique pit, partially external, for the reception of the ligament, which is triangular and subexternal; _muscular impression_ considerably large and subcentral.

**Geographical Distribution of the Genus.**—East and West Indies (Guadalupe and Martinique) and Australasia. Found at depths ranging from the surface to seven fathoms. M. Rang speaks of the species from Guadalupe and Martinique as having occurred at great depths. The species, which are not numerous, are moored by their byssus to submarine rocks, &c. They are very variable, and indeed M. Deshayes observes that he never saw any two individuals of a species alike. Age makes a considerable change in the shape of the shells, especially in the auricles.

M. de Blainville divides the genus into three sections:—1, consisting of species scarcely auriculated (_Malleus vulsellatus_); 2, consisting of unauriculated species (_Malleus normalis_); and 3, consisting of biauriculated species (_Mallis_).
Mallea vulgaris). M. Deshayes thinks that the greater part of the individuals occurring in collections under the name of Mallea vulgaris may be the young of the variety of Mallea vulgaris with short ears, and he considers Mallea vulgaris and Mallea anatina as identical.

Example, Mallea vulgaris. Locality.—East Indian and South Seas.

Catusius. (Bronng.)—(Fossil only.)

M. Deshayes thus defines Catusius, which is referred to this work from that title to Margoitacea; we however agree with the authors above quoted in thinking this the proper place for the genus.

Shell sometimes flattened, elongated, or suborbicular, sometimes convex, cordiform, subquadrilateral, or quadrilateral, with umbones more or less projecting. Hinge straight, a little oblique or perpendicular to the longitudinal axis; border furnished with a row of small cavities which are very short and gradually increasing; structure of shell fibrous; muscular impression unknown.

M. Deshayes observes that among the genera proposed by Mr. Sowerby in his Min. Con. there is one to which he has added the name of Pachymyga; this genus appears: M. Deshayes to possess all the external characters of Catusius, and he states that he has been led to remark the approximation of that genus to Catusius by studying a few specimens in the collection of M. Duchatel. M. Deshayes proceeds to observe that M. Bronngart has established a genus under the name of Mytiloides for those Catusius which are very much elongated, and that consequently the genus Mytiloides cannot be retained. The genus Catusius thus as reformed by M. Deshayes, will consist of the genera Pachymyga, Mytiloides, and Catusius. Some of the Catusius are of enormous size, and are mentioned as being of many feet in length. M. Deshayes thinks that the animals of Inoceramus and Catusius both wanted a byssus.

Locality.—The White Chalk in England and France.

Example, Catusius cucullatus.

Inoceramus (Fossil only.)

(See the article, vol. xi.)

Inoceramus. (Parkinson.)—(Fossil only.)

Sey the article, vol. xii. Though some malacologists consider Inoceramus and Catusius to be identical, M. de Blainville, M. Rang, and M. Deshayes consider them as distinct species, and as belonging to this family. M. Deshayes gives the following description of Inoceramus.

Shell gryploid, inequilateral, irregular, subquadrilateral, with a lamellar shell, pointed anteriorly, and enlarged at its base; umbones opposed, pointed, and strongly recurved; hinge short, straight, narrow, and forming a right angle with the longitudinal axis, with a series of crenulations gradually smaller for the reception of a multiple ligament. Muscular impression unknown. The species are of moderate size.

Inoceramus subtilus, nat. size. from the Folkstone blue marl. The smaller specimens shows the hinge of one valve, the other valve being cut.

Locality.—Dr. Mantell records several species in the Chalk, two in the Chalk marl, two in the Gault or Folkstone Marl, and one (from Martin) in the Shanklin Sand (Lower Green-sand). 'Organ. Remains of Sussex, Geol. Trans.,' 1829. N.B. Some of the species in the chalk—Inocerami Bronngartii, Lamarchii, and Mytiloides—are Catusius. Professor Phillips records three (one a Catusius) in the White Chalk, one in the Red Chalk, and one in the Lias. (Geology of Yorkshire.) Mr. Lonsdale notices two in the Lower Chalk (Oolite District of Bath). Dr. Fiton records six named species and one undetermined from the Upper Green-sand, Gault, and Lower Green-sand. (See between the Chalk and Oxford Oolite, in Geol. Trans., 1832.)

Example, Inoceramus subtilus.
Animal unknown.

Shell delicate, rounded, equispherical, subquadrilateral, with the umbones inclined a little forwards; hinge composed of eight or ten divergent teeth, forming many spits.

The genus *Arcicula*, which is placed by Lamarck among his Mollusca, but is arranged by M. de Blainville, with many of the genera above described, under his family *Margaritacea*, is separated by M. Rang into a family which immediately succeeds the Malelidae, under the name of *Arcidae*, containing the subgenus *Arcicula* (properly so called) and *Melanistia*. See the article *Arcicula*, vol. iii., to which we think it right to add the description of the animal by M. Deshayes.

Animal oval, flattened, having the lobes of the mantle separated throughout their length, thickened, and fringed in a single layer by the ctenidia of large branchial, nearly equal; mouth oval, rather large, with falciform lips, and with a pair of labial palps on each side, which are large and obliquely truncated; foot conical, very long, extending for the generality of its length by a thread of stout filaments, united in some species, at its base.

M. Deshayes also concedes in merging the genus *Melanista* in that of *Arcicula*, which, according to M. Deshayes's definition of the genus, will contain also the fossil genus *Moneta* of Bronn.

Fossil Malelidae.

Those species which are fossil only are noticed above.

*Vulpes.*—M. Deshayes, in his Tables (Lyell), gives the number of species described by Bolingbroke, and the number of species in the class.

In the last edition of Lamarck he makes the recent species six, with no addition to the fossil species. (Grignon, Lamarck, Paris, Deshayes.)

*Perna.*—The number of recent *Perna* given by M. Deshayes in his Tables amounts to ten recent and four fossil (tertiary). In the last edition of Lamarck, the same recent number is stated, but the fossil species amount to six. (Virginia, Alabama, and the neighbourhood of Havre, Italy, Switzerland, and Vandalia; also in the English Channel, North Channel of France, and the Channel Islands.) Professor Philippi notes one (*Perna quadrata* not mentioned by Lamarck) of the *Corallinae Oolite* (Malton), and also in the *Bath Oolite*. He also notices a *Perna* in the Oxford Clay (infra), in 1740; his paper is in the *Phil. Trans.* of 1740; by Mr. Lonsdale (*Oolite District of Bath, in Geol. Trans.*), and by Dr. Fitton, in the *Lower Green-sand and the Blackdown Sands*. (Geol. Trans.)

We have given a notice of the fossil *Arcicula*.

M. Deshayes, in his Tables, states the number of recent *Arcicula* (including *Melanistia*) at thirty, and gives five as the number of fossil (tertiary). In the last edition of Lamarck he makes the number of recent *Arcicula* twenty-one, and the number of fossil species six. (Paris, Grignon, and Marigny; also in the Channel Islands, British Channel, North Channel of France, and the Cornish coast in England, the Middle and Upper Oolite in England and France, and the Muschelkalk in Germany, Lorraine, and Toulon.) The *Melanista* are two in number, both recent. Dr. Mantell mentions species in the *Oolite* (including *Melanistia*). Professor Phillips records species in the *Corallinae Oolite* and *Calecareous Grav*, in the Oxford Clay, *Kelloway Rock*, *Bath Oolite*, *Inferior Oolite*, and *Marlstone.*

*Prestington* (Yorkshire).—Mr. Lonsdale notices species in the *Oolite* (Culter Earth, Bradford Clay, *Kelloway Rock*, and Kelloway Rock). (Oolite District of Bath.) Professor Sedgwick and Mr. Murchison mention the genus among the *Gossoa Fossils.* (Geol. Trans.) Dr. Fitton records the *Arcicula* in the *Upper Oolite* of Scotland, and the *Lower Greensand*, as the Portland Sand. (Strata between the *Chalk and the Oolite*.) Mr. Murchison figures species from the Old Sandstone (middle and lower beds only), from the *Upper Ludlow* or *Kelloway Rock*, which, as the rock is described, the *Wesleyan* Limestone, and the *Caradoc Sandstone*.

Mallet, David, was born about the year 1700, at Chief, in Berkshire, where his father, whose name was James Malloch, and who is said to have been one of the most skillful and Murchies, kept a small public-house. It is supposed to have been first sent to college at Aberdeen, but he afterwards studied at the university of Edinburgh; and he was attending the classes there and supporting himself by private teaching, after the custom of the Scotch students, when, on the advice of the professors of the university, he was appointed tutor to the sons of the duke of Montrose, with whom he made the tour of Europe. He first became known as a writer by the publication of his ballad of 'Margaret's Ghost,' or, as it was originally entitled, 'William and Margaret,' which appeared anonymously in the 36th No. of the *Month's Magazine of Earth and Sky.* 1st July, 1749. There has been some controversy however as to Mallet's claim to more than the re-casting of this famous ballad. (See Percy's 'Reliques of antient English Poetry,' vol. iv., 393-396, where the ballad is given in the shape in which it was finally adopted by Mallet.) See also M. de Blainville, 'Les Racines de l'Histoire,' a collection of songs, vol. i., 1742, where, at p. 169, it is given as it had appeared the same year in the 'Plain Dealer;' 'The Hive,' vol. iii., published in 1725, where, at p. 157, is given the other poem, which has occasioned the controversy as to the authorship of the ballad. (See also Bishop Hurd's 'Notes on Mr. Spence's History of Friends,' 1773, vol. i., where the attempt was first made to convict Mallet of plagiarism. He now laid aside his paternal name, and took that of Mallet, which he probably gained from a gentleman of that name who had married his mother's sister. He was a man of letters, and suited to his ambition to be taken for a native of South Britain: the earliest known mention of him under his new name in print is said to occur in 1726. In 1728 he published his poem of the 'Excursion,' in 2 cantos; and in 1729 his tragedy of 'The Mustapha' was acted at Drury-lane, with much applause, for the greater part of which however it was probably indebted to the success of the same piece performed before the academy of the Amateurs of Fencing, in the situation of private secretary to Frederic, prince of Wales, with a salary of 200l. In 1739 his tragedy of 'The Mustapha' was acted at Drury-lane, with much applause, and was afterwards entirely rewritten by Mallet, and acted at Drury-lane, in 1751, with no great success. Mallet's remaining writings, the principal are, a 'Life of Bacon,' of very little merit, prefixed to an edition of Bacon's Works, published in 1770; his pupil's, 'Hestor and Thulon,' 1747; and his tragedy of 'Elivia,' acted at Drury-lane in 1763. To this last a political meaning was at least ascribed by the public, and one that was not to the advantage of the play, for Mallet had now become a supporter of the Whigs, and had written a poem in defence of the Duke of York. This was soon after this, and, as it was said, by way of especial reward for his particular service, gave him a place in the Custom House. Mallet was besides already in the receipt of a pension, which he had earned some years before from the Duke of Marlborough, in the administration of the foreign and naval department, which he gave in directing the tide of the public rage against the unfortunate Admiral Byng. Two other transactions complete the history of his vellum literary career: the first, his acceptance of a legacy of 1000l. left by the late Sarah, Duchess of Marlborough, to the Duke of York, the price of 'Life of the Great Duke, of which he never wrote a line; the second, his basely ingratitude attack upon his newly deceased patron Pope, at the instigation of his living patron Bolingbrooke, in the latter's 'Idea of a Patent King' (Bolingbroke, Viscount.) It is believed however that he was in this case rather a lover than a gainer by Bolingbrooke's request to his property of his works, which was his pay for this exposure of himself; he refused the book, but agreed to the price of them, and then published them on his own account.

Mallet was an avowed freethinker or infidel, and indeed he does not seem to have had much principle of any kind. He was vain not only of his literary talents, but of his face, as is evident from the portrait of him painted by Hogarth, which, as Dr. Johnson says, is rather handsome before he became somewhat corpulent, and which he was accustomed to set off with all the advantages of dress. He appears to have made a considerable figure in society, and even Johnson's doubtless disapprobation was not unfounded. He was twice married; first to a lady by whom he had, besides other children, a daughter, who married an Italian gentleman named Ciesi, and wrote a play called 'Almidis,' acted at Drury-lane in 1771; secondly, to a Miss Elstob, by whom he got a fortune of 10,000l. He died possessed of considerable property, 21st

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April 1765. A collected edition of his poetical works was published by himself in 3 vols. 8vo., in 1759.

MALET, PIERRE HENRI, born at Geneva in 1730, became professor of belles-lettres at Copenhagen, where he wrote several works on the history and antiquities of Scandinavian literature, and became also correspondent of the Académie des Inscriptions at Paris. He afterwards returned to Geneva, and was appointed professor of history in the academy of that city.

He died at an advanced age. His principal works are:
1. 'Introduction à l'Histoire du Danemark,' Copenhagen, 1752; 2. 'Édda, ou Monuments de la Mythologie et de la Poesie des Celtes,' translated into English by Bishop Percy under the title of 'Northern Antiquities and the Edda,' 2 vols. 8vo., London, 1770; 3. 'De la Forme du Gouvernement des Arabes,' 4 vols. 8vo., Bordeaux, 1777; 4. 'Histoire de la Marche de Hesse,' 3 vols. 4to., 1777; 5. 'Histoire de la Maison de Brunswick.'

Mallet must not be confounded with Mallet du Pan, also a Genevese writer (born in 1750), who was well known for the expressiveness of his style, and especially for his 'Mercure Britannique,' 1793-99, which, owing to the ability of the conductor and the energy of its language, was one of the most powerful organs of the Anti-Francis of that time.

MALLECKA,

MALLOCA, or MAJORCA, the largest of the Balearic Islands, is situated in the Mediterranean, off the eastern coast of Spain, to which kingdom it belongs. It lies between 3° 20' and 4° N. lat., and between 2° 20' and 3° 20' E. long. from 110 miles from the coast of Catalonia and 120 from that of Valencia. It is nearly 60 miles long from east to west, and in some parts 40 broad from north to south: its circuit is 143 miles, and its area about 1410 square miles. The general surface of the country is hilly. On the east side it is crossed by a mountain, the highest summit of which, the Puèo de Torellas, is above 4500 feet high. Another range of lofty hills runs parallel to this, through the heart of the island, and high grounds in many parts of the coast. The plains, which are arid and barren, are the least in character. Some of the plains are liable to be inundated by the periodical rains, on which account they are generally used as pasture-land.

Near Campos on the south, and near Alcudia on the north of the island, are marshy tracts which generally malarious, and, to a veritable extent. The general aspect of the country is extremely beautiful and picturesque. The roads in the interior are very rugged and stony, and are traversed only by mules, which form the ordinary mode of conveyance, and by bands of nomad and primitive construction, similar to those of Spain.

The climate of Mallorca is delightful, the winters being mild, though occasionally stormy, and the heat of summer being tempered by the sea-breezes and the vegetation.

The island is watered by a number of rivers. The largest of these is mentioned by Strabo. Firth, holm-oaks, and wild olives adorn the slopes, and often cover the summits of the highest mountains; lavender, rosemary, thyme, marjoram, saffron, and roses perfume the air; and the valleys and level tracts produce in abundance corn, wine, oil, and fruit. 'La de l'olivo, palm and the plantain attain their full size, though seldom yielding fruit. The valley most famed for beauty and fertility is that of Soler, 11 or 12 miles in circumference, abounding in orchards of orange and lemon trees, and bounded luxuriously clothed with wells and groves. The island is poorly watered, for there are said to be no less than 210 streams, only two deserve the name of rivers. The larger of these is the Riera, which falls into the sea beneath the ramparts of Palma, the capital. It is almost dry in summer, but in the rainy season it is very full and impetuous, and on several occasions in past ages has carried away great part of the city, and drowned many thousands of inhabitants.

The following are the principal articles of commerce: wheat, barley, and oats; wines of excellent quality, olive oil in large quantities, herbs, vegetables, fruits, particularly melons, oranges, and a little citrus, all of superior flavour; honey, hemp, wool, and a littlelinen. Sheep, goats, horned cattle, and pigs are numerous; poultry and game are abundant. In 1802 the productions of this island were valued at 53,000,000 reals, or about 560,000l. With the exception of a few foxes and hawks, the island is free from beasts and birds of prey; nor are there many venomous reptiles.

The geology of Mallorca is but imperfectly known. Granite and porphyry are said to be found, but the great mass of the rocks are of secondary or tertiary formation. There slate, fine marble of various colours, with abundance of basalt, dolomite, and limestone, have been discovered, but have not been worked. Coral reef is found at the bay of Alcudia. Salt is procured by the evaporation of sea-water in the low grounds about Campos; and in a district west and south of Alcudia, where a warm sulphurous spring, famed for a bath, is said to be, there is a district.

The original colonists of Mallorca were, according to Strabo, Phoenicians. The island fell with Spain successively into the hands of the Carthaginians and Romans. After being taken by M. Metellus, surnamed Balesar, and another colony of 9000 Romans, it was taken by the Vandals in the island. In A.D. 426 it was conquered by the Vandals, who, in A.D. 798 it was conquered by the Arabs. The island was famous for its has been described as being deserted and fortified, but could not sustain a regular attack. Its population is about 33,000. The streets are in some parts narrow and mean, in others wide and regular; the houses are large and without external ornament, mostly in the Moorish, with verandas and court yards, and many are built of marble. Palma has a cathedral, a large Gothic edifice of much simple beauty, but in the beginning of the thirteenth century by James I., surnamed the Conqueror, who is interred with its high and wide doors and massive columns. The church is a pretty ancient abbey, in the reign of 1483. The other public buildings are the cathedral; the royal palace, a very ancient edifice, residence of the captain-general, or governor of the island, comprehending also an arsenal, a magazine, and a prison. There is also the custom-house, and the houses of the canton assembly and judiciary, a Gothic edifice of truly remarkable delicacy and airiness, that it has received the name of 'The Angel's Tower.' There are many other religious edifices in Palma, five parish churches and several convents (recently suppressed), together with several hospitals and two colleges. Ferdinand V., for the two balls of Asturias and Polenzia. It stands on a rising ground, and is flanked by antient walls of great height. Some centuries ago was a large and flourishing city, but is now in a state of decay, with a population of only 1000 souls.

The Balearic Islands are divided into five counties: Mallorca, with 7000 inhabitants; Manacor, with 8000 inhabitants; Palma, with 10,000 inhabitants; Menorca, with 5000 inhabitants; and Formentera, with 3000 inhabitants. There are also smaller towns of less importance, in number. There are also numerous villages.

The manufactures of Mallorca are linen cloths (woven and fine), silk stuffs, and woollen goods, as tabassas, blankets, and jackets, which are made in large quantities. The exported wines are made brooms and baskets. The exports consist of wine, beer, sugar, coffee, spices, tobacco, rice, cutlery, and similar goods, and articles of clothing.
In character the Mallorquines somewhat resemble the Catalans, but are less industrious and enterprising. They are much attached to their country, loyal to the government, and make excellent soldiers and sailors; they are bigoted and superstitious in religion, boisterous, though mild and amiable in disposition, hospitable to strangers, and prepossessing in manners. The print and dress of the men is of all kinds and fond of dress and ornament. Castilian is spoken by the upper and middle classes, but the language of the lower orders is a mixed jargon of Castilian, Catalan, and Arabic.

(Strabo, 167, Caesar; Mariana, Historia General de España, Liv. vi, 1613, for Dénia; 1613, for Vene-

to, and Mut, History of the Balearic Kingdom; St. Sauveur, Travels through the Balearic and Pithidasa

islands.)

MALAY, the common name of the wild species of the genus Malva, the type of the natural order Malvaceae. There are two common weeds of this genus, with flat, ribbed, mucilaginous fruits, enclosed in a calyx, and not unlike a small round cheese, on which account they have in England the vulgar name of Cheeses, and in France of Tomates.

MALSAINO. [Sene et Osir.] MALE.

MALMESBURY. [Wiltshire.]

MALSMBURY, WILLIAM OF, one of the most valuable of our old historians, is said to have been born in Somersetshire about 1016; died 1065; was the son of Robert de Norman, his mother an Englishwoman. When a boy he was placed in the monastery whence he derived his name, where, in due time, he became librarian, and, according to his own account, the most learned man of his time; but his life was a proverbial one of penance and poverty. He is generally supposed to have died about 1160, though Sharpe, in his translation of Malmesbury's 'History of the Kings of England,' says it is probable that he survived this period some time, for his 'Modern History' terminates at the end of the year 1149; and it appears he lived long enough after its publication to make many corrections, alterations, and insertions in that work, as well as in the other portions of his history. Some notion of his diligence may be afforded by the following list of his works:—

1. De Gestis Regum (the history of the Kings of England), containing, in four books, an account of the bishops and of the principal monasteries, from the conversion of the English by St. Augustine to the year 1623, to which a fifth, or 'The History of the Conquest of England,' was added by Henry of Huntingdon, who completed it in 1176. 2. Vita Adalhelmii, in two books, extant in the Bodleian Library, MS. Rawlinson, 263, written at the request of the monks of Gloucester. 3. Vita S. Patrickii, in two books, quoted by Leland in his Collections, but of which only the first part is now extant. 4. S. Passio S. Indracti, MS. Bodley, Digby, 112. 9. De Antiquitate Glastoniacum Ecclesiam, addressed to Henry, bishop of Winchester, and of course written after 1129. 5. Vita S. Wulstani, Eboracensis, a translation of the Anglo-Saxon, the greater part of which is published by Wharton in his 'Anglia Sacra.' 11. 'Chronica,' in three books, supposed to be lost. 12. 'Miracula S. Eligii,' in metro, 13. 'Iterimaria Joanquis Abbatis Melbourni,' or what is called the Itinerary of St. Edmund, of which part is preserved in the possession of the bishops of Lincoln. 14. 'Expositio Thronorum Hieremiensis,' MS. Bodley, 868. 15. 'De Miraculis Divinae M 1

Malmesbury's greater historical works, 'De Gestis Regum,' 'Novellis,' and 'De Gestis Pontificum,' were published by Sir Henry Savile among the 'Scriptores post Bedan,' fol. 1596, reprinted, fol. 1601. A translation of the 'De Gestis Regum,' into English, by the Rev. John Sharpe, was published in 4 to., London, 1813, also 'Antiquitates Malvenses,' or 'History of Glastonbury,' and Wharton, as already noticed, published his 'Life of St. Aldhelm.'

An excellent feature of Malmesbury's literary character is his love of truth. He repeatedly declares that for the greater part of his historical works he had observed the greatest caution in throwing all responsibility for the facts on the authors from whom he derived them; and as to his own times he declares that he has recorded nothing that he had not either personally witnessed or learned from the most credible authority.


MÅMÖ, a town in Sweden, in the province of Skane and the political division of Malmö, is situated about 56° 50' N. lat. and near 13° E. long. It is built on the widest part of the Sound, near opposite the town of Copenhagen, on level ground, and has a good and safe harbour, connected by the Södertuna Canal, 1 mile in length, which is 150 feet wide. It is built, and has regular streets. In the middle is a fine square, 166 yards long and 144 wide. The inhabitants, about 9000 in number, carry on an active commerce in corn, as Malmö is the principal commercial town of the fertile and rich district of Sweden, which is also counted among the manufacturing towns of Sweden, as there are several manufactories in the town, &c. Some of these manufactories are rather extensive. It has a grammar-school and other schools for the poorer classes of society. (Fornell's Statistik von Schweden.)

MALMSEY, a luscious and high-flavoured wine made in the island of Madeira of the Muscatel or similar kind, which are suffered to attain the last stage of ripeness before they are gathered. Malmsey wine has much body, and will retain its good qualities for an indefinite period of time; in fact, it is improved materially by keeping. The quantity made is small, much smaller indeed than the demand, to supply which the wine dealers are said to give facilitation to common kinds of wine, which are then sold under the name of Malmsey. When newly made, Malmsey Madeira is of the same golden hue as the ordinary wine of the island, but, as it ages, it becomes of a rich yellow brown. Some age Malmsey wine is also made in the island of Teneriffe, but the quality is greatly inferior to that of Madeira.

MALO, ST., a seaport in France, on the coast of the English Channel, capital of an arrière-pays in the department of Ille et Vilaine. It is in 48° 30' N. lat. and 2° 2' W. long. ; 194 miles from Paris in a direct line by sea, or 221 miles by the road through Dreux, Alençon, Mayenne, and Fougeres.

A town called Aletum, in the neighbourhood of this place, existed in the time of the Romans, and is mentioned in the 'Notitia Imperii.' The inhabitants, being continually exposed to the attacks of pirates, retired, in the eighth or ninth century, to a neighbouring rocky peninsula, on which they founded a town called St. Malo, from the name of the then bishop of theSee the site of the old town, St. Malo is now called by the Bretons Guich Alet. Before the Revolution, St. Malo was the seat of a bishopric.

The town of St. Malo is on a rocky peninsula on the eastern side of the entrance of the Rance, which opens the roadstead of St. Malo. The peninsula is joined to the main by a causeway about 200 yards wide. A little distance to the south of the town is the St. Malo, separated from St. Malo, to which in reality it forms a suburb, but which, in point of fact, is an island. St. Malo is surrounded by walls and bastions, and defended on the north-west side by a castle built by Anne, Duchess of Bretagne, and in other parts by four forts. The modern part of the town is regularly laid out, and the ramparts afford pleasant walks. The principal public buildings are

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MALONE, the ex-cathedral, the former episcopal palace, the exchange, and the theatre. The harbour, situated between the town, the seaboard, and the mainland, is composed of ruins and sand. Vessels are left dry at low water: the depth at high water is 45 feet. The entrance is difficult from its narrowness, and from its being, as well as the roadstead, beset with rocks and shoals. There are two ports or docks, one of them for the navy, at Servan.

The population of St. Malo in 1831 was 9701 for the town, or 9981 for the commune; that of Servan 7663 for the town, 9753 for the commune; together 17,556 for the town, or 18,734 for the commune. The population of the commune of St. Malo was 9744. The inhabitants manufacture cordage, fishing-nets, and other utensils for the fisheries. There are ship-building yards, and a government snuff manufactury. Trade is not so brisk as formerly, perhaps through the diminution of the English smuggling trade. Considerable business is however done in wine, brandy, snuff, salt provisions, hemp, and pitch; in linens, which are sent to Spain; and in the agricultural produce of the surrounding country. There are depots of salt and of colonial provisions. The latter is one year's in advance in the last eight days. Many vessels are fitted out for the Indies, and for the whale and cod fisheries; and the coasting trade is very active. The sailors of St. Malo are among the best in France. In war-time many privateers are fitted out, the number of which has drawn upon the town several attacks by the English.

There are two churches in St. Malo, beside the ex-cathedral and those in Servan; a foundling and a general hospital, a high-school, a free school for navigation, a drawing-school, and some private schools. Where there is a academy.

Jacques Carteri, the discoverer of Canada; the seaman Duguty-Trouin; Maupertuis, and La Mettrie, a physician who died in exile for doubting the immortality of the soul, were natives of this town.

The greatest poet of St. Malo comprehends 60 communtes, and is divided into nine cantons, or districts under a justice of the peace: its area is 307 square miles; the population in 1831 was 120,561; in 1836, 118,243. The cultivators of the land are extensively employed carrying on their occupations would be much more so but for the government restrictions.

MALONE, EDMOND, was born at Dublin in 1741. His father was one of the judges of the Court of Common Pleas in Ireland; and the subject of this notice, having taken a degree at the university of Dublin, was called to the Irish bar in 1767. Mr. Malone was however devoted to literary pursuits; and an independent fortune having devolved upon him, he took up his residence in London, and became an intimate of the more eminent literary men of that day. He was president of Johnson's literary circle, and was subsequently distinguished, principally as an editor of Shakspere. His first publication, connected with his favourite subject, was that of a Supplement to Steevens's edition of 1778, in 2 vols. This contains Shakspere's sonnets and other poems; and in the various places where various consent have been rejected from his works — we mean 'Sir John Oldcastle,' 'Locrine,' &c. It also includes 'Pericles,' which has subsequently found a place in the various editions; Malone wrote in this work many qualities which in some degree fitted him to be an editor of Shakspere's undoubted works; and in 1790 he brought out an edition of his own. He had previously contributed some notes to Steevens's edition of 1785. There were essential differences in the union between Steevens and Malone, which would have rendered their co-operation perhaps impossible. Steevens carried his disregard of the authority of the text of the old editions to an extravagant length; Malone, on the contrary, had a proper deference for that author's works. Especially, in his first folio; Malone, in a much greater degree, respected it: Steevens was coarse and even prurient in his editorial remarks; Malone was cautious and inoffensive: Steevens had more acuteness; Malone the greater common sense. As it was the latter who published a rival edition, and Steevens quarrelled with him for ever. In Malone's edition, his History of the Stage was, for the time at which it was written, a remarkable performance; and his Essay on the uses of the three years of Henry VI. displays great critical sagacity and discrimination. The qualifications which he exercised as an editor of Shakspere were equally exhibited in the part which he took in the controversy as to the genuineness of the Rowley poems. The Shakspere of the manuscripts, by his theory, was as the earliest printed book. He was amongst the first to proclaim his belief that the pieces attributed to Rowley were the production of Chatterton and the imposture of Henry Ireland was very clearly pointed out by him in a letter addressed to Lord Byron. Malone was the first to introduce a scientific method of searching into our earlier literature, and is partly indebted to, amidst the mass of nonsense which this controversy called forth. Malone also published, in 1797, the posthumous edition of the works of Sir Joshua Reynolds, with a memoir, he being one of the eminent mass-executors. The remainder of his life was spent in adding to his notes on Shakspere, and preparing for a new edition, which he did not live to complete. His death took place in 1812, when he was in his seventy-first year. His posthumous editions of Shakspere were retouched edited, and published by his friend Mr. James Bowtell, in 1821, in 21 vols. Of Malone it is not, perhaps, very high praise to say that he was not by doubt the best of the commentators on Shakspere. He, is, compared with his predecessors, more trustworthy and private, less of a dramatician, and more rarefied, to interpret what he found in the text than to substitute his own conjectures. But he belonged to an age when the merit of Shakspere was not properly appreciated: and it is, like the rest of his brethren, cold and captious. He was a critical school which, to a great extent, is fortunately extinct.

MALOPE, a genus of Malvaceous plants, consisting of two species, one of which is commonly cultivated as a favourite hardy annual. This plant, Malope malacoides, is a peculiar member of the genus, where it is found on the rocks, which it ornaments with its large crimson flowers; it is also met with in Sardinia and other parts of the west of Europe. The genus differs from Malva in having carpel distinct, and heaped irregularly over a central receptacle. The flowers are white or pink, and consolide. Three or perhaps four other species are known to botanists.

MALOUINES. [FALKLAND ISLANDS.]

MALPAS. [CHELTENHAM.]

MARY, MARCELUS, was born near Bologna in 1628. He studied medicine in that university, and in 1633 received his doctor's degree. His chief instructor was Massari, at whose house he tells us that he and a few other select students were accustomed to meet for three or four hours after dinner every day. In 1656 he was appointed professor of medicine at Bologna, but soon after resigned on being invited to a similar office in the university of Pisa. Here he formed intimate acquaintance with Borelli, the professor of mathematics at Pisa, and he subsequently, by the advice of the latter, received the offer of the chair of medicine at Messina, where he held the professorship of medicine for four years. He then again resided near Bologna 1651, when he was summoned to Rome, and appointed chief physician and chamberlain to Innocent XII. In 1655 he died an apoplexy.

Malpighi is now chiefly remembered in connection with his discoveries in the anatomy of the skin and of the secreting glands. He first described clearly the structure of the tongue, showing that it is at once muscular and sensitive, and he pointed out the slippery, moist surface as the seat of sensation. Imagining that he could perceive a structure in the skin analogous to that of the surface of the tongue, he examined the former in animals, and at length succeeded in demonstrating that it is everywhere beset with delicate papillae, the chief organs of the touch. In the coloured papilla of the tongue of the ox he had first discovered the sacro-mammary, or, as it is often called in his honour, rete Malpighian and afterwards showed a similar membrane on the soles of the hands and the soles of the feet, and in the soft parts of the ears.

On the structure of the skin, Malpighi was long engaged in a discussion with Ray, maintaining that all glands consisted of ducts terminating in
Malpighia macrophylla.

Malpighia macrøphylla.

1. an entire flower, much magnified; 2. the stamens and pistil; 3. a transverse section of the ripe fruit.

inhabiting various parts of the tropics. They are usually shrubs or trees, and but seldom herbaceous plants. In addition to the more general characters already mentioned, they have in a majority of cases a pair of convex oval glands on the face of each sepal, and in many species the hairs are attached to the leaves, &c. by the middle; so that hairs of that description have acquired the name of Malpighicous. Many of them are beautiful objects, especially the Galphimias and climbing species of Hyma and Banisteria; a few only are useful. The bark of Malpighia reris and erassiphio is a kind of febrifuge. The fruit of Malpighia glabra is the Barbadoe Cherry of the West Indies: it varies in size, from that of a large pea to a small cherry, is smooth, shining, and has three triangular stones; it is juicy and sweet, but insipid; it contains a radicula. All nima coriaceae, or Lotus-berry of the West Indies, is of much better quality; it is yellow, and contains a single stone. A few kinds produce timber of a bright yellow colour.

The order is nearly related to the Aceraceae, and Sycamores of colder climates differing in habit except the tertiary division of the fruit, the symmetrical flowers with ungueulate petals, and the pendulous or suspended seeds.

MALPLAQUET. [Malborough, Duke of.]

MALP is grain, a barley which has become sweet and more soluble in water from the conversion of its starch into sugar by artificial germination to a certain extent, after which the process is stopped by the application of heat.

For the following short sketch of the process, which is called malting, we are chiefly indebted to a valuable work on Vegetable Chemistry, recently published by Dr. Thomson, of Glasgow.

The barley is steeped in cold water for a period which (as regulated by local custom) may not be less than 40 hours, but beyond that period the steeping may be continued as long as it is thought proper. Here it imbibes moisture, and increases in bulk; at the same time a quantity of carbonic acid is emitted, and a part of the substance of the barley is dissolved by the steep-water. The propylene of water imbibed depends partly upon the barley, and partly on the length of time that it is steeped. From the average of a good many trials, it appears that the medium increase of weight from steeping may be reckoned 0.47, that is to say, every 100 pounds of barley must weigh about 47 pounds. The average increase of bulk is about a fifth; that is to say, 100 bushels of grain, after being steeped, swell to the bulk of 120 bushels. The carbonic acid emitted while the barley is in the steep is insensible and distensible, and it is recoverable from the experiments of Saussure, that it owes its formation, at least in part, to the oxygen held in solution by the steep-water.

The steep-water gradually acquires a yellow colour, and the peculiar smell and taste of water in which straw has been steeped. The quantity of the portion of which it holds in solution varies from 1/5th to 1/16th of the weight of barley. It consists chiefly of an extractive matter of a yellow colour and disagreeable bitter taste, which deliquesces in a moist atmosphere, and which always contains a portion of nitrate of soda. It holds in solution most of the carbonic acid dissolved.

This extractive matter is obviously derived from the husk of the barley, and is that substance to which the barley owes its colour. Accordingly grain becomes much paler by steeping.

After the grain has remained a sufficient time in the steep, the water is drained off, and the barley thrown out of the cistern upon the malt-floor, where it is formed into a heap called the couch, about 16 inches deep. In this situation it is allowed to remain about 24 hours. It is then turned by means of wooden shovels, and diminished a little in depth. This turning is repeated twice a day or oftener, and the grain is spread thinner and thinner, till at last its depth does not exceed a few inches.

When placed in a couch, it begins gradually to absorb oxygen from the atmosphere, and to convert it into carbonic acid, at first very slowly, but afterwards more rapidly. The temperature, at first the same with that of the external air, begins slowly to increase; and in about 90 hours the grain is on an average 2 degrees hotter than the surrounding atmosphere. At this time the grain, which had become dry on the surface, becomes again so moist that it will wet the hand, and exhales at the same time an agreeable odour, not unlike that of apples. The appearance of this moisture is called sweating. A small portion of alcohol appears to be volatilized at this period. The great object of the malt-man is to keep the temperature from becoming excessive, which is effected by frequent turning. The temperature which it is wished to preserve varies from 55° to 62°, according to the different varieties of malting purposes.

At the time of the sweating, the roots of the grains begin to appear, at first like a small white prominence at
the bottom of each seed, which soon divides itself into three rootlets, and increases in length with very great rapidity, unless checked by turning the malt. About a day after the sprouting of the roots, the rudiments of the future stem, called acaeporae, appear, and these, as they increase in length, rise from the same extremity of the seed with the root, and advancing within the husk, at last issues from the opposite end; but the process of malting is stopped before it has made such progress.

As the acaeporae shoots up the grain, the appearance of the kernel, or mealy part of the corn, undergoes a considerable change. The glutinous and mucilaginous matter is taken up and removed, the colour becomes white, and the texture so loose that it crumbles to powder between the fingers. The object of which it is produced changes; when it is accomplished, which takes place when the acaeporae has come near to the end of the seed, the process is stopped by drying the malt upon the kiln. The temperature at first does not exceed 90°, but it is raised very slowly up to 140° or higher, according to circumstances. The malt is then cleared, to separate the rootlets, which are considered injurious.

Barley, by being converted into malt, generally increases two or three per cent. in bulk; and losses, at an average, about 20 per cent., in weight, of which 12 are ascribed to kiln-drying, and consist of water, which the barley would have lost had it been exposed to the same temperature; so that the real loss does not exceed 8 per cent. From many trials, many of which are mentioned in all the circumstances as possible, Dr. Thomson considers the following to be the way of accounting for this loss:

| Carried off by the steep-water | 1 5
| Dissipated on the floor | 3 0
| Roots, separated by clearing | 3 0
| Waste | 2 5

8 0

The loss on the floor ought, in Dr. Thomson's opinion, to be entirely owing to the separation of carbon by the oxygen during the process; but it is only obtained in a much smaller amount than the latter, according to the same authority. There are causes concur to produce this loss:—1. Many of the roots are broken off during the turning of the malt; these wither and are lost, while others grow in their place. 2. A certain portion of the seeds lose the power of germinating, by bruises and other accidents, and these lose a much greater portion than three per cent. of their real weight. After numerous careful trials, Dr. Thomson is disposed to conclude that the quantity of carbon separated during the whole process of malting, by the formation of carbonic acid gas, does not exceed two per cent., and that the weight of the roots formed amounts often to four per cent. These two, in reality, include the whole loss of weight which barley sustains when malted. What is lost in the steep, being a husk, need scarcely be reckoned.

In the opinion of Dr. Thomson, the roots appear, from the process, to be formed chiefly from the mucilaginous and glutinous parts of the kernel. The starch is not employed in their formation, but undergoes a change, intended, no doubt, to fit it for the future nourishment of the plume. It acquires a sweetish taste, and the property of forming a transparent solution with hot water. In short, it approaches somewhat to the nature of sugar, and is probably the same with the sugar which in the starch is converted by boiling it with diluted sulphuric acid.

The following are the results of Dr. Thomson's analysis of barley and the malt made from it:

<table>
<thead>
<tr>
<th></th>
<th>Barley</th>
<th>Malt</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>8 3 1 4 16</td>
<td>6 9 6 9</td>
</tr>
</tbody>
</table>

In brewing ale, porter, and table-beer, three different kinds of malt are employed, which are known as pale and amber malts, brown or blown malt, and roasted or black malt, sometimes called patent malt. The pale or amber malt yields a beer of lighter hue; or formed the brown malt is not fermentable, but is employed to impart flavour; and the roasted malt is employed, instead of burnt sugar, merely to give colouring matter to porter.

The analysis of malt above stated is that of pale malt, whilst in the brown and roasted malts the sugar appears to be entirely converted into gum and colouring and extractive matters; and hence they are incapable of undergoing fermentation. The brown malt is subjected to a higher temperature in drying than the pale malt, and by a still further exposure to heat in revolving cylinders or roasters it is converted into black or patent malt.

Statistical note. In 1787, the malt was first made to contribute to the public revenue in England in 1697. In Scotland the duty commenced in 1713, and in Ireland, in 1763. The rate of duty, calculated on the imperial quarter, was, in England 6 d. per bushel from 1697 to 1760, from the latter year to 1790 the duty was 12 d. per bushel; from 1790 to 1816 the duty was 14 d.; it was then for a short time raised to 1 z. 7 d., but was lowered to 1 z. 6 d. again in 1793, and continued till 1802, when it was raised to 2 s. 6 d., and in the following year was further raised to 3 s. 4 d., and was continued till 1816, when it was reduced to 2 s. 6 d. In Scotland the duty was advanced to 3 s. 7 d.; in 1822 it was reduced to 2 s. 7 d., and has continued at that rate until the present time. In Scotland the duty from 1713 to 1726 was 3 d. per bushel; in 1726 it was reduced to one-half that rate until 1760; in 1780 it was again advanced to 3 d. per bushel, and in 1794, to 1 d. In 1804 a distinction was made in the duty, according as the malt was made from barley or from other bogg, and thereupon the rates have been as follows:

<table>
<thead>
<tr>
<th>From Barley</th>
<th>From Barley or Bogg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1804</td>
<td>3 7 d.</td>
</tr>
<tr>
<td>1819</td>
<td>3 7 d.</td>
</tr>
<tr>
<td>1820</td>
<td>3 7 d.</td>
</tr>
<tr>
<td>1821</td>
<td>2 7 d.</td>
</tr>
<tr>
<td>1823</td>
<td>2 7 d.</td>
</tr>
<tr>
<td>1840</td>
<td>3 7 d.</td>
</tr>
</tbody>
</table>

There has not been any alteration since 1822.

In Ireland the duty first charged in 1765 was 7 d. per bushel; in 1794 the rate was advanced to 9 d., and in the following year to 1 z. 3 d.; in 1798 to 1 z. 5 d., and in 1799 to 1 z. 6 d. Further additions were made in 1803 to 1 z. 9 d., in 1806 to 2 s. 3 d., in 1807 to 3 s., in 1808 to 3 s. 4 d., and in 1815 to 4 s. 5 d. A reduction took place in 1816: 2 s. 4 d.; in 1826 the duty was again raised to 3 s. 6 d. and was again reduced in 1829 to 2 s. 7 d. The only alteration since was made in 1836, when the duty on malt from barley was reduced to 2 s. per bushel.

The quantity of malt charged with duty in various years in the different divisions of the kingdom, and the amount of revenue received thereon, have been as follows:

<table>
<thead>
<tr>
<th>Years</th>
<th>England</th>
<th>Scotland</th>
<th>Ireland</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bushels</td>
<td>Bushels</td>
<td>Bushels</td>
<td>Bushels</td>
</tr>
<tr>
<td>1703</td>
<td>26,764</td>
<td>4,800</td>
<td></td>
<td>26,764</td>
</tr>
<tr>
<td>1704</td>
<td>25,700</td>
<td>3,750</td>
<td></td>
<td>25,700</td>
</tr>
<tr>
<td>1705</td>
<td>23,550</td>
<td>3,333</td>
<td></td>
<td>23,550</td>
</tr>
<tr>
<td>1706</td>
<td>23,000</td>
<td>3,000</td>
<td></td>
<td>23,000</td>
</tr>
<tr>
<td>1707</td>
<td>22,500</td>
<td>2,800</td>
<td></td>
<td>22,500</td>
</tr>
<tr>
<td>1708</td>
<td>22,000</td>
<td>2,600</td>
<td></td>
<td>22,000</td>
</tr>
<tr>
<td>1709</td>
<td>21,500</td>
<td>2,400</td>
<td></td>
<td>21,500</td>
</tr>
<tr>
<td>1710</td>
<td>21,000</td>
<td>2,200</td>
<td></td>
<td>21,000</td>
</tr>
<tr>
<td>1711</td>
<td>20,500</td>
<td>2,000</td>
<td></td>
<td>20,500</td>
</tr>
<tr>
<td>1712</td>
<td>20,000</td>
<td>1,800</td>
<td></td>
<td>20,000</td>
</tr>
<tr>
<td>1713</td>
<td>19,500</td>
<td>1,600</td>
<td></td>
<td>19,500</td>
</tr>
<tr>
<td>1714</td>
<td>19,000</td>
<td>1,400</td>
<td></td>
<td>19,000</td>
</tr>
<tr>
<td>1715</td>
<td>18,500</td>
<td>1,200</td>
<td></td>
<td>18,500</td>
</tr>
<tr>
<td>1716</td>
<td>18,000</td>
<td>1,000</td>
<td></td>
<td>18,000</td>
</tr>
<tr>
<td>1717</td>
<td>17,500</td>
<td>800</td>
<td></td>
<td>17,500</td>
</tr>
<tr>
<td>1718</td>
<td>17,000</td>
<td>600</td>
<td></td>
<td>17,000</td>
</tr>
<tr>
<td>1719</td>
<td>16,500</td>
<td>400</td>
<td></td>
<td>16,500</td>
</tr>
<tr>
<td>1720</td>
<td>16,000</td>
<td>200</td>
<td></td>
<td>16,000</td>
</tr>
<tr>
<td>1721</td>
<td>15,500</td>
<td>0</td>
<td></td>
<td>15,500</td>
</tr>
</tbody>
</table>

It cannot fail to be observed, from these figures, that the increased consumption of malt in this country has been of very inadequate proportion to the increase of the population. In the year 1730 the population of England and...
Wales was 5,687,983, and it will be seen that the number of bushels of malt made for their use was within a minute fraction of five bushels for each. In 1831 the numbers were 13,894,574, and the consumption of malt 32,963,470, being less than 24 bushels for each. The reason for this comparative falling off is to be sought in our fiscal regulations. Under the Order in Council, malt was subject to a duty of one-fifth of the rate paid in 1831; and this alone would of course tend to check the consumption; but coincidently with this cause the importation of foreign-made malt has been prohibited; and as all the land in England fitted for the production of fine barley, as is suited for the maltster, has long since been so applied, the consumption has been by that means starved, and the price enhanced so as to come in aggravation of the high duty. The importation of barley from foreign countries is allowed under very high duties, and during the last 30 years the importation of barley under no state of the market can any addition be thus made to the quantity of malt in this country, because barley which has undergone a voyage of any length is unsuited to the process of malting.

Malta.—General Description.—The Maltese islands, in the Mediterranean, lie between 35° 49′ and 36° 30′ N. lat., and 14° 10′ and 14° 36′ E. long. from Greenwich. Malta is 56 miles from the nearest point of Sicily, and 179 from Cape Damos, the nearest point of the mainland of Africa. Its greatest length is 30 miles, and its greatest breadth 18 miles, and its circuit, as a boat would sail it, 44 miles. It contains two principal ports on the south-east side of the island, which are separated by a tongue of land a mile and a half long, on which are built the castle of St. Elmo and a light-house. From the space between the two forts the town of Malta (formerly called Mount Sciberras) is 200 feet above the level of the sea, but lowers towards the point, and is almost flat at the part where it joins the mainland. On this advantageous position is built the modern city of Valletta, which which is at present the Government and the capital of the island. It is defended on all sides by the most stupendous fortifications, which no power commanding less abundant resources than the Knights of St. John of Jerusalem, who drew large revenues and sometimes contributions from the richest countries in Europe, could have constructed. Other works situate on the opposite side of the great harbor are of nearly equal strength; amongst which is the powerful castle of St. Angelo, that takes the entrance of the harbour, with four tiers of guns, the heaviest of which is 16 pdr., corresponding to these, and completely forbidding every approach. Altogether the place is considered impregnable, which was proved by the fruitless endeavours of the British to expel the French garrison in 1798-1800.

With the British troops took possession of the place, after the capitulation of 1800, there were upwards of 800 pieces of ordnance mounted on the fortifications. The land-front of Valletta is defended by a strong line of works, which stretch across from one port to the other, having within them two very high cavaliers, which command the town and country, and look into the works on the opposite sides of each harbour. This front is strengthened by a dry ditch running its whole length, excavated in the rock to a depth varying from 90 to 140 feet. Outside the works of Valletta, there are three forts, on the land, and a line of fortifications, consisting of an interior and exterior line and a horn and crown-work in front of them. The total number of embrasures in the defences of Valletta and its ports, including the three cities, is 547; but as the castles and some of the passageways are on high land, it may be calculated that the number of guns required to mount these works completely would be 1150. Many however are kept in store, and the embrasures at some points are considered useless.

The island, which is to the eastward of Valletta, is about 3400 yards in length, with an entrance 430 yards wide, defended by a strong fort opposite the castle of St. Elmo, called Ricasoli, which crosses the fire, but is commanded by that castle. The harbour varies in width from 300 to 400 feet, and contains three deep inlets or bays, which are of themselves ports and capable of containing many ships of war. In one of these is situate the naval arsenal, consisting of a rope-walk, the offices of the naval departments and extensive storehouses, which would contain all that is necessary for the fitting out of a very large fleet. On the opposite side of the same cove are handsome residences for the superintendent and officers of the navy, and spacious stores for the victualling department. Here also are three immense arches of masonry, under which the galleys of the Order were built, and drawn up for repair and for protection from the weather. All these buildings and those of the Order have been greatly improved by the British government. On a prominent point opposite Valletta, called Bighi, stands the new naval hospital, which was built by a vote of parliament in 1830, and is one of the many striking objects which surround this beautiful harbour. The entrance of the port has no bar or other impediment, and the water is so deep that the largest ships can sail in, close under the basements of Valletta, direct to their anchorage. In the great harbour and its coves five and twenty sail of the line have been known to lie at once, and the number of merchant vessels is between four or five hundred merchantmen. The only wind which renders it dangerous for boats to ply, or creates any uneasiness for the shipping, is the north-east (commonly called galea), and that only when it blows hard; but there is good building ground, and accidents are rare.

The harbour to the westward, which is called Marsamusco (a word signifying, in Arabic, 'a place of shelter'), has at its entrance, opposite to and besides the castle of St. Elmo, a small but powerful fort called Fort Tigné. It is principal for the arrival of vessels from the countries infected with the plague, and it is therefore commonly called the Quarantine harbour. Here is also the lazzaretto, a suite of extensive buildings, built on an island in the centre of the harbour, with which have lately been combined the buildings of the three hospitals of Manoel, on the same island; the whole forming the most complete quarantine establishment in the Mediterranean. In addition to its former accommodations a new quarantine hospital is now nearly finished. Since the plague of 1813-14 occurred, the case of plague has occurred in the island, though many infected ships and crews have been received in this lazaretto.

Besides the harbours already mentioned there are several bays which ships sometimes enter in stress of weather, round as Marsamxett, on which is Paceville, and Malta Scala, to the south-eastward of Valletta, and St. Julian's, St. Paul's, and Melieha, to the north-westward, on the shores of which, as well as on all parts of the island where a landing could be effected, small towers are erected, which under former governments served to give alarm in case of the appearance of an enemy, but are now only used to prevent smuggling and maintain the quarantine laws.

The whole of the southern coast of the island is by nature inaccessible. The cliffs rise from the sea to the height of several hundred feet. The island slopes from the southern to the northern side.

The small islands of Gozo, Comino, and Filfla belong to the group of the Maltese islands. The island of Gozo is about three miles and a half in length, and an oval in form, about ten miles long by five and a half in breadth; it has no town or port on its coasts, and is only approachable by small craft. Its coasts are perpendicular on all sides, and it is studded with a few points of high land in the form of cones, one of which, bumpo about 570 feet high, serves as a landmark to vessels coming from the westward. Between Malta and Gozo stands the little uninhabited island of Comino, in the channel between the two islands, which has a depth of water sufficient for the largest vessels. This island is无inhabited. Another small island called Filfla, one mile and three-quarters south of Malta, is about a mile long and half a mile wide; it is a high perpendicular rock, also without inhabitants.

The general appearance of Malta and Gozo at sea is that of flat lands, the highest part of which is less than 600 feet above the level of the sea, and not visible at a greater distance than 24 miles. From being entirely barren, it has, without any trees of large size, and a part of the year without any verdure whatever, the aspect of these islands is dreary and barren.

Particular Description.—The scene on entering the port of Malta is one of the most striking and beautiful that can be conceived. This magnificent harbour is surrounded with bastions, over which appear handsome buildings and the towers of numerous churches, all built of stone, and
MALTESE TO THEIR RELIGION, AND THEIR FONDNESS FOR ITS FORMS
INDUCE THEM TO MAKE GREAT SACRIFICES FOR THE MAINTENANCE OF THEIR CHURCHES, WHICH ARE RICHLY DECORATED. THERE ARE MANY LARGER TOWNS ON THE CONTINENT, AND EVEN IN AS MANY AS MALTA, WHERE THE CATHEDRALS ARE NOT MORE SPLENDID THAN SOME OF THE VILLAGE CHURCHES, AND WHICH DEPICT THE SPIRITUAL CONTRAST OF POVERTY AND SIMPLICITY OF LIFE IN THE VILLAGE POPULATION.

There are no streams in Malta, and but few springs. The rain-water is collected in tanks, which are carefully re-buffered and then transported to the cultivated lands; in ordinary seasons the tanks in the country are sufficient for agricultural purposes. The inhabitants of Malta and the shipping are supplied with water by means of an aqueduct which conveys it from the mountains. It also irrigates all the lands in its passage.

In seasons of great drought however the water is scanty. This magnificent work of the Grand Master Wignacourt was built in 1616; it is eight miles and a half long, in some parts supported on arches, and on others running underground.

Gozo consists of six casals, and in the center of the island on a considerable eminence, about four miles distant from Mignarro, the principal landing-place, is a very old castle. The works of which are in a ruinous state. The inhabitants of the island, before the construction of towers on the castle, were obliged to retire every night within the presents of these fortifications to protect themselves from the Barbarescors. At the foot of this castle is a populous village called Squillace, the surface is more undulating, and its gardens are rich, produces a great quantity of fruit and vegetables, and is surrounded by fields made from goats' milk, which are daily sent to Malta. The communication is kept up by 18 or 14 boats with the island of Tellia, a small rock lying off the western end of Gozo; it was celebrated as a stibris and was applied externally to stop bleeding. Gozo contains a remarkable ruin called the Great Tower, from its being built of enormous stones, with cement. The cement, which is of a very pure lime, may be traced, but there is no style of architecture discoverable in these remains, nor any other indication of the area to which they belong, except that they are megalithic, and certainly of very great antiquity.

AGRICULTURE.—The surface of Malta and Gozo is estimated at 114 square miles, or 72,560 acres, of which two-thirds are cultivated, and the remaining third is bare rock. Notwithstanding what has been said of the appearance of the island, a spot which nature seems to have marked out as conspicuous is its present state of beauty by the enterprise, who with great labour and expense cut out the hard surface of the rock, and frequently finds a quality of earth lying inert in the crevices and interstices between those layers, seldom more than eighteen inches deep, on loose broken-up rock; and such is the favourable climate, and the porous quality of the rock itself, that it retains a certain degree of moisture, that the farmer cannot not. After the work is not always been long enough to have been completed, and the work being obliged to let his land lie fallow. The warm rain in summer is supplied by a heavy dew which falls at night. The produce of Malta is cotton (which is superior to Egypt), wheat, barley, pulse, potatoes, barley, currants, and barley. The produce of Gozo consists of cotton, wool, and barley, which are abundant in summer. The produce of cotton is excellent, and the quality of the island's wines and wines is excellent. The Maltese orange is superior to all others, and melons, figs, and grapes are of particularly fine flavour. No wine is made in Malta.
carob grows in abundance: some of the carob-trees are a hundred years old, and annually produce a plentiful crop. In the first weeks of August the broad leaves of the carob, from the scarcity of pasture, very few cattle are bred. Meat is principally imported from Barbary. Horses are also imported, but some mules are reared, and the ass is the celebrated for their strength and beauty; they fetch large sums for exportation. Goats are likewise bred, which are prized for the quantity of milk they give. An animal once peculiar to Malta is the small dog with a long silky coat, mentioned by Pliny, which Buda and other places have also; they are considerably bred. No venomous reptiles are known. As fish forms a large portion of the food of the inhabitants, the markets are well supplied with the common kinds. The dory, rock-cod, white and red mullet, and a species of whiting, commonly called lamp, are however generally to be had and are excellent. The cray-fish, found on the rocks of the island of Gozo, are of enormous size and fine flavour.

Roads and Appearance of the Country.—The roads in Malta and Gozo, generally speaking, are good, and communicate with all parts of the island. The carts, with their wheels and shafts, and is made to carry four persons, but always drawn by one horse, by the side of which the driver runs. The glare of the hot naked roads, without hedges and without trees, is injurious to the eyes under a bright sun; and in this respect Malta is in a way inferior to Gozo. The day or duration, the eye rests upon the innumerable stone dwarf walls, which are built up with the utmost care to prevent the precious earth from being washed away by the rains; and these thin walls, relieved here and there by the fine rich dark tint of figs or apricots, while others again occasionally by the cactus, or Indian fig, which grows in considerable abundance.

Climate.—Although these islands cannot boast of rich lands, they have a great quantity of well-tiled vineyards in Europe. If the shade of trees be wanting, the inhabitants are free from the damp and stagnant air which infects woody countries; and the barrenness of the rock is compensated by the absence of vegetable putrefaction. During the height of summer the heat is sometimes very oppressive; but the houses are spacious and well-built of stone, particularly in the capital. Valetta is superior in this respect to any town on the continent. For the greater part of the year the atmosphere is so clear that it gives unless otherwise concerned; and, in general, the climate is not to be absolutely without distrust of sun or storm, while others again consider it more variable than the climate of England. Amid this great diversity of opinion however, it is almost universally admitted to be remarkably healthy. On further subject in various parts of Europe, the heat indicated by the thermometer within doors has been—maximum 90°, minimum 46°, medium 63°. Every person accustomed to thermometrical observations is aware of the difference between sensible heat and that indicated by the thermometer; which latter is much greater than the apparent. The heat on the heat of the inside of the house is not so intense as on the outside, and greatly depends on the state of the wind; and it is in the night season that the heat is most oppressive, so much so as to justify the term 'impossible,' which is often applied to it. The sun in summer remains so long above the horizon that it is well made that the human frame is not capable of retaining the heat, that they never have a sufficient time allowed them to get cool; and during the short nights this heat radiates from them so copiously as to render the nights as hot as the days, and much more oppressive to the feelings than the day. In the morning just before the day's light, and in the evening just after the day's light, the atmosphere is cooler with darkness. 'I have seen the thermometer (says Dr. Hennen) in a very sheltered part of my house steadily maintain during the night the same height to which it had risen in the day, while I marked it with feelings of increased oppression, and this for nearly three successive days.

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but the people are industrious, temperate, and frugal, and, being favoured by the climate, their wants are few. The great bulk of the people, who are not employed in field-labour, are stone-cutters. The Maltese are also excellent seamens, and are esteemed such in all the ports of the Mediterranean. The Vallettans, through the close connection with the English, all articles of household furniture are made in a superior manner, and much furniture is exported to the Levant. Workmen and artisans of all descriptions are numerous and expert in their respective trades. Their earnings in any of a learned and scientific education, and several erudite works have been written by Maltese authors. Since the Report of the Commissioners of Inquiry in 1838, the means of education have been more widely diffused; the government having, with a view to raise the population from their state of gross ignorance, undertaken the establishment of primary schools throughout the rural districts. Of these there are already twelve open (including Gozo), at which 1,580 children receive instruction. In Valletta and the three cities there are three schools, in which 600 children are educated. These schools are conducted upon the Lancasterian plan somewhat modified. The university has been also reorganized upon a more liberal scale, and has about 100 students. The Lyceum or high-school, attached to the university, is in creating in the number of scholars, which amount to 150. Education is therefore advancing in these islands, and will no doubt continue to do so, in proportion as the people become more aware of the advantages which they are likely to derive from it.

Religion.—The religion of the people is the Roman Catholic, to which they are universally and strongly attached, and which they punctually observe in the observances of the rural parishioners. Their religion was secured to them at the cession of the island to the French republic, and again by the accession of the English generals who took possession of Malta, when the French were driven out of it. This promise has been scrupulously performed, and although the government has been Protestant for thirty-eight years, no religious denomination has been known to disturb the peace of society. The church festivals, which are very numerous, are always celebrated by public processions, which afford an opportunity to the people of all classes to make holiday; and the clergy, in their turn, are liberally rewarded for services in former days kept in strict seclusion, except when they went to church, on these occasions found recreation in the public promenades, for which such festivals served as a pretext. The observances of religion were therefore connected with many local customs, which clung to the government, and all are becoming more mixed together in the forms of modern society, these festivals and ceremonies are less thought of, and in fact are gradually diminishing in importance. Both parties observe a moderation and deference for each other's opinions, which is not, however, a favor to the government, which is the striking and almost solitary instance of a highly religious people, ruled by a government of a different creed, by whose tolerance all live in the greatest harmony.

The Roman Catholic clergy are very numerous, amounting, between regulars and seculars, to about 2,800, some of whom are eminent for learning. The landed property of the church is about one-fourth of the rental of the island, out of which the bishop enjoys an income limited to 3,000l. a year.

The principal places of worship are few and unassuming. The governor has his chapel in the palace of government; the naval departments have theirs in a building near the naval arsenal; there is a Sunday evening service in the house of the Church Missionary Society; and the Wesleyan chapel is in a private house. The number of Protestants in Malta is something under a thousand, not including the troops, whose religious service is performed by the military chaplains at their respective barracks. They have long desired to see a church erected for their use; this wish will speedily be realized, her majesty the queen-dowager having unostentatiously signified her intention, on her late visit to Malta, to erect a church at her sole expense for the public worship of the church of England. The site for this building in the city of Valletta is in the possession of the government.

Population.—The increase of the population of Malta after it came into the possession of the Knights of St. John was very rapid. It seems to have been the policy of that government to stimulate it by all the means in its power. Property is still held by the pensioners, which are charged with the payment of annual sums, in deference for the encouragement of marriages among the poorer people.

In 1530, when the Order took possession of the islands, the population amounted to 20,000. In 1565, according to Boisselier. 37,905
In 1632, according to Du Halde. 40,000
In 1791, according to St. Priest. 50,000
In 1798, according to Boisselier. 64,000
In 1803, according to Colquhoun, 'Wealth of the British Empire.' 118,154
In 1813, the number of the plague 102,000
In 1828, according to a census taken in that year. 128,000
In 1838, according to the last census. 128,000
similar to the municipal councils of Sicily, which originated in the reign of Frederick II. of the house of Hohenstaufen. This municipal council appears from its archives, which are still preserved at Malta, to have exercised considerable administrative, and even legislative powers, though its formation and constitution are quite obscure. 

In 1516, the Maltese islands, passed to the emperor Charles V., as heir to the crown of Aragon. On the 4th March, 1530, Charles granted to the grand-master and religious fraternity of St. John, who had recently been expelled from Rhodes by the Turks, the ownership of all the castles, fortresses, and islands of the island of Malta, with complete jurisdiction. The sovereignty of Malta was by this grant in effect surrendered to the Knights, though the form of tenure from the crown of Sicily was maintained by the reservation of the annual payment of a talon by the Knights to the Pope. The island of Gozo, which as a part of the cession Malta contained only about 12,000 and Gozo about 5000 inhabitants, who were in a miserable condition. Malta was almost a shelterless rock, and the cultivation of the land had been nearly abandoned, owing to the wretched state of the soil and the frequent predatory visits to which the people were exposed.

Under the Order Malta soon began to recover from its state of destitution. The first object was to protect the island against the raids of the Barbary pirates, and in this view the Knights commenced those works which remain to this day as a monument of their perseverance and military power. On the 18th May, 1565, the Turks, under Mustapha Pacha, to the number of 30,000 choice troops, landed on the island of Malta, which had been reduced to a state of desperation from the Knights. Finally, the Turks were compelled to quit the island, with the loss, it is said, of 25,000 men: the loss on the other side was computed at about 7000. Upon the death of Sultan Solyman in 1566, shortly after the defeat of his troops, the Grand Master of Valetta, who had successfully defended Malta against this formidable invasion, determined on the founding of a new city, in a favourable position for the protection of the island, and as a residence of the convent of the Order. He laid the foundation of Valletta, on the 28th of March, 1566. The Knights, now secure in their possession of Malta, continued to cruise against the Ottomans, whom they greatly annoyed. But the discipline of the Order relaxed as the objects of their original constitution gradually became of secondary importance; and Malta, which was safe against all attack, was a place of luxury and pleasure rather than of austerity.

The history of the island, between this time and its surrender to Bonaparte, requires no particular notice in this sketch. The death of Solyman was the event that caused the decline of power of the Order. The declaration of war by the Pope in 1800 was an event calculated to shake the declining power of an institution like that of the Knights of Malta, and the behaviour of the Order towards the new republic of France, their supposed partisans, their vessels, and the men of Malta, is mainly contributed to the downfall of the Order.

The immediate surrender of the island however was perhaps owing in part to the illiomanship of the Grand-master, as it certainly was in a great degree to the treachery of the French Knights, who, foreseeing the decline of the Order and the probability of Russian influence, preferred its surrender to France, whether that country should be a monarchy or a republic.

On the 9th June, 1798, a French expedition, under the command of Admiral Bruy, consisting of 18 frigates and 90 transports, having 40,000 men on board, arrived off the island. The French Knights had already been prepared for what was to take place: the Grand-master Ferdinand Hompesch, who had been elected in July, credited the insurrection, and offered to deprive the French Knights of the principal military commands. Most of the towers along the coast fell under their orders by a rule of service. Although much time was lost in concerting measures of defence, nothing was done: the frigates were not armed, and a few muskets and pistols were sent to the garrison; the ammunition was damaged and missent; troops were despatched to the coast without provisions; conflicting and impracticable orders were issued, and other similar apparent accidents happened. Baron Azopardi, in his "Journal of the Taking of Malta," states that the insurrection was in part to the influence of thousands of arms, but the military chiefs were satisfied with a semblance of precaution, and deluded the people with assurances of security. General Bonaparte, who was
on board the ship of the line Orient, lost no time in making a demand in writing that the whole fleet should be allowed to enter the ports of Malta to water, to which an answer was returned, with expressions of regret, that only two, or at most four ships, could be allowed to enter the port at a time; the French had not refused but were not allowed to return. A fearful mix-up followed, and this was considered by Bonaparte; "to-morrow at sunrise the army will disembark upon the coasts of the island wherever a landing can be effected:' and these words were inserted in the order of the day.

Accordingly, the next morning a body of French troops disembarked in St. George's Bay to the north-westward of Valletta, where one gun was fired from the tower for form's sake, and the batteries of St. Elmo and Fort Tigné opened a fire, which was ineffective from their position. The French fortifications were in a better state of defence than the British fortresses, which in the harbour of Marseisoccoro, to the south-east. Before night the French were in possession of the whole country, with the exception of five villages, or casals, without any opposition on the part of the British, and the several posts; and the unexpected attempts of the Maltese battalions of Nasciar, Muqta, Gargur, and Biricherran to defend their homes, only afforded to troops like the French a pretext for bloodshed and plunder. In the meantime the city of Valletta was in a state of turmoil and despair. The Grand master, in a state of the greatest perplexity, was surrounded by various advisers, but wanted firmness to decide. At length, when it was reported to him that some French knighth were killed, and others wounded, by the defenders of the fortress, he felt his usual resolution, and determined to solicit a suspension of arms. Two messengers were immediately sent on board the Orient to announce the readiness of the Grand master to come to terms; they were bearers of a letter from the Danish consul to the French general, instructing him in his favour and another from the Grand master himself to the commandant Dolomieu, a knight of the Order, who had openly attached himself to the French, and was on board the Orient, soliciting his good offices. In the afternoon General Junot and others brought an answer to the Grand master, and the same afternoon, forty-four hours after the capitulation was signed, he signed the capitulation and went on board the Orient to take his leave and join the French, and a second rate of ships, which had been arrived to disperse them, imprudently drew his sword. In a moment he was attacked, and the people being joined by others from the neighbouring casals, the irritation increased, and the officers and the inhabitants of the city burned his apparel and his body burned. This was the signal for a general revolt. In twenty-four hours the insurrection spread throughout both islands. On the 3rd, General Vaubon having learned what had taken place, attempted to send a number of men to disperse the insurrection, but they were beaten back by the Maltese peasants. On the same day the people of the villages near the fortifications of Cottonera entered the town of Bormla, and, being joined by the inhabitants, attacked the French garrison and destroyed all their property, and in a short time took possession of a magazine, and after a sharp contest bore away to the country eighty barrels of gunpowder.

The energy and daring which the Maltese thus early showed in their patriotic warfare surprised General Vaubon, who had been accustomed to consider them as wretches and peasants. From this moment the gates of Valletta and the three cities were closed, and the garrison was kept in a state of blockade for two years.

During this long period the Maltese gave proof of a patriotism surpassing which few people would have equalled. Uniformly in their object, all their measures were taken with prudence and care. They collected arms and established a system which gave method to all their operations, and their levy of men was efficacious in the battalions of battalions, and dispersed the French in a state of order as regular troops.

The attempts made by the French general at reconciliation were not listened to; his messengers were never allowed to enter the city, and each new effort was followed by a新的 attack. The French found in the port two line-of-battle ships, one frigate, and three galleys, besides two galiots, and some guard boats; and of ordnance 1300 pieces of artillery (about 800 of which were mounted on the works), together with an immense number of shot and shell.

The Order of Malta was now extinct. Homsippe embarked privately in a merchant-ship in the night of the 17th of June, accompanied by twelve knights. On his arrival at St. John he resigned his title of Grand master of the Order of St. John. General Bonaparte sailed with the French expedition two days afterwards for Egypt, and General Vaubon left with 4000 men to take care of Malta.

So soon the French were masters of Malta, the Gozo established laws based on the ancient legislation of France, and formed an entirely new government and municipality, administered by a commission. Liberty and equality were proclaimed, titles and ranks were abolished; it was decreed under penalty of death to strike any person on the head or body. A month before the French came to Govion, had been sent to France for education in the new principles, at their own expense; all the institutions were reorganized, and the remaining knights, with few exceptions, were obliged to leave the place. The riches of the church of St. John, and those of the Grand master, with all his properties, were seized by the state, and the plate of the hospitals, and of the Grand master's palace, were melted down to be sent to France. (Baron Asperdor; and Pieces Diverses relatives aux Opérations Militaires et Politiques du Général Bonaparte, Paris, an vu.)
With more than 8000 well-disciplined troops under his command (the soldiers and the crews of the vessels which escaped from Aboukir having been incorporated with them), he was unable to make a sortie in sufficient force to overawe his enemies; for the people of Valletta, encouraged by the movement of their countrymen, and borne down by the pressure of the blockade, the fruits of which, from a state of siege, were not to be left unwatched within the walls. The Maltese now made a warm appeal to the king of Sicily as their sovereign. They sought assistance from the British fleet, and sent out boats in all directions, some of which fell in with a vessel of Maitland's. The same Lord Nelson on his return from the battle of Aboukir; he sent the Portuguese squadron to their aid, his own ships being much disabled, and promised soon to follow. In fact on the 16th of September four Portuguese ships of the line and 80 vessels of war were sent to obtain the relief of the blockade of Valletta, and supplied the Maltese with some arms and artillery. On the 25th of October Lord Nelson himself appeared with fourteen ships of war, and demanded the French to surrender, offering to send them all to France, and not consider them as prisoners, which was immediately agreed to; General Vaubois returned a tacit refusal. The English admiral's force not being in a state to keep the sea, he was obliged to go to reft, and left the Portuguese admiral to maintain the blockade. So noble and encouraging was his reception, that the inhabitants were soon encouraged with powder and shot, now permitted them to receive corn from the granaries upon credit. Yet their great support was the reliance they had on the presence of the British navy. Captain Alexander John Ball, who commanded the squadron which was not long in appearance, and who had been signed for in the blockade of Valletta, was likewise ordered to supply as far as practicable the wants of the Maltese. This service could not have been entrusted to better hands. Captain Ball was a man whose dignified deportment and mild and affable character had won a place in the hearts of his countrymen; his sympathy and consideration too for the Maltese was a sentiment of the heart, not a cold act of duty.

In the beginning of 1799 the Maltese elected him their president, and of the council of state; the British, in conjunction with the English, a sum of money (about 3600l) was about this time received for the first time, and was afterwards followed by others, which although supplied in the name of the king of Naples, were really furnished from the English subsidies. Very soon after this Lord Nelson exchanged the thanks of the Maltese, that Malta would be protected by England, Russia, and Prussia until a general peace. All matters therefore seemed to be as well regulated as circumstances would admit, and the most ardent hopes were entertained that an end might be put to the sufferings of the Maltese, by the surrender of the French garrison, which was now strictly watched by land as well as by sea. But they had still much to contend against, and among other calamities disease, brought on by long suffering, and famine carried off many of the poorest classes, for whose relief no charitable fund existed; and it is stated that during the two years not less than 20,000 persons died of misery and famine. The expelled knights of the Order were not indifferent to what was going on in Malta; the balfet de Neve and some others attempted to land, offering their services to assist in reoccupying the island from the French, but they were rejected with indignity.

At the commencement of the siege the quantity of corn in the granaries of Valletta, and the three cities was 36,000 quarters, which it was calculated should sustain the inhabitants and the garrison about 16 or 17 months. The city was so closely blockaded by sea, there seldom being less than three or four ships of the line, and as many smaller vessels cruising off the port, that the only 15 small vessels with supplies besides the frigate Boudeuse, got into the port during the first twelve months; and the situation of the besieged, before scarcely four months had elapsed, was such, that Ranajat, treasurer of the Order, who has given us a very just account of the state of the city, says that the countenances of many bore marks of the privations which they were subjected. Famine stared them in the face, and many who were at first unwilling to leave their homes and properties, were afterwards persuaded, particularly as in July the garrison had been put upon half-pay, and the salaries of the authorities were suspended from the scarcity of money in the treasury. Still, trying as was their situation, the buoyant spirit of the French soldiers was not dismayed; they made every effort to procure provisions, and raised fruit and vegetables to ameliorate their situation. At this time a pound of fresh pork sold for 6s., salt meat 2s. 10d., the commonest fish 2s. 2d., a fowl 5s., a pigeon 10s., a pound of sugar 18s. 4d., coffee 21s. 6d., a gallon of water 2s. 8d.

The Maltese at first raised but few batteries, and those inconseivables. When however they were joined by the English and Portuguese, who furnished them with mortars and cannon and a great quantity of ammunition, they were erected others of much greater importance, in situations which kept the French garrison in constant apprehension. As we learn from Ranajat's Journal, they were assisted likewise by the marines landed from the blockading squadron. On the 20th of May Admiral General Graham (now Lord Lynedoch), arrived with the 30th and 89th British regiments and some artillerymen; these were joined by the 35th and 48th regiments under Major-General Pigot, who took the command in June, 1800. Two Sicilian regiments also came, joined by the 17th, and Commodore Fawcett in on the part of the English; and its principal conditions were, that the French troops should march out with the honour of war, as far as the sea-shore, where they should ground their arms, and then be embarked for Marseilles as prisoners of war. The occupation of the island by the French occupying forces, and the French troops taking possession of the forts and batteries of Valletta, amidst the acclamations of the people; they hoisted the English ensign at St. Elmo, and the British squadron entered the port. Two days afterwards the French troops sailed for France in English transports; and thus, after two years and two days, ended this protracted and memorable blockade.

At the peace of Amiens in 1802, the question of Malta was one of difficult adjustment. It was eventually settled between Great Britain and the French republic, that the island should be restored to the Knights of St. John, and be an independent state as formerly, but that there should be neither an English nor a French langue, and that a Maltese langue should be established, which should enjoy all the influence and privileges of the other languages.

In strict conformity with this treaty, Malta was to have
been evacuated by the British troops in three months after its ratification. But before the lapse of that period, circumstances had arisen which not only retarded the restoration of the island to the Knights of St. John, but rendered that measure inconsistent with the interests of Great Britain. So great was the anxiety felt by the British government, that the treaty of Amiens remained unexecuted, and Malta remained in the hands of the English. On the 18th of the same month George III. issued a declaration of the motives which obliged him again to take up arms in the service of the cause which followed, Malta was retained in military possession by Great Britain, without any formal declaration as to who was to be its future master. It became the head-quarters of the English navy in the Mediterranean, and the rendezvous of the British fleet, which found there the advantage from a central situation, and the convenience the ports of the island afforded for fitting out and keeping in an effective state the squadrons which held the dominion of the seas from Gibraltar to the Dardanelles. The war which broke out in 1813 was so active in traffic and bustle, that Sept. 1814, there died 4,858 persons in both islands. During the greater part of the war, Malta was defended by the powerful fleet stationed off the coast and by the powerful fleet stationed off the coast. The grass grew in the streets, and everybody was shut up as in a prison.

On the 30th of May, 1814, a definitive treaty of peace, concluded at Paris between France and the allied powers. It defined definitely the lot of Malta, by a great resolution of her union with Great Britain, with the concurrence of the king of Sicily, whose predecessors had for three centuries only exercised suzerainty over the island. Thus the Maltese people at length obtained the fulfillment of their ancient wish, subject of a sovereign of their own choice. It is only under a great maritime power that they can be secure from aggression.

But the island did not recover its late excess of prosperity. The peace, which carried blessings to all parts of Europe, opened the ports of the Continent to English commerce, which naturally neglected Malta and went thither direct. Malta besides was obliged to suffer a sort of penance inflicted upon her by the ports of France and Italy, when the time of great prosperity to Malta; it took about eight years after the cessation of the plague. It was not until June, 1826, that she was admitted to communicate freely with these commercial states; and by this time her principal commercial establishments were broken up. The exportation of a great part of her produce, and a large import of trade with Barbary and the Levant, were her only resources, and formed no approach to the florid state of prosperity she enjoyed soon after her first connection with Great Britain.

In the mean time her already excessive population was upon the increase, and the expenditure unduly large, and in 1832 the people began to petition his late majesty, William IV., for a consideration of their depressed condition, alleging certain grievances, which were then but cursorily considered or ineffectually remedied. In June, 1836, they held another appeal to the House of Commons, by a petition signed by 2,386 Malta, which was presented in that house by Mr. Kwart, on the 7th of June, 1836. The Malta in this appeal prayed for a municipal body, a reform of the law, a moderate reduction of the capital, an improvement of the system of education and elementary instruction, an independent board of health, a free port, a relief from the heavy excise duty on wine, a participation in the emoluments of office, a relief from the heavy duty on grain, and a popular council for the election of representatives. The petitions were sent out in September, 1836, to examine and report upon the grievances set forth, and from their labours the most useful reforms are anticipated. Some indeed are already in operation, such as the complete freedom of the ports of Malta for all foreign merchandise, the duties remaining only on articles of consumption; the reform of the government departments, and the distribution of the higher offices more equally among the Maltese, which were formerly held almost exclusively by Englishmen through patronage; a reconstruction of the university, and the introduction of elementary education amongst the lower orders; and last, not least, the full liberty of printing and publishing, which have been the chief cause of the present disturbances. What promises however to be of the greatest benefit to Malta is the development of steam navigation in the Mediterranean, and the increase of the passage of vessels from the coasts of France and Italy to the Levant, which all meet at Malta as the most advantageous point of rendezvous, and to provide themselves with coal, but from the increasing importance of the communication between England and the Eastern Mediterranean. Travellers of all nations are to be seen in the streets of Valetta, and there, where a few years ago every face was familiar, one now walks amongst strangers as in continental cities. This influence of persons has led to the establishment of the lazaret and the hospital, and in the lazaret have stamped Malta as the most important quarantine station in the Mediterranean, and that which is most resorted to by travellers of all countries.

MALTA, KNIGHTS OF, a celebrated military and religious order, founded in 1309 under the name of Knights of St. John of Jerusalem, Knights Hospitalers, and Knights of Rhodes. The institution of the Order originated in an hospice which was founded at Jerusalem, by permission of the caliphs of Egypt, about the middle of the eleventh century, when the Church received the criminal lepers by the powerful holy sepulchre. The hospice was annexed to a chapel dedicated to St. John the Almoner, and was at first kept by Benedictine monks. When Palestine was conquered by the Seljuk Turks, in 1065, who drove the Crusaders from the island, the Hospitallers found these new masters much worse than the former, and the hospice of St. John was plundered. Some time after a Frenchman named Gérard, a pilgrim to the holy city, undertook the management of the hospice; and when he returned to Jerusalem in 1699, found Gérard, who had been kept in prison by the Mussulmans during the siege as a suspected person. Gérard resumed his duties in the hospice, and several of the crusaders, through piteous desire of doing what they could to devote the rest of their lives to the service of the poor pilgrims. Among the knights who took this determination were Raymon Dupuy and Dudon de Compt, both from Dauphiné, and Conon de Montaigne, from Anvers. Gérard in 1699, when the hospice was again in possession of the Montmore de Brabant to the hospice of St. John, and several other princes followed his example. The hospice thus became possessed of lands in almost every part of Europe, as well as in Palestine. The dress assumed by the order was a white tunic and hood, a cap of black cloth, eight points or arms on the left breast. Pope Paschal II. sanctioned the new institution, the members of which bound themselves by solemn vows of chastity, individual poverty, and obedience, to which was afterwards added the vow of being always ready to go against the tyrants and others who forsake the true religion. Vertot, at the end of his 'History,' gives all the laws and regulations of the Order: 'Anciens et nouveaux Statuts de l'Ordre de St. Jean de Jerusalem.' The hospice exempted them from military service, and those who were a part of their own superior, who was styled grand-master. They were independent of every other ecclesiastical or lay jurisdiction. A splendid church was raised by Gérard near the old hospice, and dedicated to John the Baptist, with extensive buildings the hospital as well as the hospice were there entertained at free cost. Gerard and his successors established, in various maritime towns of Europe, hospices in imitation of that of Jerusalem, which served as resting-places for the pilgrims, who were there provided with the necessaries of life. These hospices were called commanderies. Such were those of Massa, Taranto, Seville in Spain, and St. Giles in Provence.

Gérard dying in 1118, the Hospitallers elected as his successor brother Raymond Dupuy, who drew up a body of statutes for the hospital, which was published in 1129, and was known as the statutes of the Order. He freed the duties of charity and hospitality that of taking up arms for the protection of the holy sanctuary. He divided the brethren into three classes, the military, the priests and chaplains, and the 'serving brothers,' who
were neither soldiers nor priests. As the Order increased rapidly in numbers, the members were classed into seven nations, called 'languages,' namely, Provence, Auvergne, France, Italy, Aragon, Germany, and England. For nearly two centuries the Hospitaliers, together with the Templars, were the firmest supports of the Christians in the East; and when Acre, the last bulwark of Christendom, was taken by the Mussulmans in 1291, the remains of the Order withdrew to Cyprus, where the town of Limioso was assigned to the Hospitaliers as their residence.

In 1565 the Hospitaliers, having lost all hope of recovering Palestine, equipped a fleet, and, being joined by crusaders from Italy, landed, under their grand-master Foulques de Villaret, on the island of Rhodes, which was then possessed by Greek and Saracen pirates. The Hospitaliers defeated and destroyed these pirates, so that the town of Rhodes, as well as of Cos and other neighbouring islands, was given to the Hospitaliers. From that time they became known as the Knights of Rhodes. The knights strongly fortified the town of Rhodes, from which they carried on by sea a deadly warfare against the Mussulmans, and especially against the Ottoman Turks, who about that time were establishing their power all over Asia Minor. The history of the Knights of Rhodes, during the fourteenth and fifteenth centuries, is closely connected with that of the Ottomans. Some of the Turkish sultans, among others Murad, and Omer II., were glad to purchase a temporary peace from the knights. Mahomed II., son of Murad, having taken Constantinople, sent a fleet with an army to conquer Rhodes in 1480; but the Turks, after the loss of Crete, in the East, were too weak to make head against the Knights. In 1522, Sultan Solymann the Great sent another large armament against Rhodes, and he himself repaired thither to direct the siege. Villiers de l'Isle Adam, who was the grand-master of the Order, defended the town with utmost bravery; but there was a traitor among them, one D'Amiral, a Portuguese knight, who, through jealousy and disappointment at not being made grand-master, kept a correspondence with Solymann, and informed him of the state of the garrison and the weak points of the fortifications. D'Amiral was killed in the battle, but the town was not captured. In December of that year the grand-master, having exhausted all his means of resistance, capitulated. Solymann behaved honourably: he allowed the knights, and all the inhabitants who chose to leave Rhodes, twelve days to embark. Having the desire to see the grand-master, he gave him words of consolation, and, touched by his venerable appearance, said to his visier, that he could not help being grieved that Christian in his old age out of his house. On the 1st of January 1523, the grand-master and the surviving knights left Rhodes and took refuge in Italy.

In 1530 Charles V. gave to the Order the islands of Malta and Gozo. [MALTA]

After the surrender of Malta to the French, in 1798, the Order as a sovereign body became extinct, and its domains in various parts of Europe were confiscated. It still however exists as a religious order, a phantom of its former greatness. Ferrara in the Papal State is at present the residence of the grand-master and a few knights of the Order of St. John of Jerusalem, who subsist upon a very scanty remnant of their ancient splendid revenues. Circumstances have so much altered in Europe, the Levant, and Africa, that the Knights of Malta as a sovereign military order would no longer be useful, with the actual state of civilisation. The objects of their institution have long ceased to exist. They were however for some centuries, together with Venice, the strongest bulwarks of Italy and western Europe against the barbarian power of the Ottomans.

Gosse, Histoire des Chevaliers Hospitaliers de St. Jean de Jerusalem.)

MALTA, a bituminous mineral, of which several different accounts are given by various authors, that it is impossible to determine to what substance the name properly belongs. The proofs for and against this conclusion are equally strong; and it is only necessary to consult Phillips (Mineralogy, p. 369), that it is blackish-brown; while according to Dr. Thomson (Inorganic Chemistry, vol. ii., p. 369), it is white.

MALTHUS. [POPULATION.]

MALTHUS. [POPULATION.]

MALVUS. [SYLVIADE.]

MALVA Sylvestris (Wild Mallow), an indigenous, perennial, herbaceous plant, of very frequent occurrence, possessed in every part of mucilaginous properties, and which may be employed for the same ends as other demulcent herbs. The flowers only are official in Britain: when fresh, they are violet-coloured, but by drying become blue, and also lose a large quantity of their watery constituents, for 100 parts of recent flowers dry into 11. They have no colour, but a mucilaginous herbeceous taste. They yield their colouring principle both to water and alcohol. The alcoholic tincture furnishes one of the most delicate of re-agents for the testing the presence of acids or alkalies. The compound decoction of the London Pharmacopoeia is not a proper form of exhibition, an infusion with cold water being preferable. [DECOCTIONS; INFUSIONS.]

MALVA'CE/B are a large natural order of exogenous plants, the distinguishing marks of which are polysepalous flowers, monadelphous stamens, unilocular anthers, and a salivate calyx. They also have alternate leaves, the hairy

Gossypium triiplicifolium, a section of a corolla, with adhering monadelphous stamens, cotton so important to our manufacturers. Malva tripli

plicata is used by the negroes in the West Indies as a substitute for soap. The seeds of Hibiscus abelmoschus are warm and mucous, and are employed in perfumery as a substitute for musk; those of Hibiscus esculentus form the ochra, so much used in hot countries as a mucilaginous li-
gradient in soups. A few species are acid, especially Hibiscus sabdariffa. Finally the tenacious fibres procured from the inner bark of many kinds of Malaceous plants form a good description of cordage. Hibiscus elatus and tilacous, and several kinds of Sida, are principally used for this purpose.

The only modern systematic account of the genera and species of the order is to be found in the first volume of De Candolle's 'Prodromus'; but the genera have since constructed upon principles so much more precise, and the number of species known has so considerably increased, that this enumeration is of little use at present. There is a good account of Indian species in Wright and Arnott's 'Prodromus Florum Peninsulae Indiae Orientalis'; of Brazilian species in Auguste de St. Hilairo 'Flora Brasiliensis', and of African kinds in the various volumes of the 'Linnea.' A few African species are also to be found in Guillenin and Perrotte's 'Flora Congomabim,' vol. 1.

MALWA. [HINDIusted. p. 212.]

MAMELUK, or MEMMLOOK, a name derived from an Arabic word signifying slaves, was that of a military body which for a long time ruled Egypt. The Memmlooks revolted in the 13th century by Malek Suleich, grandson of Sadejed, which Sadejed was the brother of the famous Salah Edeeen, the Koord, the founder of the Eyoob dynasty of the sultans of Egypt, which succeeded the Fatamides. Malek Suleich put down a state of affairs among the slaves of which the most deplorable was that the heads and limbs of the slaves of Asia were then gutted in consequence of the devastating wars of Gengis Khan. He chose chiefly young natives of the Caucaesian regions, whom he trained to military exercises, and embodied into a corps of 12,000 men called Memmlooks, by their discipline and distinct corps, was more formidable to its masters. In 1254 the Memmlooks revolted and killed Tooran Shah, the last prince of the Eyoob dynasty, and raised to the throne of Egypt Elf Mahmon, who we Memmlook. In 1261 by another Memmlook called Baybers, who founded the dynasty of the Barbeats, which conquered Syria, took Damascus, and put an end to the domination of the Abba-side calipha. In 1392 Doulet el Memmlook el Borghe, a Circassian and a grandson of the founder of the dynasty of the Circassian Memmlooks, who, after losing his possessions by the end of the Ottoman rule, took the cities of Tabaristan, Persia, and to death Tomaan Bey, the last of the Circassian dynasty. Selim however maintained or was obliged to maintain the Memmlooks as a military aristocracy in Egypt. The Beys of the Memmlooks, twenty-four in number, continued to be the governors of all the districts, though with their patronage in foreign appointments the Memmlooks elected the Bey and appointed the Porte, who resided at Cairo. The bays were elected by their own body. [EGYPT, Modern History of]

This aristocracy continued to rule almost independent of the Porte till Bonaparte's invasion, when the bulk of Memmlook cavalry was destroyed in several brilliant but useless charges upon the French squares supported by artillery, at the battle of the Pyramids, in July, 1798. [Bona-parte.] The remains of this once splendid body with their beys retired into Upper Egypt. After the English and the Turks had conquered Egypt in 1801, the Porte was no longer inclined to allow the Memmlooks to retain their former authority, and the captain Pacha treacherously murdered several of the beys whom he had invited to a conference (July, 1805), Memmlook. In the ensuing confusion of Egypt by a similar contrivance, destroyed nearly all the remainder of them in the citadel of Cairo. A few escaped into Dongola, but the victorious troops of the Pacha pursued them, and they are now extinct as a body. The Memmlooks were reduced by the Caucacean soldiery, which was not hereditary, but elective among them. Their morals were very depraved: they were rapacious and merciless, and their extinction has been rather an advantage than a loss to humanity.

MAMALIA. [SARTHE.

MAMMALIA, MAMMALS, a term employed by Linnaeus to designate those animals which suckle their young, and which, in our opinion, is far preferable to the term Mammorines generally used by the French zoologists. Mammals are vertebrated animals whose blood is red and warm, and whose system of circulation is double; whose fetus, in most species, is nourished in utero by means of a placenta; whose young, when born at the proper period, give signs of life at their birth, and are, in a state of nourishment. In the former, blood vessels of the mother's system are extended to the embryo, whilst in the mother, till they are old enough to procure their food, or have it supplied from other sources.

Linnaeus, who makes the Mammalia the first class of the Animal Kingdom, gives the following definition:—Heart with two ventricles and two arteries; blood vessels of the mother's system are extended to the embryo; young are born in the form of a fetus, which is nourished in utero by means of a placenta; whose young, when born at the proper period, give signs of life at their birth, and are, in a state of nourishment, fed with milk secreted by the mother, till they are old enough to procure their food, or have it supplied from other sources.

This class Mammalia divides into orders, principally resting on the basis of dentition. Its name for the molar teeth is : for the canine or cuspidate teeth, incisors; for the back or grinding teeth, molares.

The orders, which are six in number, are comprised in three sections, depending on the nature of the teeth:—

1. The Ungulata, containing the orders Brusa, Glere, and Antilocapra.
2. The Ungulata, containing the orders Bovida, and Pecora.
3. The Mucosa, containing the order Cetacea (Whales) only.

The Primates consist of the genera Homo, Saim, Lemur, and Prosimii.

The Brachiates include the genera Elephas, Trichechus, Bradypus, Myrmecophaga, Manis, and Dasyurus.

The Ferae are arranged in the genera Puma, Canis, Felis, Viveria, Mustela, Ursus, Delphinus, Tapir, Sorex, and Erinaceus.

The Glires embrace the genera Hystric, Lepus, Castor, Mus, Scirpus, and Noctuiores.

The Pecora comprehend the genera Camelus, Muscerus, Capra, Ovis, Bos.

The Insectivora, which includes the genera Equus, Hippopotamus, Sus, and Rhinoceros.

And 7. Under the order Cetace are arranged the genera Monodon, Balaena, Physeter, and Delphinus.

For the history of the science relating to the arrangement of the Mammalia generally, that is by order of the article Mammalogy; and for the natural history and organisation of the beings which form the class, that is by order of the article Mammalogy; and for the natural history and organisation of the beings which form the class, and of the animals Man, Mammalia, Glere, Bovida, and Pecora, as well as the several titles referable to the order, reference should be made to the article Mammalogy.

MAMMAL'OLOGY, a hybrid word, the roots being derived from the Latin and the Greek. Accordingly M. de Cremeaux has proposed the term Mastology, and M. de Blainville the term Masticology, as being entirely of Greek origin, and more properly expressing the natural nature of the class. As the word is the term Mammalogy is in such general use by the zoologists of England and France, that it seems less objectionable to retain it, with all its faults, than to attempt to supersede it by another word, which, though more correct, would be comparatively very little known.

Mammalogy then is the science which has for its object the study and classification of animals with mammary glands, that is to say, Man, and quadrupeds properly so called, including the order Carnivora.

The objects of this science are numerically much more numerous than those which constitute the other classes of animals: beings; their bulk, as compared with that of the others, is comparatively a zero; and their structure is more readily laid open by the knife of the anatomist than by any other instrument, whether the difference is more strongly marked. Their habits are determined by the class in which they are placed, and by the classification of the class by which they are referred in the Mammalogy.

To a certain extent the knowledge of mammals and their nominal distinctions, as regards their habits and economy, we determine not only the aspect of the class, but the structure of the class, and the characteristics of the class.
Aristotle, we find that the science had not proceeded further than a knowledge of the external and internal structure of these animals, without any attempt at a systematic arrangement of them. If we descend lower, we find the science in the same state, whether we consult the works of Pliny, or the other historians who wrote on natural history.

Conrad Gesner, though he treated of the Mammalia alphabetically in his "History of Quadrupeds" (1551), finally divided them into groups, such as Monkeys, Horses, Deer, Oxen, &c., as indeed he did with regard to the oviparous quadrupeds, which he termed Vertebrata. Aldrovandus, Jonston, and the rest of that class of mammalogists, seem to have followed Gesner as closely as the ancient writers followed Aristotle.

Rudolf A. Leuckart was the first of our countrymen to divide the Mammalia into two great classes, the Ungulata, or Hoofed animals, and the Unguiculata, or animals with nails or claws.

The Ungulata class are divided into three orders: 1. The Suidae, as the ox or sheep; and 2. Equidae, which have the feet divided into more than two parts, as the elephant.

The animals with a divided hoof are again subdivided into two groups, in order to give the class Mammalia its scientific name, "Vertebrata": 1. The Unguiculata, which last consist of four genera, Sheep, Goats, Stags, and Deer.

Those of the Unguiculata Mammals which have the nails sharp and resembling those of man, such as the Ape or Monkey, the Horse, and others, are also divided into two orders: 1. The Vertebrata: 2. The Ungulata.

Gmelin gave the world the name of this class in 1788. It is not passing a severe judgment to characterize it as a jumble of all that had previously contributed to this department of zoology, and a farago of species heaped together, without care, and in many instances without inquiry. The student whose lot it may be to follow and to dissect the method of the Mammals with this in mind, is under no obligation to merely state the names of the Mammals in the order in which he finds them, or to set to work upon the names and references which swell out the "Systema Naturae" from the neot proportions which grace it when it is left in the hands of Linnaeus, to the undigested and overlaid mass of a Linnaeus or Gmelin.

Previously to this visitation, a work of a very different character had made its appearance. In 1780 Professor Storr published his "Prodromus," which gave a direction of the names of those classes of the Mammalia still in a great measure folio. He divided the Mammalia into three Phalanges: the first consisting of those Mammals which have feet proper for walking; the second, of those whose feet are fin-shaped, but with distinct toes; and the third, of those which have true fins without any ungual toes. These phalanges are separated into cohorts, orders, tribes, sections, and genera; and the system is well worthy the deep attention of the reader.

Boddart (1785), in his "Elencus Animalium," divided the Mammalia into the six orders: I. The Aquatic; II. The Terrestrial; III. The Quadruped; IV. The Unguiculata; V. The Ungulata; VI. The Mammals (Gires).

IV. The Ruminants. V. Ungulata not ruminants (Hog, Horse, Tapir, Rhinoceros, and Elephant).

In the 2nd group (Aquaticus) were arranged the Hippopotamus, Beaver, Otter, Walrus, the Seals and Dugongs, and the Manatee. Not to detain the reader with the Anatomical System of M. Vieçq-d'Azyr, which broke up the Mammalia into fifteen classes and thirty-eight genera, and was followed by the natural system of Borel, who separated the Mammalia into nine orders. I. B. (Man). II. Quadrupoda (Apes, Monkeys, and Macaques). III. Chiroptera (Bats). IV. Hippopotamus (Horse and Man). V. Camelidae (Camels). VI. C. (Ruminants). VII. Mammalia (Hog, Tapir, Elephant, Rhinoceros, &c.). VIII. Palmipedes (Elephant and Manatees). IX. Cetacea (Whales).

In 1778 Cuvier published his Elementary Table of Animals, which was afterwards further developed in his "Comparative Anatomy of the Vertebrates." Cuvier realized that this great zoologist bears considerable resemblance in some of its parts to the "Prodromus" of Storr; and as Cuvier himself remarks: it is so generally adopted that we shall presently give it in detail.

M. Desmarest (1804) published his "Dictionnaire d'Histoire Naturelle," principally taking Cuvier and Storr for his guides, divided the Mammalia into three great sections. I. The Unguiculata Mammalia. II. The Hoofed Mammalia (Mammiferas a sabota). III. The Eared Mammalia (Mammiferas a nageoiras), containing the orders Amphibia, Seals, Walruses, Dugongs, &c., and Cetacea (Whales). Our limits will not permit us to enter at length into the classification of M. Desmarest, which should however be carefully perused by the student.

We now proceed to lay before the reader Cuvier's arrangement after it had received the benefit of the joint labours of M. Geoffroy and himself, and as it finally left his hands in his last edition of the "Règne Animal."

Class Mammiferæ.

Storr). Glutus (Gulo, Storr). Ratels. Tribe 2. Digi-
tigrines is composed of the Hymenina (Hymen, Storr), and the Cats (Felis, Linn.), in which last the sanguinary development is at its height. Tribe 3. The Seals (Phoca, Linn.). The Walruses (Trichechus, Linn.).

Order IV. Marsupialia. Subdivision 1. Opossums (Di-
delphis, Linn., including Chiroonectes, Illiger, and Thyla-
ing the Phalangers (Balantia, Illiger) and the flying Phalangers (Petarua, Shaw; Phalangista, Illiger). Subdivision 3. The Potoroos, or Kangaroo Rats (Hypoxy-
rurus, Illiger). The Kangaroos (Macropus, Shaw; Halma-
theres, Illiger). The Koalas (Phascolarctos, Blainv.); Phascol-
aretos, Blainv.); and Phascolomys (Geoffroy).

Order V. Rodentia. The Squirrels (Sciurus, Linn., in-
cluding Tamia? Illiger; Pteromys and Chremomys, Cuvier).
The Rats (Mus, Linn., including Arctomys, Gmelin; Echymus, Illiger; Echymus, Geoffroy; Loncheres, Illiger; Hydromys, Geoffroy; Capromys, Desmarest. The Rats properly so called, Mus, Cuv. The Jerboas, Gerbillus, Desmarest; Meriones, Illiger; Meriones, F. Cuvier; Meriones, Cuvier; Meriones, Cuvier; and Arvicanthis). The Onychomys, Laepecte. The Ondatras, Fisher, Cuv. The Field Rats and Mice, Arvicolina, Cuv. Hyopus, Illiger. The Lem-
ings, Georychus, Illiger; Otomy, Cuv. The Jerboas, Dipus, Gmelin; Holomys, Cuv. Pedetes, Illiger; Spalax, Geoffroy. The Ictidomyinae, Illiger. The Hapalemys, Pygosoma, Say; Anomys, Lichtenstein; Diplomystes, Rahnsebe. The Beavers (Castor, Linn.). Myopot-
amus, Cuvier. The Porcupines (Hystric, Linn., in-
cluding the Ursines, Ereisons of F. Cuv., and the Cono-
oids, Syntheseus of F. Cuv.), The Hares (Lepus, Linn., in-
cluding Lagomys, Cuvier). The Capybara, Hydrochoerus, Erxleben. The Guinea Pigs (Anana, F. Cuv., Cavia, Illiger, including Keradon, F. Cuv.). The Agoutis (Chiro-
romys, F. Cuv., Dasypus, Illiger). The Pacos (Catio-
genys, F. Cuv., C. Lichtenstein.

Order VI. Edentata. Tribe 1. Tardigrades. The Sloths* (Bradypus, Linn., including Acheus, F. Cuv.). Tribe 2. Ordinary Edentata. The Armadillos (Dasypus, Linn., in-
cluding the subgenus, Chlamyphorus, Illiger; Aard-vark (Oryctes, Geoffroy) The Ant-Eaters (Myrmecopha-
ghus, Linn.). The Pangolins (Manis, Linn.). Tribe 3. The Monotremes. The Echidna, Cuv. (Tryg-
glossus, Illiger), and the Ornithorhynchus, Blumen. (Platy-
therium, Cuv.);

Order VII. Pachydermata. Family 1. Proboscisians.

Elephants (Elephas, Linn., and Mastodont (* Mastodon, Storr). Family 2. Ordinary Pachydermata. Hippopot-
mus (Linn.). The Hogs (Sus, Linn., including Phasc-

Order VIII. Rumiantia (Peora, Linn.). No Horsa. The Camels (Cameles, Linn., including the Llamas, Auchenia, Illiger). The Musk (Moschus, Linn.). ** True Horsa sheds periodically. The Stags or Deer (Cervus, Linn.). The Hammers (Stenoceros, Cuvier). The Giraffe (Camelopar-
dalis, Linn.). The Damans (Hyrax, Hermann). The Sheep (Ovis, Linn.). The Oxen (Bos, Linn.).

pède. The Narwhals (Monodon, Linn.). The Cacha-
\footnote{It is here that Cuvier mentions the extinct genera Megatherium and Me-
glodon, whose remains, containing that the former, though it is now very slow, is very slow, and the latter, as to the rest of the skeleton, as to the skin, to the fur, and to the ant-cores.}

Order I. Primates (Linn.).

* Anthropomorphous.

cephalus and Papio).
**Quadrupeledoi.**


Order II. Fera (Linn.).

* Cutting-teeth six above and below; grinders of three sorts.


* Cutting-teeth various (rarely six above and below); grinders of two sorts, flat and tubercular.


* Talpina (Talpina).


* Teeth not of three sorts, or not forming a continuous series.

Order III. Cete (Linn.).

* Skin smooth without any hair or whiskers.


Fam. 2. Delphinidae. Subfam. 1. Delphinina (Delphinus, Delphinorhynchus). 2. Phoecina (Phocea, &c.).

* Skin rather hairy; whiskers distinct; grinders flat-topped.

Fam. 3. Trichecheidae. Trichecheus.

Fam. 4. Manidae. Manatus.

Fam. 5. Halicoridae. Halicora, Stellerus.

Order IV. Glires (Linn.).

* Fur with scattered larger hairs or spines; tail plump or scaly.


Fam. 2. Hystidruida. Hystrix, &c.

* Skin equally soft; tail none or hairy.


Order V. Ungulata (Linn.). Bruta, Perciva, Borellus (Linn.).

* Two middle toes large, equal; bones of the metacarpus and metatarsus united.

Fam. 1. Bowidea. (Horns persistent.) Subfam. 1. Bovina

(Bos, Ovis, Capra, Antilopea, Antilope, Cattobola).


Fam. 2. Equidae. Equus (Linn.). Asinus (Gray).

* Toes three, four, or five to each foot, nearly equal; teeth nearly in one series.


Fam. 5. Bradypridae. Bradyus, Cholepus, Megatheri- um, Megalonyx.

Mr. Gray then exhibits the manner in which the orders appear to be connected together, and the 'Typical' and 'Annotent Grapous' of each order.

Mr. Swainson, who does not admit Man into the zoological circle in his 'Natural History and Classification of Quadrupeds' (1836), has formed the third part of his book an arrangement of 'The Class Mammals, according to its natural affinities.' He makes the Quadrup- mâna, the first order, consist of the following families:—


The fifth order, Glires, consists of—division 1. Glires proper, with clavicles. Div. 2. Clavicles rudimentary or none.

Immediately following the genus Cavia and its subgenus we find the 'Marsupial Rodentia. Situation uncertain,' and next to them the family 'Marsupiidae' (Herbivorous Marsupials), formed of the genera Halmaturus, Hyphiprym- nus, and Phalangista, the latter with two subgenera, Pe- taurista and Peractus.

We must refer the reader to Mr. Swainson's book for an explanation of the peculiar views of classification, affinity, and analogy developed in it.

We can only allude to the works of Pallas, Allamand, Schreber, Shaw, Marcgrave, Catesby, Hernandez, D'Azara, Sonnerat, Steller, Sprent, Le Vaillant, Bruce, Barrow, Burchell, Humboldt, Peron, Leesueur, Fischer, Lescot, Kiéppl, Smith, Bennett, Bell, Owen, Ogilby, Sykes, Darwin, and a host of others, who have enriched the subject by their writings or the observations which they have made in their travels.

MAMMARY GLAND is an organ of considerable interest from its occurring only in the females of those animals of the class of mammals (Mamalia), and whose greatest peculiarity is that, while young, their food is the milk secreted by the mammary gland of their mother.

The number of mammary glands varies in different animals. In most they are called mammae, and which are always situated on the surface of a nipple or test by a very minute orifice. In some animals, as ruminants, there is but one orifice at the extremity of each nipple; in others, and in man, there are several. Each orifice leads into a fine canal, which, after it has dilated, and ramifies with irregular and torted branches in the substance of the breast orudder.

Each branch has either a simple closed extremity or terminates in a minute cellula, and numerous capillary blood-vessels ramify on their walls and secrete the milk into these cells. The weight of the entire mass of the gland is the product of the quantity of milk produced; it is increased by the puerperal fever, and further increased by the act of sucking, produces a partial vacuum over the nipple, the weight of the surrounding medium presses lightly and equally upon the surface of the breast or udder, and propels the milk from the ducts in minute and gentle streams.

The number of mammary glands is several. The quantity of milk and its proportion to the body depends upon the age of the animal, the sex, and the size of the mammary gland. The quantity of milk increases and becomes more thick and rich, combining in itself all the best principles for the nourishment of the young animal. It continues to flow for a length of time proportioned to the age at which the young animal seeks its own food, and then gradually subsiding, the gland decreases to the same size which it had before pregnancy.

In women the mammary gland is subject to many and severe diseases; as abscess, cancer, and various tumours; but the conversion of its secretions into another form of articled.

In males of all species only a rudiment of this organ is found; yet there are not wanting instances in which milk has been secreted from the breasts of men and other male animals. (Blumenbach)

MAMMEE is the genus of the natural family of Guttiferae, so-called from the American name Mammy of America, or the American Mammee-tree, which is the only species of this genus, and forms a handsome tree with a spreading crown, and flowers compared with a Magnolia. The flowers are odoriferous and employed as a medicine in addition to liqueurs called Eau and Crème des Cerises in some of the West India Islands. The fruit is large and has a double rind, in which the outer is thick and leathery; the inner one is thin and brittle; the pulpy substance of the pulp closely adhering to it, which is of a yellow-orange colour, whence it is sometimes called abricot de Saint Domingue. This pulp has a pleasant but peculiar taste with an aromatic smell; it may be eaten raw, or cut in slices with wine or sugar; or cooked, which gives a jelly-like discolourment. It is also preserved in wine sweetened with sugar, or in brandy. (Labat.) The fruit is considered nourishing and pectoral, and much esteemed in America. Attempts have been made to naturalize it in this country. According to Sweet, it grows freely in sandy loam; and its cuttings, with the leaves not shortened, root in sand under a half-glass in heat.

MAMMILLARIA. Pronounces this name instead of yealmal, for a genus of fossil zeophyta, analogous to Aleyonum.

MAMMOTH, a term employed to designate the fossil elephants. The name has been erroneously applied sometimes to Elephas (Gray, vol. ii. p. 352.)

MAMUN, ABUL ABBAS ABDALLAH, the seventh Abbaside caliph, was born at Bagdad, A.D. 786. He was entrusted, during the life of his father, the celebrated Harun al Rashid, with the government of Khorasun; but on the death of his father, A.D. 809, and the accession of his brother Amin, Mamun was deprived of the government and commanded to repair to Bagdad. But such as a step would doubtless have been followed by his death, Mamun disobeyed the orders of the caliph, and proclaimed war against him. The contest was carried on till 813; when Bagdad was taken by Thaher and Harthevah, the general to Mamun, and Amin put to death by them.

The early part of Mamun's reign was greatly disturbed by the pretensions of the descendants of Ali, the cousin of Mohammed. [Ali.] Mamun, in order to restore peace to his empire, named one of the princes of the house of Ali as his successor, and was distinguished by the Abbasides, should be discontinued at the court, and replaced by the green, which was worn by the descendants of the prophet. This step however occasioned a revolution in the government; the Abbasides rose against Mamun, who was overcome and put to death by Harthevah, himself named by the caliphs of the line of Mahadi. After the end of two years, Mamun obtained the caliphate again, and, taught by experience, restored the black colour of the Abbasides and named his brother as has successor. The partisans of the Ables again rebelled against Mamun, but were unable to obtain any advantages over him. In addition to these wars, Mamun was also engaged, during part of his reign, by the revolt of the son of Harthevah in Armenia, and by that of Thaher in Persia.

In 836 Mamun engaged in a war with Thapholas, the emperor of Persia, and was driven by this from the refusal of the emperor to allow Leon, a celebrated teacher at Constantinople, to repair to Bagdad, whether he had been invited by the caliph. The war was carried on principally in Cilicia, during three successive campaigns; and finished by the capture of Thebes, in 833, and was succeeded by his brother Mota men.

Although the reign of Mamun was disturbed by so many wars and intestine commotions, yet science and literature advanced in this part of the world, and some of the most excellent works in the field of algebra were translated into Arabic by his command; and among other works written during this time, we may mention the 'Elementary Treatise on Algebra,' by Mohammed ibn Musa, which was published with a translation by the late Mamun, and was unable to obtain any advantages over him. In addition to these wars, Mamun was also engaged, during part of his reign, by the revolt of the son of Harthevah in Armenia, and by that of Thaher in Persia.

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more oblique. Thus, if a line be drawn in the median plane along the base of a human skull, the foramen magnum and occipital condyles will be found immediately behind the point at which that line is bisected; while in the chimpanzee (in which also the condyles are proportionally smaller) the saccus for nothilum is separated from the foramen magnum by a line similarly drawn, and in other animals are still farther back. Hence there is in all animals a greater proportion of the weight of the head in front of the vertebral column than there is in man; and all the parts anterior to the condyles are proportionately shorter and deeper than in other mammals, in which the jaws, the bony palate, the basilar part of the occipital bone, and the petrous portions of the temporal, are always long and large.

Besides being placed so far back the centre of gravity of the vertebral column it is directed more obliquely downwards than those of man; so that, if the head were supported on the top of a vertical column, its weight (even if it fell entirely upon the condyles) would press on an inclined plane, and constantly tend to carry the head downward and forward. The degree of obliquity in the direction of the condyles varies in different animals. It may be nearly estimated by the angle formed by two lines, one of which is drawn in the plane of the occipital foramen, and the other from its posterior edge to the posterior margin of the orbit. This angle is about 3° in the case of 37° in the orang-outan; but in the horse it is 90°, the plane of the foramen being vertical. If therefore the natural posture of man were horizontal, he would in this respect be circum- stanced as if unable to rest on his knees, with the animal's back neither in the skeleton nor in the muscular system of man any adequate provision. In other mammals the head is maintained in such a position by a strong and thick ligament (the ligamentum nuchae), which passes from the spine of the scapula to the occipital bone, and is the permanent part of the occiput, but of which in man there is little or no trace. In the horizontal position therefore he would have the heaviest head, with the least power of supporting it.

The position of the face immediately beneath the brain, so that its front is nearly in the same plane as the forehead, is peculiarly characteristic of man; for the crania of the chimpanzee and orang, which approach nearest to that of man, are horizontal in posture, and have no prominent nose. This form, at the same time that it remarkably distinguishes the human from the brute features, is exactly adapted to the erect attitude. In that posture the plane of the orbits is nearly horizontal; the cavities of the nose are in the best direction from which they receive the air from below them; the laws do not project in front of the forehead and chin. But suppose the posture changed, as painful an effort would be required to examine an object in front of the body as is now necessary to keep the eyes fixed on the zenith, and the heavens would be almost hidden from our view; the nose would be unable to perceive any other odours than those which proceeded from the earth or from the body itself; and the teeth and lips would be almost useless, for they would scarcely touch an object on the surface of the ground. Hence it is the horizontal position of the eyes that is the foundation of the characteristic and unique appearance of man. In the chimpanzee, the arms reach to the level of the knees, and in the orang-outan to the ankles; while in man they extend only to the middle of the thighs. In all other animals the thigh is still shorter.

In the human knee-joint we find the opposed extremities of the femur and tibia expanded so as to present a very broad articulating surface; and the internal condyle of the femur prolonged, so that the whole weight of the body, when erect, falls vertically on the top of the tibia, when the foot is on the ground. The weight of the body is next transmitted through the tibia to the upper convex surface of the astragalus, and thence to the other bones of the foot.

The human foot is, in proportion to the size of the whole body, larger, broader, and stronger than that of any other mammal. In the upright position it is at right angles with the leg, and is in contact with the ground at both ends. The sole of the foot is concave, so that the weight of the body, when erect, falls upon the os calcis, which is connected with the os calcis (supported below by a very strong ligament), represents the key-stone, and of which the principal points of support are the large and arched os calcis, and the anterior extremities of the metatarsal bones. This strength and size of his foot enable man alone of all mammals to support the weight of the body, although its four limbs, and not to bear the weight of the body, although its four limbs, and not to bear the weight of the body, although its four limbs, which, when standing, they touch only with the outer side of the rest of the foot; while in animals more remote from
Man alone is two-handed. 'That,' says Cuvier (Regnum Animal, i., 78), 'which constitutes the hand, properly so called, is the faculty of opposing the thumb to the other fingers; which is the most minute part of the body, is applied to its highest degree of perfection in man, in which the whole anterior extremity is free, and can be employed in prehension. Hands thus defined occur only in man and in monkeys; the former is therefore made to constitute a separate order, the Simianous,' which includes them. man included in a second order, the quadrupedes, or four-handed.

Although formed on the same general plan as the anterior extremity of all vertebrated animals, the structure of the human hand is so much more complicated than theirs, and adapted to a good deal of movement, that Dr. Bell (Bridgewater Treatise, p. 18) has said, 'We ought to define the hand as belonging exclusively to man.' Its perfection as an organ of prehension is due partly to its own construction, and partly to the form of the parts with which it is connected, for 'the whole frame must conform to the hand, and act with reference to it.' The erect attitude, for example, which has been proved to be that which is natural to man, is necessary to its full action, and to that wide range of motion which it receives from the arm, and which is the main object in the construction of the body by which the hand is connected with the trunk. And in like manner it could be proved that more remotely the peculiarities of the organs of sensation, of digestion, and of other functions are adapted to the hands.

By a bone, which keeps the shoulder and arm apart from the chest, man obtains, in common with all the animals which have much power in digging, flying, or climbing, as horses, bats, squirrels, &c., a powerful inward motion of the arm, and a wider range for action. The arm is a long, slender, and strong bone, which is separated from the hand, is movable, and has a prominent spine and acromion, to which muscles are attached, while its glenoid cavity, being directed outwards, and maintained there by the clavicle, leaves all the outward motions of the arm perfectly free. The arm is constructed so that the head of the humerus loosely adapted to the shallow glenoid cavity, its long and light shaft, and its flattened tubercles, all combine to produce a freedom of motion in the upper arm, which, were it used as an organ of support, could not have been without danger of fracture, the region of the arm is the wide range within which it is necessary that the hand should act. The only motions of the fore-arm upon the upper arm are those of flexion and extension; by the former the hand can be brought within, and by the latter carried outwards. The fore-arm, it is clear, is capable of the whole range of motions which the wrist and hand can effect. The bones of the forearm itself are so articulated that one may rotate on the other in any position of the arm; the bone, which in this rotation is fixed, being that by which the hinge-joint of the elbow is formed, while the other points of articulation are free, and can move in any direction at that point.

The perfection of the structure of the hand itself is chiefly due to the size and strength of the thumb, by which no other organ has given rise to the multitude of monkeys (who enjoy a freedom of motion of the arm, as we are) is also chiefly produced. From its size and strength the thumb of the human hand can be brought into exact and powerful opposition to the extremities of the fingers, which are all movable and capable of fine movements, and can move in its turn, or altogether, be employed in association with the thumb. The least consideration will show how numerous are the actions in which this easy and exact opposition of the tips of the thumb and of one or more fingers, is not merely of assistance in carrying out the delicate haptic manipulations which approach most nearly to man the thumb is short and weak, and the fingers so long and slender, that their tips can scarcely be brought in opposition, and can never be opposed in near contact with each other with any degree of force. Hence though the hand, and with the arm and body of a certain size, as the small branches of the arm, for they can neither seize very minute objects, nor support large ones; but the hand of man is adapted for all these and many other purposes.

It is a great peculiarity of man that his hands and feet
are so different from each other; and in man alone their uses are totally different. In the monkeys all the extremities are alike formed to be organs of prehension; in the carnivora all are alike organs of prehension and support; in the foetuses of most mammals the anterior or upper extremities are entirely for prehension, the posterior, lower, entirely for support. M. Bory de St. Vincent (art. 'Orang,' Dict. Cl. d'Hist. Nat.) indeed thinks that the absence of a prehensile power in the human foot is essentially due to the fact that the great toe is so placed that it could not be changed so as to convert the foot of man into a hand, like that of the monkey. He says there are peasants in the Landes of Aquitaine who are termed resiniers, from collecting the resin of the Pinus maritima, who acquire a power of grasping with their feet equal to that of the toes, like a thumb; but it would surely be as incorrect to deduce from the instances of rarely acquired power in these peasants, or in those who are born without hands, and can write or work with their toes, that the human foot is naturally an organ of prehension, as it would to assume that the natural position of the bear is erect, because a few of his species have been taught to assume such a position for a short time. Besides, those who have been born without hands, and have endeavored to form with their toes the bodies and limb-joints of small bodies have been effected not by opposing the great toe to the others, but by flexing its phalanges firmly against its ball.

With one exception (in the fossil genus Anthropotherium) the distinction must be from all other forms by the equality in length of all his teeth, and by the equally close approximation of them all in each jaw. Even the most anthropomorphous apes (as the chimpanzees and orang-outang) have the canine teeth longer than the others, and an interval in the middle of the arch on the Archæotherium to show the canine teeth of the opposite jaw. The vertical position of the human teeth, on which one of the most characteristic features of the human face, the prominent chin, depends, is also quite peculiar, and is intimately connected both with the structure of the face and with the economy of the body; for the divided food is conveyed to the mouth. The intermaxillary bones, in which the upper incisor teeth are developed, have often been described as absent in man alone; but in fact they are only united to the upper maxillaries in a less degree than in any other mammal. The extent of the palateal portions of these bones is indicated by the position of the furamina incisiva, which in man are united into one hole, which is much nearer to the incisor teeth than in any quadruped of small bulk. The smoothness of his skin and the entire deficiency of all natural arms either of attack or of defence are other peculiarities of the human race. The face and body of the most delicate female are indeed covered with hair, and the chin of the Esquimaux and Fuegian is so well developed, that there is sufficient difference between the fine colourless and downy hair with which the human body generally is beset, and the long silky or woolly hair with which even the smoothest apes are covered, to adopt this as an additional characteristic of the species. The body, the other hand, is even more hairy than those of other animals, as the scalp, axilium, &c. In his naturally unarmed condition, destitute of either projecting teeth or strong claws, covered neither with hair scales, nor with bony points, nor with thick hide, and surplased in speed, by many of his more powerful antagonists, man's condition would seem most pitiable, and inferior to that of any other animal; for on all the rest of those to whom she has denied the weapons of attack, nature has furnished them with means of preservation, or of flight. But man, by his superior reason, has subdued all other animals. His intellect can scarcely suggest the mechanism which his hands cannot frame; and he has made for himself arms more powerful and extensive than all the others; he has clothed himself in armour and built walls of defence with which he can defy the attacks of any but his fellow-men. Naturally unarmed, man has conquered the whole armed creation; some he has driven from their abode, but with human art and effort; others he has forced to share his labour; and others he uses for his food, his clothing, or his pleasure.

The only other part of the human structure which it is now necessary to notice is the brain, whose size in proportion to the rest of the nervous system far surpasses that of any other animal. This may be at once seen by observing the proportion which the cranium, or rather the cavity containing the brain, and the face, bear to each other. In many cases also it may be estimated by what is called the facial angle of Camper, which is found by drawing a line parallel to the upper jaw-bone, and observing the angle which it forms with another line drawn through the meatus auditorius externus to the base of the nose, or the head being held in a vertical position) with a horizontal line. In man the average of Europeans and of adult children it is a right angle, but in some negroes is not more than 70°. In the adult chimpanzee (which approaches in this respect nearest to man) the facial angle is only 35°, and in the orang or satyr 30°. (Owen," in Zoöl. Syst. Prim. 1847, p. 3.) In other cases it is still further increased by the prominence of large frontal sinuses; or by the comparative shortness of the jaws. In regard to its structure the human brain exceeds all others in the development of its cerebral hemispheres, in the number and weavesment of parts, in the depth above its evolutions, and in the quantity of its medullary matter in proportion to the cortical.

In the economy of the human body there are peculiarities not marked perhaps the most characteristic is the ability which man enjoys of living on almost any part of the globe, and of thriving alike in either extreme of natural temperature. Thus the Greenlanders and Esquimaux have reached between 70° and 80° of the Arctic circle, and the natives of the coast of Africa do not appear to be essentially different from the man of Americas live under the equator. But even Europeans, accustomed to a temperate climate, can bear either of these extremes of cold and heat, as has been sufficiently proved by the numerous instances in which those who have lived in the Arctic have not been thrown into any fever, and in high northern latitudes; and on the other hand by the slight degree in which European settlers in the hottest parts of Africa are influenced by the temperature.

Man subsists with equal facility under various degrees of atmospheric pressure. In valleys of the Andes the altitudes of South America, some of which are 10,000 feet high, are both inhabited by man, the barometer standing in the one at 30, and in the other at only 20 inches. Condamine and Bougainville, their attendants, lived from the 14,600 feet of the level of the sea, where the barometer stood at 154 inches, and the atmospheric pressure was therefore only a little more than half that to which they had been accustomed.

In adaptation with his ability to inhabit almost every climate, man can subsist on the most varied food. In the northern regions, where the earth is covered through the greater part of the year with snow, and vegetables of any kind can be procured only in the smallest quantity, the Esquimaux subsist as well on animal substances alone as the European does on the most carefully mixed diet; and on the other hand the inhabitant of the torrid zone is not more incommoded by his daily subsistence on the cocoa-nut, banana, yam, rice, and other farinaceous and acid vegetables. In the temperate climates, where animal and vegetable food can be procured with equal facility, man is truly omnivorous; towards the poles animal food or fish becomes more exclusively his diet; and towards the equator his food is chiefly composed of vegetables; and there is no doubt that in each case that food which is most universally adopted is that which is best adapted for the health of the inhabitants.

Thus then, in his comparatively complete independence of local circumstances, and in his ability to subsist on all kinds of food, man is singular. It is singular that the animals who approach most nearly to him in structure should be amongst those who, in this respect of geographical distribution, differ most widely from him. The chimpanzee and orang-outang, for example, are found on the coasts of Guinea, and a few other parts of Africa; and even in their native countries they occur in but small numbers. The difficulty too of removing them to colder climates, and of preserving their lives there, even with all the care which human art can suggest, is immense, and after a few months they become diseased and die. Hence we may...
conclude that although he receives much aid in supporting the extremes of climate from the various means of defence with which his arts have supplied him, there is yet a strength and pliancy of frame in man which peculiarly fit him and him alone, for universal distribution over the surface of the earth.

Man is further remarkable for his slow growth, and for the length of time during which he remains in a state of helpless infancy and of youth. The process of ossification and development of the bones of the skull are completed later in him than in any other animal; he is unable to seek his own food for at least the first three years of his life, and does not attain to the adult period or to his full stature till he is from five to twenty years old. The length of time to which his life may be prolonged is however proportionally greater than that of any animal, and is especially interesting when compared with that of those who in many respects resemble him. The greatest longevity to which the orang-utan is known is forty years, while in all nations of men instances occur of life being prolonged to upwards of 100 years.

However widely man may be distinguished from other animals in the peculiarities of his structure and economy altered and continually remodelled, without either a conception of their meaning, and sullen passive submission, are in general the best results that can be found. There is not a proof in the whole history of animals that any species or individual has ever made an advance towards an improvement in its condition; while in the condition of living beings, the habits of all remain the same; all of the same species appear endowed with the same faculties and dispositions, and each is in mental power the same throughout his life.

Contrast with these the progress of man. In his origin weak, naked, and defenceless, he has not only obtained dominion over all the animate creation, but the very elements are made to serve his purpose. Of the earth he has built his houses, and constructed and incorporated weapons and the implements of art; he uses the wind to carry him in ships, and to prepare his food; and when the wind will not suit him, he employs fire and water to replace or to resist it. By artificial light he has prevented the inconveniences of dark- ness. He has clothed and made shelter in the midst of deserts, marshes, and forests alike to bear his food; he has marked out and measured the course of the celestial bodies, till he has discovered from them the size and form of the earth with himself inhabits.

In comparison with his exalted mental endowments is man's peculiar possession of language. Other animals are naturally speechless, not from any material difference in the form of their organs (for man can teach some of these to talk, but without the faculty of forming those associations of ideas which are essential to a complete construction and utterance of words.

The peculiarities above described will probably be deemed sufficient to justify the separation of man as a distinct species by himself. Of the animals in this respect indeed the difference between the lowest man and any animal is far greater than the change which any species can be proved or supposed to have undergone in any period of time, and under however varied circumstances; so that if degrees of difference of this kind could be measured, there would probably be as much justice as convenience in the classification of those naturalists who believe that the differences between the different races in the varied forms of the skull. Dr. Prichard (Researches, i. 281) refers the varieties in the form of the skull to three principal divisions:—1st. The symmetrical or oval form, in which are included all those of the Indo-Atlantic from the Himalayas mountains to the Indian Ocean, including the whole of Hindustan and the Deccan, as well as Persia and Arabia; and from the Ganges to the borders of the Atlantic, including the north of Africa and nearly the whole of the Iberian peninsula.
MAN

MAN

manal character. The compressed, narrow, and retracting forehead; the scarcely prominent nose, with its wide expanded nostrils; the thick protruding lips, and the retracting chin; the projecting cheeks, and the heavy jaws, combine to add to the characteristics which approximate, though they do not identify, the form of the negro with that of animals.

The features of the third variety differ scarcely less from the European than those of the negro, but in a different direction. Instead of the long and four prominent, the oval, we here find a face which is broadest transversely from one cheek-bone to the other; and which, as it gradually narrows, both above and below, acquires somewhat of a lozenge-shape. The nose is flat, the space between the eyes generally depressed, and the lips, which are sometimes more or less placed obliquely, with their internal angles descending towards the nose, rounded and open; the lips large, but not so prominent as those of the negro; the chin short, but not retracting under the lips.

But these varieties are not separated by very definite limits. There are numerous instances of negroes remarkable for the beauty and European character of their features; and daily observation shows Europeans who, in the narrowness of the skull, the lowness of the forehead, and the height as a general rule, resemble the Montagnes and the negro; while others in their features resemble the broad and flat-faced Tartars or Chinese. Within each of these varieties moreover are included numerous smaller divisions, which are certainly, though less prominently, distinct in their physical character. The English, the Scotch, the English, French, and Germans, for example, are in general distinguishable, though it would be difficult to define their differences. Similar subdivisions of character are found among all the varieties, and so fill up the intervals between them. The third variety is the most regular and nearly perfect series, of which the Esquimaux and negro might occupy the extremities, and the European the middle place, between the broad and high features of the negro and the narrow, elongated, and depressed skull and face of the other.

Differences in the shape of the pelvis (on which depend some important differences in the external form of the body) have been often supposed characteristic of different races of men. But after an extended series of observations by Professor Weber, it has been lately shown that every form of the pelvis which deviates from the ordinary type, in whatever race it may most frequently occur, finds its analogues in other races. He has arranged the various types according to their degree of approximation to the primitive model. The result of his observation is, that the round, the square, and the cube-like or oblong; and he shows that although the first is the most general form in Europeans, the second in the Americans, the third in the Mongolians, and the last in the Africans, yet that specimens of all these forms are found among the black races of America, and that the Africans appear about as much so far advanced as that of the Europeans. The Hottentots are below the general size, and the Bushmen still more so, for among them 5 feet 4 inches is said to be the average height of the men, and 4 feet 7 inches of the women. The Caffres on the coast and the Bantu, who are supposed to be the Hottentots, are distinguished for their height and strength. The people of the north of Asia and the Laplanders and Samoiedes in Europe are generally shorter than the inhabitants of the warmer climes, but the Chinese and Japanese, who in other respects much resemble them, are of about the same stature as the rest of the Europeans.

With these varieties in stature it is interesting to compare the amounts of physical power possessed by different nations. The standard of measurement is that of popular belief, which ascribes a decrease of physical strength proportionate to the increase of intellectual power acquired by civilization. The Spaniards in their first intercourse with America found the natives in general much weaker than the Europeans; and the English and Americans, after they had sustained the severe labour of the mines led to the introduction of African slaves, one of whom was equal to three or four Indians. Hearne and others have found the same feebleness in the natives of various parts of the North American continent, and Pallas in his travels in New South Wales. The mean results were as follows:

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<tr>
<th>Strength of the Arms.</th>
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<tr>
<td>Kilograms</td>
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<tr>
<td>Van Diemen's Land</td>
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<td>New Holland</td>
<td>50'8</td>
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<td>Timor</td>
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<td>England</td>
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The substance on which the varieties of colour in the human race depend, is seated chiefly in the softest and most internal layers of the cuticle; the true skin (cutis, derma), is similar in all nations, and the outer hardened layers of the cuticle have only a light tinge of the colour beneath them, which constitute what is often called the reticular tissue. [Cuticle; Skin.] The human complexion depends in part on the condition of the cutis and its vessels, and in part on that of the cuticle. In white nations, according to the fulness or comparative thinness of the blood.

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vessels of the skin, we find all the gradations of complexion, from the deep reddiness of full health, to the blanched pallor of sickness; and in negroes, the same changes are indicated by a greater intensity of the blackness and by a dull leaden hue. These differences however chiefly characterize the national types; the cuticular character, and depend entirely on the cuticle. A thick and opaque though colourless cuticle, obscuring the blood of the cutis, assists greatly in giving that deadness of hue and phlegmatic aspect which distinguishes some Europeans from others who with a thinner and more translucent epithelium are marked by a florid ruddy complexion. As the cuticle becomes darker in colour, it obscures more completely the colour of the blood in the subjacent tissue, and hence it is only in nations of light complexion that sudden blushing or paleness is at once perceptible.

With the varieties in the colour of the skin there generally coincide analogous differences in the hair and eyes. It is probable indeed that the colouring matter is the same in all, being combined in the cuticle with its peculiar cells and in the living tissues in general. The most abundant and conspicuous particles.

Dr. Prichard refers all the differences of complexion in man to three principal varieties — 1. The Melanocoeous, or black species; 2. The Buff; and 3. The Fair, with some exception in the northern parts of Europe and Asia. The coincident colour of the skin varies from a deep black, as in some negroes, to a much lighter or more dilute slade. In the copper-coloured nations of America and Africa the dusky hue is often mixed, while in some other nations of Africa, of Asia it is mixed with a tinge of yellow. In intensity of colour there is every shade from the black of the Senegal negro to the light olive of the northern Hindus, and from the latter there may be traced every variety of shade among the negroes of the southern parts of Asia. In the Malays, in the Asiaties, in the warm swarthys, and in the black-haired Europeans in general. 2. The Leucous, or Albino variety, examples of which occur in all countries [Albinos], but perhaps most frequently in hot countries. They are distinguished by the total absence of the colouring matter of the cuticle, hair, and eyes; hence their skin is of a milk-white or pinkish-hue, the hair silky-white or at most yellowish, the iris rosy and the pupil intensely red. 3. The Xanthous, or yellow-haired variety, which includes all those individuals who have light brown, yellow, or red hair. Their general complexion is fair, acquiring on exposure to heat and light not a brown hue, but more or less of a red tint. The eyes are light coloured. This is the variety most prevalent in the temperate regions of Europe and Asia, and seems particularly favorable to the constitution of body connected with it. This variety may spring up in any black-haired tribe; as it has in the Jews, who, though generally black haired, present many examples of the light fair complexion (see Dr. G. W. C. Kayser's researches, &c., &c., p. 228) ample evidence that instances of this variety occur not only among the Greeks, Romans, Russians, Laplanders, Tartars, and other Melanocoeous races of the least swarthy shade, but among the Egyptians, African negroes, and the islanders of the Pacific. The majority of these last cases have been confounded, under the term of white negroes, with the real Albinos; but they differ from them in the more ruddy hue of the skin, the colour of the iris, the blackness of the pupil, and the flaxen or red colour of the hair.

Other varieties besides those of colour occur in the skin and its appendages. The skin of many tribes of negroes is peculiarly sleek and oily, from the abundance of sebaceous and perspiratory secretion. From many also there is emitted a peculiarly strong odour, and Humboldt says that the Peruvians can by the sense of smell alone distinguish the European, the American Indian, and the negro. The cuticle of the dark tribes is thicker and coarser than that of white nations, and, from the greater difficulty of separating the cuticle from the skin, it is sometimes mistaken for the hair. The hair is no rete mucosum, or soft cuticle, in Europeans. The hair also varies almost as much in its texture as in its colour. Its chief varieties are observed in the copious, long, soft and more or less curling, the coarse and straight, the straight and scanty hair of the South Sea Islanders; and the black, fine, wavy, curl hair of the negro. A very general characteristic of the darker-coloured nations is either an entire want of beard, or a very scanty one developed later in life than in the white races. Mr. Lawrence (Lectures, 272) has adduced proofs of this in the Mongols, the Chinese, Japanese, Malays, South Sea Islanders, negroes, and the Indians of North and South America; but the fact has been somewhat obscured by the varieties, which occur in each of these nations, under these names, of extirpating the little hair which they have.

In the performance of the several functions of the economy, it has not yet appeared that any fixed difference exists in the several races of men, except in cases in which the variation is due to the difference of climate, and even in these alike in all races when subjected to the same influences. In physical endowments also, however great may be the distance between the degrees of intellectual and moral elevation possessed by civilized and uncivilized nations, yet there is sufficient difference to produce to prevent the same mental endowments, similar natural predispositions: at impressions, the same consciousness, sentiments, sympathies, propensities, in short a common physical nature, or a common mind. (See Prichard's Researches.)

In accordance with the physiological and psychical properties of all nations afford some of the strongest possible arguments in favour of the whole human race being but one species; for, as Dr. Prichard observes, 'the psychological characters of race are liable to few and very slight changes, and every number of individuals spread over the greater part of the globe no other differences occur, either in the average length of life, or the extreme length occasionally attained, in the periods of gestation, of infancy, of puberty, and of other natural life; nor are the men of different nations of different minds, dispositions, and intellectual faculties, than may be fairly attributed to the differences of external circumstances, it may be at once concluded that they are all members of the same family, and the offspring of one common stock. This argument cannot be taken directly from those animals which from their forms alone it might be difficult to determine whether they belonged to the same or different species. But a great number of races and species, which so much resemble each other, in the varieties of external circumstances, it may be at once concluded that they are all members of the same family, and the offspring of one common stock. This argument cannot be taken directly from those animals which from their forms alone it might be difficult to determine whether they belonged to the same or different species. But a great number of races and species, which so much resemble each other, in the manner of life and in other respects closely resembling each other, in the period of gestation, and the various variations occurring in each species, vary more or less in different countries, and the want of uniformity of the human race is not due to any peculiarity in the species, but to the diversity of external circumstances, to which modifications in form and colour are produced.
there by the Spaniards. Yet in that country they have already degenerated into breeds very different from each other and from their original. Those taken to Cuba gain a bony structure of both sexes much more than twice as large as their progenitors. In Normandy the swine are remarkable for the length of the bone of the hind leg. Swine with solid hoofs were known to the ancients, and large breeds of them are found in Hungary and Sweden. In some also the hoof is divided into five clfts. In Guinea they have long ears, opposite the back; in China, a long pendulant belly and very short legs; at Cape Verdi and other places, very large curved tusks. Thus then in one species we find changes even greater than those which occur among men; and as to their causes, properly important, Blumenbach says that the whole difference between the cranium of the negro and that of a European is by no means greater than that which exists between the cranium of the wild boar and that of the domestic swine. An examination of the different breeds of sheep, horses, oxen, goats, cats, rabbits, and still more of domestic fowl, would in like manner show that all those species, even while under observation, are subject to greater variations than are found in the different races of men.

In respect of colour, a perfect analogy holds between the varieties of domestic animals and those of men. In all those enumerated above, examples occur of the melanocomos, leucous, and xanthous varieties springing up casually or existing constantly in particular breeds. Thus even in the African species. Other breeds are recognised by their colour as well as their forms. Azara remarks of the horses and oxen of Paraguay (where both species have run wild and multiplied very rapidly) that while all those that are domesticated vary considerably in coloration, in their original state they are all black. Among horses a chestnut or bay-brown, the oxen reddish-brown on the back and black on the rest of the body.

The analogy between the variations to which domesticated (and more rarely wild) animals are subject, and those which are observed in men, is a strong argument for the unity of the human species. Another which deserves much weight is drawn from the propagation of the several races. It is well known that among the different animals the hybrid productions of parents of different species are either quite barren or only produce sterile young. The same thing is shown with the human species, and that an intermediate race cannot be maintained even to the second generation without a return to the pure blood of one or other parent. On the other hand, it is observed among domestic animals that the progeny of different varieties can live and multiply, and the species are apt very soon to become more numerous than the originals from which they sprang. Exactly the same principle holds in the human race. All nations propagate according to the supposed laws of probability, and it is certain that the progeny of parents of different nations have in many instances exceeded those from whom they sprung in vigour and in the tendency to multiplication.

Lastly, a consideration of the diseases to which mankind are subject shows that the greater part of them are common to all, though modified in different climates, and though a few produced by local circumstances are peculiar to individual tribes.

From these facts, therefore, by which it is shown that in all the characters in which external circumstances have least influence the whole human race agree, while in others more easily modified they present only those changes which are observed to an equal or a greater extent in animals known to have descended from a common stock, it may fairly be concluded that mankind is composed of but one species. The characters of this species given by Blumenbach, and generally received, are: Erect, two-handed, unarmed, rational, endowed with speech; a prominent chin; four incisor teeth above and below; all the teeth equally appressed; the eyes prominent; the nose broad, flat, and vertically directed; cheek-bones prominent; jaws narrow and projecting; upper front teeth oblique; chin receding. The eyes prominent; the nose broad, thick, flat, and confused with the extended jaw; the lips, and particularly the upper one, large. All this is characteristic of Africa, not included in the first variety, belong to this.

The American variety:—skin dark, and more or less of a red tint; black, straight, and strong hair; small beard; and a countenance and skull very similar to the Mongolians. The forehead is prominent, the nose broad, thick, flat; and the cheek-bones particularly the one on the right, and nearly all the other characters are those of the Mongols. The eyes prominent; the nose broad, thick, flat, and confused with the extended jaw; the lips, and particularly the upper one, large. In this is included the inhabitants of Ma- lacca, of Sumatra, Java, Borneo, Celebes, and the adjacent Asiatic Islands; of the Molucca, Ladrone, Philippine, Marian, and Caroline groups; of New Holland, Van Diemans Land, New Guinea, New Zealand, and of all the islands of the South Seas.

The Malay variety:—brown colour, from a light tawny to a deep brown. Hair black, more or less curled, and abundant; head rather narrow; bones of the face large and prominent: nose full, and broad towards the apex; mouth large. In this are included the inhabitants of Malacca, of Sumatra, Java, Borneo, Celebes, and the adjacent Asiatic Islands; of the Molucca, Ladrone, Philippine, Marian, Caroline groups; New Holland, Van Diemans Land, New Guinea, New Zealand, and of all the islands of the South Seas.

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breath varies from about 80 to 11 miles, but is much narrower at its extremities and its circumference is about 75 miles. Its surface is about 220 square miles. The Calf of Man is a small island situated to the south-west of the island, nearly a mile from it, and from 3 to 5 miles in circumference. The Kitterlinns, another small rocky island, is situated at the mouth of the coast of Menai lies at the mouth of the Menai Strait. The Island of Man is the Mona of Cessa, the Monapia of Pliny, Mona de Ptolemey, Menavisa of Orosius, and Bede, and Eubonia of Nennius. Its derivation is probably from the British word ' mon', which means isolated or divided, and is surrounded by islands of mountains, which runs from north-east to south-west nearly through its whole length, and chiefly occupies the central parts. Dr. Berger, who has fixed the heights of 89 of these hills, considers them to be the foundations of three chains, separated by scars which are so great as to have been crossed by three very narrow openings. Snaefell, the highest point of them all, is 2004 feet above the level of the sea, and North Barrule rises to 1804 feet. The mountains, commons, and waste lands are supposed to cover 50,000 acres, leaving about 90,000 acres for cultivation. England, Scotland, Ireland, and Wales are visible from the summits of the mountains on a clear day. The Neub, Sulby, and other streams which flow from the mountains enter the sea at Peel, Laxey, Douglas, and Ramsey. The island is divided into many parishes by the lines of cliffs.

Rocks of mica-slate and clay-slate compose all the mountains. These slates form also the coast at Spanish Head, where some precipices exceed 300 feet in height. The summit of one of the cliffs contains a druidical monument of some antiquity, and found on the side of the island is a large summit of which is covered with grass. The base of this mountain is rich in metals. The galena which is found here contains from 90 to 130 ounces of silver per ton. Copper pyrites has 5 ounces of silver per ton, and bluestones, well found for copper, form the largest portion of the island and nearly all the Calf. In one of the varieties of this slate, found towards its junction with the grawaacke rocks, the surfaces of the scabs shine with metallic lustre. A stratified grey stone, which is used in the building the, is another variety. The clay-slate, variety, at Spanish Head, is used for lintels, &c. The roofing-slate, drawing-slate, and one of a vermilion colour near Braddah, make up the other varieties of clay-slate found in the island. The secondary slate formation, resting on the primary, consists of grawaacke, grawaacke slate, and old red-sandstone, and forms the greater part of the rocky sea-coast of the island, but does not extend much inland. The cliffs of this formation on the coast at Spanish Head exceed 300 feet in height and picturesque appearance. There is a belt along the west coast, about two miles in width, consisting of old red-sandstone, of which Peel Castle is built. Limestone extends several miles on each side of Castletown. The steps at the mouth of the Menai, Lord Bruce, and chapter by Bishop Wilson, consist of the first variety of this rock. Castle Rushen was built of the second variety, which is of a bluish-grey colour. The third variety, of a light grey colour, consists chiefly of shells. The fourth variety, which is magnesian, rarely contains organic remains, and its colour is yellow or white grey. Near Poolvash veins of trap, from two to six feet broad, break through the dark grey limestone. Boulders occur, of which the most numerous are granite, which differs from the other igneous rocks by its colour. Fragments of quartz are scattered from north to south, and the blocks of clay-slate and mica-slate mixed with the quartz prove it to belong to the island. The other boulders of quartz appear to have come from the north and north-west, and similar blocks on the south side of some of the most elevated mountains. Boulders of sienite form a druidical circle near Bishop's Court. Granite in situ, containing mica, felspar, and quartz, is found in blocks on the north and south Barrule. The decomposition of the follicular forms a fine powder, which is sold for polishing iron.

The soil in the south part of the island is a light clay formed by the decomposition of the clay-slate. The mountainous district is adapted only for pasture, and judicious culture alone can render the hilly parts productive. The soil however in the level country, extending from Kirkmichael to the north-eastern extremity of the island, consists of sand, clay, and peat, and contains excellent mire. The soil in the neighbourhood of Castletown is well adapted for wheat, and the abundance of lime supplies the farmers with a cheap manure. The climate, although variable, damp, and windy, is temperate. The highest and lowest temperatures observed are about 77° and 26° Fahr. respectfully: the mean annual temperature is about 49°. The annual rainfall is about 70 inches.

The harvests are frequently late, owing to the climate. The agriculture of the country, in consequence of the attention paid to the herring-fishing, was left very much to the women, who were accustomed to perform all the hard work on the farm, and who, as the corn itself would have been unthralled. The smallness of the farms, and the nature of the labour, very much impeded improvement. The breeds of cattle, sheep, hogs, and poultry are of many varieties, although more attention is paid to them than formerly. Wheat, and in some years potatoes, have been exported in considerable quantities. The turnip husbandry has been much improved lately, and is steadily advancing. The island is not at present remarkable for its sheep, though there is a great increase of sheep in the last few years. The farmers in general have no great wealth, but they have the advantage of feeding their cattle and sheep on grasses which are not at all economical. The Houghton sheep, peculiar to the island, are slow feeders and long in coming to maturity, their wool is much used for making stockings. The judicious selection of such varieties of grain also as suit the soils and the climate would greatly increase the productivity of the island. The early history of the Isle of Man is obscure. It was governed by a succession of Norwegian kings, until Magnus, finding himself unable to preserve the Western lakes, sold them to Alexander III, king of Scotland, A.D. 1244. Some years afterwards the Isle of Man was visited by Alexander, and appointed Regulus king, who was restored by a treaty, stipulating that the king of Man should furnish ships for Scotland, on condition that Alexander defended the island from all foreign enemies. William de Montforte, with his English forces, advanced against the Scots; but his wretched provisions caused his death, and the island was restored to the king of England. In 1307 Edward II. bestowed this island first upon the earl of Cornwall, and then on Henry Beaumont. The Scots, under Robert Bruce, invaded the island, and captured the castle of Pembroke, and Lord and chapter by Bishop Wilson, consist of the first variety of this rock. Castle Rushen was built of the second variety, which is of a bluish-grey colour. The third variety, of a light grey colour, consists chiefly of shells. The fourth variety, which is magnesian, rarely contains organic remains, and its colour is yellow or white grey. Near Poolvash veins of trap, from two to six feet broad, break through the dark grey limestone. Boulders occur, of which the most numerous are granite, which differs from the other igneous rocks by its colour. Fragments of quartz are scattered from north to south, and the blocks of clay-slate and mica-slate mixed with the quartz prove it to belong to the island. The other boulders of quartz appear to have come from the north and north-west, and similar blocks on the south side of some of the most elevated mountains. Boulders of sienite form a druidical circle near Bishop's Court. Granite in situ, containing mica, felspar, and quartz, is found in blocks on the north and south Barrule. The decomposition of the follicular forms a fine powder, which is sold for polishing iron.

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of which she retired, until Christian, on whom she relied, and who had the command of the forces, capitulated to Blackmore. When the duke, however, deigned to speak of the title of ten vessels. The parliament granted the island to Lord Fairfax. King Charles II., on his accession to the throne, gave it to the earl of Derby, the son of the earl who had been beheaded. James earl of Derby dying without issue, the title became vested in Mrs. Pech, and it remained in the same family. The present earl of Derby sold his title in 1769, and the present lord of Man, enjoyed all its ecclesiastical patronage, with mines, minerals, treasure trove, and other privileges.

The duke, after repeated applications to government, obtained a perpetual grant of a fourth of the net customs revenue of the island to proprietor. By a subsequent arrangement with the duke on the part of the English government (6 George IV., c. 34) Great Britain now enjoys all the sovereign rights and privileges of the island. The customs of the ports are also vested in the crown, an act of parliament passed in 1769, and enforced that year (chap. 115), which established the privilege of licensing such a stipulated quantity of certain goods charged with specified duties as will serve for the consumption of the island's inhabitants.

No part of the kingdom abounds so much in Danish remains. The various tumuli, barrows, weapons, coins, and Runic characters afford clear evidence of the connection which the Northmen had with this island. Some Druidical temples have been discovered. The venerable remains of Ruschen Abbey, which belonged to the Cistercian order, and of another near Douglas, for female votaries, supposed to have been founded by St. Bridget, show the influence of the church during the middle ages. The college of St. John, built in 1276, now known as the Honan College of St. John, is the residence of the principal, and is one of the finest buildings in the island. A few steps from the college, and scarcely a foot deep at low water, is a small island, called St. John's Island, on which a Benedictine monastery is situated.

The local laws of the island still continue to be read and promulgated here annually before the governor, two deemsters, keys, council, and various officers of state, and divine service concludes the solemnities of the day. The Tinwald Meeting House, in the north of the island, is a small building, situated near the intersection of the high road from Castletown to Ramsey with that from Douglas to Peel. The whole island was formerly divided into 600 portions, called "parishes"; but this number was increased, according to the authority of Feltam, in 1796, to 750. Possession for twenty-one years gives a good title to property. The right of pasture for a certain number of cattle on the commons, and of quarrying stones and digging peat, belongs to the proprietor.

The principal towns in the island are Castletown, Douglas, Peel, and Ramsey. Castletown, situated in the south-west of the island, is a neat town, with spacious and regular streets, and the wealth of the island is here. The houses, situated on the opposite sides of a small creek, opening into a bay in the shape of a crescent, the extremities of which project into the sea. Castle Rushen, in Castletown, was built, according to tradition, in the year 869, and was the residence of the archbishops, or bishops of the island. The stone glacies by which it is surrounded is supposed to have been built by Cardinal Wolsey. The stone-work of the keep and several interior portions of the buildings are nearly entire; but, in consequence of the damages done by repeated sieges, the outer parts have been repaired. The prisoners must have been lowered into the keep by ropes, as there are no steps for descending. The first stone of a neat and beautiful chapel in this town was laid by Bishop Wilson in 1695. The college, which has 200 pupils, is one of the oldest in the island, and various masters, was built by the exertions of the late Bishop Ward, aided by 1000l. left by Bishop Barrow. There is also a neat chapel adjoining the college. The courts of chancery and common law are held in Castletown, and it is the residence of the bishop. The House of Keys meets here. The number of inhabitants was 19,624 in 1831, and the population in 1831 was 2077. When the last census was taken the number of prisoners in the gaol of Castle Rushen was 12 males and 3 females.

Ramsey, of Kirkwall, formerly written Duffus, and supposed by some to derive its name from the two rivers Doe and Glass, is situated on the south-east coast of the island. The bay extends three miles, from Clayhead to Douglas Promontory, in the form of a crescent, and is sheltered from the wind and waves by the beauty of the scenery, the magnificent appearance of Castle Mona, built by the duke of Athol, and the numerous gentle- men's seats and neat cottages which surround the town, give the place a very agreeable appearance. The pier, which is 250 feet long and 40 feet broad, was built by the government at the cost of 25,000l. The old streets are generally very irregular, but some which have been lately finished, or are now in progress, are regularly built. The street which fronts the river forms a picturesque church of the Middle age. The other part of the town, the former George's Chapel is pleasantly situated on an eminence at the west end of the town. There is a Lancasterian school capable of containing 700 scholars, which is well attended. The population of Douglas was 679 in 1831; according to the more recent census, in 1841, it was 11,376, with 4,000 families, and a population of 7000. This town, which a century ago consisted of little more than clay-built huts, has now the chief trade of the island. There is a linen manufactory and a paper and woollen manufactory at Douglas.

Peel, formerly called Holm Peel, is on the west coast of the island. The castle, which is built on a small rocky island, encloses an irregular space of more than two acres, and is separated from the town by a small stream, scarcely a foot deep at low water. A strong wall, built as a security for the harbour, connects the island and castle with the mainland. There is a pyramidal mound of earth in the centre of the castle, surrounded by a ditch five feet deep and 100 feet wide, with a round stone wall. The main situate near this mound. The former was probably built before the Norman conquest, the latter, which was erected about 1243, is the cathedral church of the island, but is now only used for a burying-place. Peel has a fine church of the Middle age. The other part of the town, now only a small village, is a small town, the only dissenters. There is an endowed school for grammar and mathematics. No attention is now paid to the harbour, and the pier is altogether destroyed. This town, which flourished through smuggling, is now, since it has ceased, and the town is in a very decayed condition. The population in 1831 was only 1729.

Ramsey is situated on a spacious bay, where there is safe anchorage, on the north-eastern coast of the island. It is built in a straggling and irregular manner. In this town, the courts of law are held. The Methodists are the most numerous dissenters. Its population in 1831 was 1754.

The herring-fishery employs about 250 boats, of from 15 to 30 tons burthen, and from 2000 to 3000 tons burthen. The value of one ton of these boats, nets, &c., is about 100l. Successful years at present yield 40,000 or 50,000 barrels of herrings, of which one-third are used on the island. The deep fishing, if properly followed out, would add very much to the prosperity of the island, and would form an active body of permanent fishermen.

Duties levied on imported goods, charges on vessels and boats trading to the island, the harbour dues, taxes on dogs, carriages, and public-houses, are the taxes of the island. The two last are the more important, and are paid in cash. The customs average from 20,000l. to 25,000l. After paying salaries to the officers employed by government, a surplus is annually remitted to England of from 12,000l. to 15,000l. Two steam-boats ply between Liverpool and the island: there is one from Dublin to Whitehaven which calls at Douglas, and there is constant communication between Scotland and the island.

The established religion is that of the Church of England. All denominations of Christians have the free exercise of their religion. The Methodists are supposed to be nearly one-tenth of the population. The value of thir
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teen out of seventeen livings in the diocese is 90%, per annum each. The episcopal see is supposed to have been fixed at Sodor in the ninth century, but the site of this place is not now known. The bishop of Sodor and Man, whose authority is wholly confined to this island, is a sinecure, and the Bishop of York has no see in the House of Lords. Several distinguished men have filled the see of Sodor and Man. Barrow, Wilson, and Hildesley have been specially marked by any bishops of the Christian church. Barrow endowed schools, and formed a system of parochial instruction. Bishop Wilson, who filled the see for fifty-six years, secured the people of this island, by the Act of Settlement, a deliverance from their vassalage to the lord of the island, and manfully and successfully defended the interests of his clergy against the same noble family. In the translation of Scripture, Bishop Wilson was laborious and conscientious, and the translation of the Scripture into that tongue, which was completed under Hildesley, the whole island felt for him the affection of a father, and the greatest pleasure of the people was to receive his benediction. Although offered a bishopric in England, he preferred his own little island and narrow income to rich preferment in his native country. His code for conducting the affairs of his diocese was so perfect, that it has been observed of him, that should all others perish, it would fully supply their place. His code has been distinguished by great originality and vigour of mind, but few have equalled him in Christian charity and benevolence.

The bishop of Sodor and Man has an archdeacon and his assistant, two vicars-general, and an episcopal regis-
tor, and a council of canons. He also dispenses the temporalities of his diocese through the Ecclesiastical courts for the proving of wills, granting administration, and carrying on suits against executors and administrators, are held by the bishop or his vicars-general for one half of the year, and by the archdeacon or his official for the other half. There is an appeal from these courts to the spiritual affairs of the archbishop of York. The vicars-general hold a court every Friday. The clergy are assembled every year in convocation at the bishop's court, and a consis-
torial court is convened on the last Thursday of every month.

A court of Chancery is held eight times in the year, where the governor acts as chancellor, with the assistance of the deans and other chief officers. The Court of Ex-
chequer is generally held immediately after the former, and the governor, assisted by the deanser, is sole judge. This court takes cognizance of all matters connected with the revenues. The common-law courts are held at different places for the different shadings into which the island is divided, called Glenfaba, Michael, Ayre, Garff, Middle, and Rusby. The courts at Peel are for the shadings of Castletown, and at Castletown for the shadings of Middle and Rusby. All disputes about land and all personal actions for the recovery of damages are tried in this court in a jury. The deansers administer the oath in the Manx language, deliver the charge, and receive the verdict. There is an appeal from the judgment of a court of common-law, first to the House of Keys, afterwards to the governor, and finally to the privy-council. There is a general gaol de-

livery twice in the year. The high bailiffs, who act as magis-
tres, bear the whole of the income of the island, 1777, and can hear and determine all causes under forty shillings; they also maintain the peace and apprehend offenders.

Bishop Barrow formed a school, in 1665, in every parish in the island, and Bishop Wilson says, in 1747, 'We have petty schools, which are the foundation of cate-
chising in every parish, and, though, meanly endowed, may by care become special means of improvement.' The teaching of the Manx language, which is a dialect of the Erse or Celtic, has contributed to the general improve-
ment of the natives, all of whom will probably in a short time be able to speak and read English. The present numbers of the Manx Scholars are 200, the religious knowledge and intellectual improvement of the inhabitants.

Population.—Bede states that the island contained only 100 families, or about 1600 persons, in the eighth century. It was, however, devastated by the Danes, and the number in the island was 41,000. The increase during the ten years preceding 1831 amounted only to 919 persons; and the chief places where this took place were Douglas, Kirkpatrick, and Ramsey. The manufacturers in the Isle of Man are generally weavers and a few spinners.

(Townley's Journal in the Isle of Man; Felthouse's Tour through the Isle of Man; Wood's Account of the past and present State of the Isle of Man; Commissioner's Report for 1793; Population Returns: Education Returns: Mac-
beth's Manx Vocabulary; Wood's Account of the Island; Communications from the Island.)

MANAAR, Island. [CEYLON.]

MANAKINS, the name of a group of small birds remarkable for the rich tints of their plumage. Pippinae are generally considered as the most beautiful of the Manakins. In its great defect in natural beauty La Mancha bears a striking contrast to the fertile and picturesque regions to the south and east. Such is the centre of the province. Its frontiers are ma-
tainable. On the south, forming the boundary between La Mancha and Extremadura, the lofty chain of the Sierra Morena; on the north are the mountains of Toledo, almost wholly in the province of that name; and on the south-east of La Mancha, but within its boundaries, is the Sierra de Abarca.

The province is divided into Upper and Lower La Mancha. The capital is Ciudad Real, situated in a fertile plain, and formerly a flourishing city; but its trade and manufactures of wool and leather are now almost extinct, and its popula-
tion has dwindled down to 6000 or 7000. Its streets are empty and its houses are a confusion of squares and quadrangles, in which bull-fights are occasionally held. The other places of importance are Almagro, Manzanares, Val de Peñas, Almaden, Quintanar de la Orden, and Toboso—man-
tised by Cervantes.

The climate of La Mancha is intensely hot in sum-
mer, and rendered severely cold in winter by keen winds, though snow and ice are rare, except on the moun-
tains. The soil is poor, it is parched by a burning sun, and scarcely refreshed by rivers; for the Guadalquivir is the only river of any size in the province, and its waters are generally silted up. Its tributaries, the Segura, the Guadiana, and the Guadalquivir, are mere rivulets. The Guadalquivir, which rises in the Sierra de Abarca, and drains the greater part of the province, is of considerable volume. About four leagues from its source it loses itself in a marsh, and after running underground for five miles, re-appears at the small lakes called the Eyes of the Guadalquivir. This remarkable phenomenon has given rise to the saying that
there is in Spain a bridge five leagues in length. The population of La Mancha is principally agricultural. Wages for field labour are three reals, or sevenpence-farthng sterling per diem. The productions are corn, especially oats—olives, which grow in the neighbourhood of Ciudad Real, Almansa, Manzanares, and Cape de la Hogue; and so cheap that a gallon costs no more than fourpence sterling. The wine of Val de Peñas is the most esteemed: it is a red wine, light and racy, but, unless drunk in the province, is much injured in flavour by the skins in which it is customarily transported in Spain. Its price on the spot is about 3l. 10s. per pipe. La Mancha also produces some saffron and honey, but scarcely any fruit. The mules of La Mancha are famed for their great size; mules and asses are used for all the purposes of husbandry, as these animals are frequently not to be obtained, but mutton costs only about 2½d. and bread 1½d. per lb.

La Mancha is rich in mineral productions. There is a mine of silver, at present abandoned, together with several of antimony, near Almodóvar del Campo; and a mine of mercury, belonging to the crown, and very productive, at Almadén. [ALMADÉN.] Ochre, rock-crystal, bauxite, calcium, and cinnabar are also found in La Mancha. There are likewise several springs of mineral waters, both hot and cold.

The southern coast is broad in extent, and mainly occupied by manufactories, which have greatly decayed; but the spinning of wool still gives employment to several thousands of the population. Flannels, broad lace, leather gloves, hard soap, and gunpowder are also manufactured, but all on a small scale, and for the home consumption, as there is a still lower ebb; and were it not for the productions of the soil with which La Mancha supplies the other provinces, it would be utterly dead. In exchange for these, La Mancha receives articles of luxury, and even many of the necessities of life.

The Manchegos are grave, solemn, and punctilious, but courteous, peaceable, and good-humoured. The lower orders are hardy, industrious, frugal, and little addicted to pleasure. Everything indeed in La Mancha partakes of the melancholy of the scenery; and were it not for the charm with which Cervantes has invested the province, and the similarity of manners and customs existing at the present day to those depicted in his immortal work, La Mancha would be to the traveller the most dreary and uninteresting part of Spain.

(Labord's Itinéraire Descriptif de l'Espagne; Townsend's Journey through Spain; Ingold's Spain in 1830; Cruz, Viaje de España.)

Many of the towns of France, deriving its name from La Manche (the Sleeper), or English Channel, on the coast of which it lies. It is bounded on the west, north, and north-east by the Channel; on the east by the department of Calvados; on the south-east by that of Orne; and on the south by those of Mayenne and Ille et Vilaine. Its form is little more than a parallelogram, having its greatest length from north by west to south by east, from Cape de la Hague to the neighbourhood of St. James, 92 miles; and its greatest breadth from Pontorson through Mortain to the border of the department of Orne, 39 miles. Its area is estimated at 928 square miles, which is rather under the average area of the French departments, and about equal to the joint areas of the English counties of Kent and Surrey. The population of the department in 1831 was 598,356; and in 1856 it was 594,352, showing an increase of 3,009, little more than five years, and giving 258 inhabitants to a square mile. In amount and density of population the department exceeds the average of the French departments in the proportion of five to three; but is much exceeded by the English counties with which we have compared it. The chief town is St. Lö on the river Vire, in 49° 27' N. lat. and 0° 6' W. long.; 132 miles from Paris, in a direct line west by north, or 171 miles by the road through Mantes, Evreux, Caen, and Bayeux.

The coast-line forms two sides (the north and the west) of the rectangle to which the form of the department approximates, and part of the third side (the eastern); the northern part of the department is a peninsula, formerly known as the district of Le Cotochin, or Cotentin, from the town of Coutances. The coast-line forms on the south-western side of the department the bay of St. Michael, which is occupied by shoals, intersected by the channels of the rivers that empty themselves into the bay. From this bay the coast runs in a tolerably regular line north by west to the village of Carteret, receiving the Sienne, the Ay, and some other small streams. From the village and small sandy haven of Carteret the coast runs north to the rocky headland of St. Malo, where it forms a bay (Anse de la Pointe du Jour) abreast of which is the small bay (Anse) of Vauville. Near the Nez de Jourouen is Cape la Hogue, the northerly point of the rectangle. Opposite to the western coast are the little island of Chaussey with its granite quarries, and the Channel Islands, which belong to England; Jersey is opposite the mouth of the Ay, and Aurnegny or Alderney, the nearest to the French coast, is opposite Cape la Hogue, from which it is separated by the Raz de Blan- chart, or, as the English term it, the Race of Alderney. The northern coast from Cape la Hogue to Pointe Bar- fleur, the north-eastern point of the rectangle, forms a shallow bay, at the bottom of which are the roadstead and town of Cherbourg. The roadstead is defended by a dyke, or breakwater, having a small island at each end; that at the east end is called Poile. Near Cherbourg the coast is high and abrupt. From Pointe Barfleur the coast runs southward in an irregular line to the mouth of the Douve and the Vire, which is full of shoals. This eastern coast is skirted above high-water-mark by a marshy flat a mile and a half wide, which is bordered with a belt of sand; the sea by sand-dunes, and below high-water-mark by broad sands and rocks; it has opposite to it the small island of St. Marcouf.

The department has not any mountains, but a range of hills, some of them of considerable height, branching from the Armorican chain, extends through it from south to north. The principal streams flow from these heights eastward or westward into the sea, owing to the proximity of which all the watercourses are short.

The primitive peoples presumably occupied the greater part of the department, but a part of the eastern coast and of the country about Valognes, Carentan, and St. Lö is occupied by later formations. Between Carentan and Valognes the elevated tract behind the low marshes that skirt the shore, shielded by a belt of dunes, forms a small district inland. This flat closely resembles, in its fossil remains, that of the south of England; the white and blue strata are commonly much intermixed. The new red sandstone is abundant between Carentan and St. Lö; it is chiefly composed of red marl and red sandstone, with the usual blue and white strata; between Carentan and Isigny it is yellowish mixed with red and grey, and is tolerably compact. Red marl and red sandstone belonging to this formation is found near the coast, and is often dug and raised in blocks with gravel, but forms of the rocks of this formation, intermixed with quartz rock, on which in several places the new red-sandstone is found to rest. This quartz rock has in some parts been denuded; it is found between Valognes and Cherbourg alternating with the preceding strata, and on the east side of the department about St. Lö. Granite, resembling that of Dartmoor, is found at St. Vaast near Pointe Barfleur.

A bed of limestone, probably belonging to the supracre- taceous rocks, is quarried between Carentan and Valognes; and another limestone of carboniferous date is found in the immediate vicinity of the latter place (Geol. Transact., 2nd series, vol. i.).

The mineral treasures of the department are not great. There is one iron-works, having one furnace, and raising about 12 tons per annum. No coal is procured, but granite, slates, and stones for millstones and whetstones are quarried; kaolin and potters' earth are procured; and there are some mineral springs, and in the marshes considerable salt-mines.

The largest river is the Vire, which rises in the department of Orne, and enters this department on the east side near Tassy, from whence it flows northward, just within and in one part on the boundary of the department, past St. Lö into the English Channel, not far from St. Malo, about 50 miles, for about eight of which it is navigable. The Douve rises near the west coast of the peninsula of Cotentin, across which it flows in a winding channel to the eastward, until it falls into the same inlet or estuary as the Vire. Its whole length is about 34 miles, for both of which it is navigable. The Merderet and the Sève, small feeders of the Douve, about 12 miles long, are navigable, the first for about four miles, the second for about three;
and the Taute, another small feeder of the same river, 20 or 32 miles long, is navigable for about 14 or 15 miles. The Sinope and the Saire run into the sea on the east coast; the Divatte, at Cherbourg on the north coast, and the Ay on the west coast: these are all small. The Sienne rises in the plain of Calvados, and flows north-westward, while the department into the sea: its length is about 38 or 40 miles, of which only five are navigable. Its principal feeder is the Souelle, which flows by Coutances; the Airon and the Venne are smaller. In the south of the department are the Coté bus, or Selune (34 miles long, with five miles the same breadth), which rises in the south-eastern side of the department, and flows across it into the sea opposite Mont St. Michel, receiving in its course the Deron, the Brevo, and the Or; the Sée (28 to 30 miles long), which falls into the sea south of the Cotentin, or near the Sienne; the Breva, from which only a small portion, including a navigation of five miles, belongs to the department.

The Terre de Madelaine, two streams to which the government returns assign a navigation of four and five miles to the department, and the Lorné, or Bréou, on the Mont St. Quentin, which enter the sea along the coast, where Bréou, or near the Sienne; Brehal, in the south-west of that river; Périers, near the Taute; Créacé and Lessay, on or near the Ay, the mouth of which forms a small harbor, La Haye-Puisey is situated, is a small port of the Douvre; and Pont-à-Chevet, near the Douvre; Barneville, on the haven of Carentan on the west coast; and Barfleur, Taibice, Saint-Vincent (pop. 3502), Quétiehou, and La Hougue, on the eastern coast, in the departement of Calvados, said to have owed its origin to the destruction by fire of an ancient city close by, which Maite Brun and others, most probably by the modern name of the commune in which ruins stand (Alluame), supposed to have been the Amauro in the times of the English in France, under Henry V. and VI.; and was again the object of contest in the civil wars of the sixteenth century, and in the troubles of the majority of the 14th century. The inhabitants manufacture porcelain, felt, etc. The trade is carried on in linens, gloves, and paper. The manufacture of woolen-cloth, once flourishing, has gone to decay. There is a considerable trade in the village of Tour-la-Ville (pop. 3624) near Cherbourg are slate quarries; there were formerly extensive glass-works here. At St. Vast near St. Pierre-Eglise, cotton-yarn and calicoes are manufactured.

There are 49 cantons, or districts, each under the jurisdiction of a justice of the peace.

In the arrondissement of St. Lô, etc., St. Lô (pop. 12,134 town, 8,421 whole commune; in 1836, 9,065 commune), located in the river country east of that river; Goulain, near the source of the Sienne; Canisy and Marigny, near St. Lô; and Carentan, at the junction of the Taute and the Douvre. This latter was formerly a fortress, built during the occupation of Normandy by Fingal, and subsequently a scene of many important battles, of which only one remnant remains. Carentan (pop. 2292 town, 2773 whole commune), situated in a marshy and unhealthy district, is surrounded by walls and defended by a strong fort. On the banks of the Sienne, hemp, flax, honey, butter, fish, cattle, and horses. There are some manufactures of lace and cotton.

In the arrondissement of Coutances are, Coutances (pop. 1831, 8937; in 1836, 7653 for the commune) [Coutances] and Cerisy-la-Salle, the nearest borough of which (pop. 1844), St. Denis, Gavray, and Guerche, near the Venelle and near the Sienne; Brehal, in the south-west of that river; Périers, near the Taute; Créacé and Lessay, on or near the Ay, the mouth of which forms a small harbor, La Haye-Puisey, situated, is a small harbor of the Douvre; and Pont-à-Chevet, near the Douvre; Barneville, on the haven of Carentan on the west coast; and Barfleur, Taibice, Saint-Vincent, Quétiehou, and La Hougue, on the eastern coast, in the department of Calvados, said to have owed its origin to the destruction by fire of an ancient city close by, which Maite Brun and others, most probably by the modern name of the commune in which ruins stand (Alluame), supposed to have been the Amauro in the times of the English in France, under Henry V. and VI.; and was again the object of contest in the civil wars of the sixteenth century, and in the troubles of the minority of the 14th century. The inhabitants manufacture porcelain, felt, etc. The trade is carried on in linens, gloves, and paper. The manufacture of woolen-cloth, once flourishing, has gone to decay. There is a considerable trade in the village of Tour-la-Ville (pop. 3624) near Cherbourg are slate quarries; there were formerly extensive glass-works here. At St. Vast near St. Pierre-Eglise, cotton-yarn and calicoes are manufactured.

In the department of Avranches are, Avranches (pop. 1831, 7000 town, 7269 whole commune; in 1836, 7320 commune) [Avranches] and Breezy, on the Sée: V. Lô. (pop. 5581 town, 6902 whole commune) [V. Lô], in the mouth of the Sée: Lande, on the Airon; La Haye-Pesnel, and Sarthorville, a great part of the country north of the Seé: Granville (pop. 7350) [Granville], Genet, and Pouton, on the west coast: Ducey, on the Cerise; and Saint-James (pop. 1794 town, 2104 whole commune) [Saint-James], on the Cerise, is a grant of the territory in which it stands, made by Henry I. of England, duke of Normandy, to the Hospit. of Jerusalem. The village, which rose on the possession of...
of the Hospitalers, called Theopolis, or God's town (in French, Ville Dieu), grew to a town. It is a busy place; there are copper-foundries, brass and earthenware manufactories, and a haircloth manufactury. Leather and lace are made; the latter chiefly by women. Pontorson is on the Couenon, or Gouenon, near the borders of the department. The inhabitants trade in linen and lace. The latter, which is of excellent quality, is made in the hospital or poor-house, and also afforded employment and subsistence to a considerable number of poor. Saint-James is built on a hill, surrounded by vineyards; in the election of 1831, the electorate consisted of fifty-five candidates, with forty-eight votes; in the election of 1832, there were given 40,000 names of resident housekeepers; in that for 1833 above 44,000; in the former the number of streets was 2740; in the latter 3620. Under the Reform Act Manchester sends two members to parliament. In the last election, attended by five candidates, there were given 969 votes; in the election in 1835 four candidates received 9636 votes.

Under the Municipal Act the borough has a commission of the peace, which is divided into fifteen wards, has a mayor (Thomas Potts), and forty-eight councillors, who are elected by the freeholders, and a council chamber.

The town is not distinguished for architectural beauty; its chief streets are occupied with warehouses and shops, the houses being small and the streets narrow and narrow. There are several manufactories done for the improvement of the town, both in convenience and appearance. Market-street, the chief mart for retail business, was not many years ago a mere lane: it is now a very handsome street. The improvement was completed in 1832. The river is navigable for vessels of 1400 tons. The plan of improvement consists of diverting the stream from its natural course into the chaste portion of the Subscription Library, and the truly classic and handsome Royal Institution, both in Mosley-street, and the hall of the Museum in Peter-street. The Infranmary buildings are also magnificent, and Manchester is one of the most handsome towns in the kingdom, having a most magnificent church.

A statute of the year 1685 was passed, which takes away the privilege of the merchants to trade with the colonies. This statute was repealed in 1710, and the privileges of the merchants were restored.

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of sending his coal from Worsley to Manchester at a small expense. [BRINOLY]

Manchester now possesses the means of water-communication with every part of the country. In the railroad enterprise Manchester has held a prominent station. It furnishes its full share of the capital employed in the formation of the Manchester and Liverpool railway, the act for which was obtained in May, 1826; the road was completed by Midsummer, 1830, and formally opened on the 15th of September of the same year, in the presence of half a million of people assembled along the line. By the Report of the directors, dated January 19, 1839, declaring a dividend of 51. per cent. for the half-year previous, it appears that the receipts within that period were as follows:—Coaching department, 7,097; merchandise, 54,215; coal, with mineral total, 136,693. The expenses were 80,974, leaving a balance for distribution among the proprietors of 55,714.

The amount of expenditure in construction of the way and works is stated at the enormous sum of 1,576,037s. for a length of from the 12 years that have elapsed since the Manchester and Bolton railroad was formally opened on the 26th of May, 1838, its length is ten miles, and its cost 650,000l. A continuation of the line to Preston and Lancaster is in progress. A dividend of 1l. 10s. per share was declared on the 9th of January, 1839. The Grand Junction railway was opened from Manchester with Birmingham and London: there are 10,918 shares in this railway, and the outlay was 1,512,150l.; it was completed in September, 1837, and has paid on the first year 101. per share, on the last six months 12s.

There are also in course of formation lines to Leeds, direct to Birmingham, to Sheffield, &c.

History.—Manchester, as its name shows (Man, castra), was a Roman station, the Manesium of the Antonine Itinerary. Tradition, of course, is too often the origin by the learned Whittaker to have taken its rise in the reign of Titus, and during the continuance of the Romans in this island it was indebted to them for many of the germs of civilization, and especially for an woolen manufacture, a great trade which is said to have been introduced from Gaul before their invasion. Of the roads which were planned by Agricola, Manchester had four; two running from east to west, and two from north to south: in the former of these, as now known by the names of Singleton Brook, Prettewich, and Broughton, were connected with the Manchester camp. Under the Saxons Manchester became the abode of a Thane, who from his bontial hall dispensed a certain sort of justice, and furthered the improvement of the soil. At an early period it became a hamlet, and to the churches, one of which, St. Michael's, is mentioned in Domesday Book. In 870 the Danes got possession of Manchester. After the Norman conquest William gave the place to William of Poictou. The third baron of Manchester was created by Henry III. on the 13th of August in 1224, and the year 1301 Thomas de Greley granted the 'Great Charter of Manchester.' In 1307 the baron of Manchester was summoned to parliament, and appears to have been a favourite with Edward I., who made him Knight of the Bath.

The town, as it was found, consisting of De la Ware, and John, the first of the line, was called to parliament in the ninth year of Edward II. He and his successors distinguished themselves in the battle of Cressy, during the Wars of the Roses, and most of all at the period of the English Civil War, when the town of Manchester being one of those who espoused the cause of his continued resistance to Henry's wishes in regard to the divorce would lead to the extinction of his supremacy in England. At length the municipal rights vested in the family of ' Mussey of the Hollow.'

The dissensions excited by the Reformation were strongly experienced in this town. Collyer, the warden of the collegiate church, refused to acknowledge the spiritual supremacy of Henry VIII., and many of the great families in the neighbourhood also joined in a schism at the Dissolution of the monasteries at the sea of Rome. In the civil wars Manchester ranged itself on the side of the parliament (Puritanism having gained an ascendency in it), and sustained a siege conducted by Lord Strangford. On the cessation of the conflict Presbyterianism received Episcopacy: Heyrick, the warden of the collegiate church, being himself instrumental in bringing about the change. In 1646, when Lancashire was converted into an ecclesiastical province under the Presbyterian forms, Manchester, with some neighbouring places, was constituted the first classical division of the county. Under Cromwell the electors chose a representative in the person first of Mr. Charles Worsley, and then of Mr. R. Ratcliffe. The Act of Uniformity under Charles compelled about seventy ministers to quit their livings in the kingdom. A strong feeling soon grew up, and the Rebellion of 1649 had many friends and supporters in Manchester, even among the leading inhabitants and the clergy of the collegiate church. Prince Charles himself was entertained in the town at the latter end of his residence there. The college, subsequently known as an inn, under the title of the ' Palace,' and which has recently been pulled down to give place to warehouses. It was not till 1783 that the town had a nightly watch, nor did it possess a Police Act before 1791. The police, as well as the town was, it is said, as much excited and agitated by the new system as the people of the country of which it was a part, and the effect which great changes have been effected in the constitution of the country, displayed itself at a very early period in Manchester, and was supported and extended by means of ' Reform Clubs' and ' Church and King Clubs.' In 1781 a petition was presented to Parliament complaining of the invasion excited indignation and much wartite display. Immediately after the peace in 1815, the desire for ' Reform' began to manifest itself in Manchester in a very decided manner. By the Reform Act Manchester obtained, in common with many other towns in the kingdom, the elective franchise.

Manufactures.—Cotton is the chief article employed in the manufactures of Manchester. Of late the spinning and weaving of silk have been introduced, and it has manufactories of woollen, small wares, hats, umbrellas, and of machinery, which last has risen to great importance and perfection.

The commercial spirit dates back to a very early period. It is enough however, to mention this, that in the times of Henry VIII. and Edward VI. the town was already a great mercantile and manufacturing centre. The more rapid expansion of trade began in the seventeenth century, and one who is known as a benefactor to the town, Humphrey Chetham, was among its most celebrated men. A great trade was carried on with the Dutch in the Netherlands, and subsequently the revival of the edict of Nantes, brought many entreprenrs and skilful foreigners into the district, and gave energy and effect to the native commercial impulse. At first the woollen was only second in the manufacture. The second century the cotton business has nearly superseded the entire fabric. The natural advantages possessed by the town, together with the strength of character of the natures was undoubtedly the original and the main cause of the growth of the cotton trade. The first application of machinery occurred in the year 1700; inventions and discoveries applied, improved, or originated in the district of Manchester, which comprise the steam-engine, the spinning-jenny, the mule-jenny, the fly-frame, the under-frame, the mule, &c., have proved most effective instruments in its development to the last of the century, which gave energy to the cotton manufacture were completed about 1780. Before their introduction—namely, until 1751—the importation of raw cotton into this country had gone on increasing slowly; the supply being in 1770 about 7,400,000 lbs.; in 1780, 23,400,000; and in 1800, 5,400,000. Again, in 1838, according to Burnd's ' Commercial annals ' the value and value of manufactured cotton goods exported was----


In manufactured goods 120,784,529 11,746,473
In thread 3,266,594 137,334

236,900,900 17,964,857

The value of the cotton trade to the country has been estimated at 34,000,000l. annually; the capital employed at 200,000,000l., and the number of people engaged on 1,500,000, and that 1,500,000 people depend on it for their subsistence. Till within the last year or two, the progress has been steady and rapid; it is not however easy to assert that it will continue as satisfactory; at the moment we write the
(March, 1839), numerous mills in Manchester and the neighbourhood have ceased working, in part or altogether.

The processes of throwing and weaving silk were extensively carried on at Macclesfield several years before they reached Manchester. The mills of Mr. Vernon Royles, erected in 1819-20, was the first brought into operation in the latter town. Since then the trade has rapidly increased. In 1819 there were in it about a thousand weavers of mixed silk and cotton, and fifty of pure silk goods; in 1836 there were twenty-three thousand commissions, and, on the least baleful consequence, to early, improper, and improvident marriages. The charges against the factories, of being the scenes of violence and cruelty to children, of exorbitant attention against the men, as destructive alike of life and morality, may be considered as gross extravagances of the times.

Property in Manchester has greatly increased in value, and the habits of the manufacturers have undergone an entire change. It is curious to contrast the picture which Aikin gives with what is now seen in the stupendous warehouses and the mansions and palaces which are found in Manchester and its vicinity. An eminent manufacturer in that age (1695) used to be in his warehouse before six in the morning, accompanied by his children and apprentices. At seven they all came to breakfast, which consisted of one large dish of water-pottage of rice, a little salt, boiled thick, and porridge into a dish. At the side was a pan or basin of milk, and the master and apprentices, each with a wooden spoon in his hand, without loss of time, distributed the same, and then returned to their work and as soon as it was finished they all returned to their work. When the Manchester trade began to extend, the shopmen used to keep gangs of pack-horses and accompany them to the principal towns with goods in packs, which they opened on the way, in order to save the cost of carriage; and as soon as it was finished they all returned to their work. In 1816 the annual value of property in the township of Manchester was 405,905L; in 1835 it had reached 573,085L. In the township of Ardwick property had in 1836 nearly doubled in the short space of a year; in 1837 it had risen to 1,520,000L, in 1838, though, in the interval several joint-stock banks had been established. In 1794 the poors'-rate at five shillings in the pound produced 297,003L, in 1834 it realised on a half-crown 44,891L. In 1794 the masters, according to a statement of their general trading, paid in postages 11,000L, being a larger amount than any other provincial town; in 1838 the sum had risen to 59,332L. In the single article of bricks the town paid to the excise in 1835 no less a sum than 45,770L. The value of land has undergone a proportionate increase, as may be judged of by the following sales made of land in the central parts of the town: in 1834, 71 square yards in King Street were bought for 354l; 50 yards at the corner of Todd Street for 285l, in Smithy Door, 2000l; even 91, 10l, 15l, and yet higher sums have been given per square yard for land in situations eligible for those immense receptacles of goods, the larger warehouses. Land at the upper end of Market Street and Mosley Street, which 50 years ago was sold at 10l per yard annual rent, has been sold for 20s. a yard annual rent.

As to the intellectual and moral condition of the working classes, there has doubtless been great exaggeration, but it is equally true that in that condition there is much to deplore. The present system of factory work does away with the old domestic manufacture and thereby destroyed old domestic habits; it has also called from every district of the kingdom, and especially from Ireland (there are at least 56,000 Irish in Manchester), masses of people heterogeneous in their character, yet all more or less ignorant and uncertain, and not likely therefore to coalesce speedily into a compact form of civilised existence. Most of them have been much bettered in their circumstances without having found an equal increase of morality improving influences. Children by the amount of their wages have become inde-

pendent of their parents; girls have been sent into the mill before they have learnt the rudiments of domestic duty, and mothers, whose presence in their own houses is indispensable, young and old, with whom they have little or no connection, and from whom in consequence they can scarcely derive any improvement.

It must also be said that the atmosphere of the factory is unnatural and consequently unhealthy, while the degree of heat tends to the premature development of the children. Both these causes have, as we have seen, a direct bearing on the life and morals of the workpeople. It is, however, certain that neither their moral nor their physical atmosphere is favourable to the well-being of the workpeople; that with some honourable exceptions, the masters are guard in the cultivation of the comforts and improvement of those whom they employ, and think inclusively of the wealth they can extract from the establishments, and that thus there has arisen on the part of the workmen a feeling of jealousy, of dislike, of sudden discontent, which, added to other depraving influences, makes their moral tone hard, disposed to violence, and almost reckless, and hence the large number of disturbances that occur. This system, however, gives them opportunities of communicating their feelings one to another and of concentrating their power.

The system has not been sufficiently long in general operation to form a tolerable accurate means of judging of its effect on health and life; it is already, however, manifest in the development of the system in the country, which has been long and influential. There is a continual influx of fresh population to the towns from rural districts or small towns, and therefore statistical tables cannot furnish any accurate idea of the influence of the system on life.

When parents subsist on the earnings of their children, as in many instances, the relations of domestic life are subverted; the weak labour, the strong are idle, idleness begets vice, vice is the parent of discontent, and this is the use of intoxicating drinks; the parent is moreover punished in the disobedience, if not insolence, which soon manifests itself on the part of the children, who are well aware how much the family depends on their earnings. Of 63,923 persons employed in mills, in 1836, in the parish of St. Michael, Bolton, 6,120 were males; 37,930 were above the age of 18 years, and 16,914 were below the age of 15. The following table gives the average net weekly earnings of the different classes of operatives in the cotton factories of Manchester, Stockport, Dukinfield, and Hindley.

<table>
<thead>
<tr>
<th>Denomination of process in which employed</th>
<th>Class of Operatives</th>
<th>Average weekly net earnings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleaning and spreading cotton</td>
<td>Male and female adults</td>
<td>3 8</td>
</tr>
<tr>
<td>Carders or overlookers</td>
<td>Male adults</td>
<td>23 6</td>
</tr>
<tr>
<td>Carding</td>
<td>Principally female adults</td>
<td>8 0</td>
</tr>
<tr>
<td>Bobbin turners</td>
<td>Do.</td>
<td>7 54</td>
</tr>
<tr>
<td>Drawers</td>
<td>Male adult</td>
<td>23 25</td>
</tr>
<tr>
<td>Overlookers</td>
<td>Male and female adults, principally the former</td>
<td>25 48</td>
</tr>
<tr>
<td>Spinners</td>
<td>Male and female adults and non-adults</td>
<td>25 48</td>
</tr>
<tr>
<td>Male spinning</td>
<td>Feet</td>
<td>20 10</td>
</tr>
<tr>
<td>Throttle spinning</td>
<td>Male adult</td>
<td>25 44</td>
</tr>
<tr>
<td>Weaver</td>
<td>Male adult</td>
<td>25 44</td>
</tr>
<tr>
<td>Weaving</td>
<td>Male and female adults and non-adults</td>
<td>25 44</td>
</tr>
<tr>
<td>Reeling</td>
<td>Male adult</td>
<td>25 44</td>
</tr>
<tr>
<td>Roller-covering</td>
<td>Male and female adults and non-adults</td>
<td>25 44</td>
</tr>
<tr>
<td>Attending the steam-engine and making machines</td>
<td>Male adults</td>
<td>20 6</td>
</tr>
</tbody>
</table>
If this table were combined with the relative numbers of each description of the hands, it would afford the absolute average of their earnings, but it is beyond a doubt that the average is not less than 10 shillings a week each person, young and old. It will be noticed that the lowest wages are given to the scavengers and piecers, who are generally young children. Out of a family of six persons there may be three, out of seven persons four employed at the factory, and when in a few years the children are become older, all may so be engaged. This will give for each of such families an average earning of 30s. or 40s. a week, when only three or four out of each family are employed, which would be amply sufficient to provide all the necessaries of life. The splendid gin-palaces, the numerous beer-houses, Manchester, show it is not too obvious where the superfluous means of many go, and point out a source of demoralisation which is as frightful in its consequences as in its amount. But there are other signs which indicate anything but want on the part of the great bulk of the population. The last Report of the Manchester and Salford Provident Society shows that in 1837, though trade was not good, the amount received by its agents, who visit the houses of the workpeople and take their savings in very small deposits, was 473l., while the Savings' Bank received within the year ending November, 1838, no less a sum than 191,123l. The following tables will furnish the reader with the means of judging how much of this came immediately from the operatives:

<table>
<thead>
<tr>
<th>Classification of Depositors, November 20, 1838.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>Tradesmen, shopkeepers, artists, &amp;c.</td>
</tr>
<tr>
<td>Persons engaged in factories, warehouses, &amp;c.</td>
</tr>
<tr>
<td>Domestic servants</td>
</tr>
<tr>
<td>Widows</td>
</tr>
<tr>
<td>Weavers</td>
</tr>
<tr>
<td>Labourers</td>
</tr>
<tr>
<td>Farmers</td>
</tr>
</tbody>
</table>

Other descriptions not particularly specified | 1382 | 2468 | 4850 |

| Friendly societies | 77 |
| Charitable societies | 109 |

CLASSIFICATION OF SINGLE DEPOSITES, 1838.

<table>
<thead>
<tr>
<th>Depositor</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Yr.</td>
<td>2nd Yr.</td>
</tr>
<tr>
<td>-----------</td>
<td>--------</td>
</tr>
<tr>
<td>1818</td>
<td>1819</td>
</tr>
<tr>
<td>1823</td>
<td>1824</td>
</tr>
<tr>
<td>1828</td>
<td>1829</td>
</tr>
<tr>
<td>1833</td>
<td>1834</td>
</tr>
</tbody>
</table>

The deposits stated as exceeding 420 since the eighth year, 1825, are not new deposits, but transferred by gift, bequest, or otherwise, from old accounts to new ones.

Not merely the factory hands, but generally all classes of working men have been in the receipt of wages sufficient, if well laid out, to procure all the necessaries and many of the comforts of life. Yet for want of the proper moral training, and by reason of the demoralising influence of Irish and other uneducated labourers, the abodes of a large proportion are wretched. Of 4102 dwellings by which the Manchester Statistical Society gave a Report in 1834, found on personal inspection, 3100 were houses, 742 cellars, 250 rooms; of these there were comfortable 1531, well furnished 689, not comfortable 2531. In the Society issued another Report of 28, 186 dwellings examined.

Person occupying houses | 94,250
Do. do. rooms of houses | 3,351
Do. do. boarding with occupants of houses | 8,671

Total number of persons resident in the dwellings examined | 113,272
Do. do. boarding with occupants of cellars | 14,274

Of the 28,186 dwellings, 14,042 are reported as ill-furnished and 3832 as not comfortable; thus only 72 per cent. of the houses of the working population of Manchester and Salford are comfortable. The Report adds, "As in many (perhaps in the majority of cases) there are only two beds to a family of five or six persons of both sexes, the inconveniences and evils which must result are too obvious."

The following is an extract from the Report for 1835 of the Manchester and Salford Town Mission, which, making allowance for the peculiarity of the state of ignorance, superstition, demoralisation, and idleness which exists. This is only to point out the fact that those who visit them constantly and regularly, as our missionaries have done, are the most suffering and the most cruelly treated, the most neglected. It is a fact that many who thus suffer from ignorance are not only neglected, not only forgotten, but driven out of society, and that these are the very people to whom the Church is most bound to minister. The numbers attending Sunday-schools in Manchester and Salford, under the Established Church 16,254, under Dissent 19,032, Catholics 3812: respecting Sunday-schools the committee remark, "They consider the instruction given as of great advantage, by imparting feelings of moral and giving habits of order, but must be used in connection with daily instruction also; an opinion which will be thought not unfavourable by those who have personal experience of the workings, and there is there the deficiency, of these useful kicks, especially when they are given by those who grew up to a stiffness brought to light by Mr. J. Bentley by a personal examination, that in Manchester and Salford 1103
and, like all scholars, come too late to school, and this in the case of instruction where the same authority informs us, the following is on the average all the time employed each Sabbath, that is, each week, namely, in reading about one hour and fifty minutes; in singing, fourteen minutes and thirty-four seconds: total about two hours and a quarter.

The educational clauses in the last Factory Act have been of but small advantage. Dr. Kay stated before the Education Committee of 1838, that one cause of failure was the high cost of giving the children education in the usual manner, and is very obnoxious to the employer, and, I think, generally people laugh at it; it is almost good for nothing.

In the Report of Mr. L. Horner on these very clauses (Feb., 1839), it is said — "Some parents appreciate the advantage of the education method now given under the Factory Act; they prefer their children working full time and earning a full rate of wages. Under these circumstances it is easy to infer that a great number of the factories are not using the system of education. Indeed, Mr. Horner reports not more than eight mills in the whole of Manchester where the educational provision has been observed, which 'best' he allows to be inferior to what any primary education ought to be; and it embraces only 320 boys and 177 girls. The school of Messrs. M'Connell he considers worthy of special notice, and designing as an example; he adds that it is all an unusual thing to have certificates of education presented to us subscribed by the teacher with his or her mark. In the last quarter I had a school voucher presented to me with a mark, and when I called on the schoolmaster to read it to me before he could not; I had to have the school voucher of the fireman (to the steam-engine), the children having been schooled in the coal-hole — in one case I actually found them there; it occurred at factories where a large capital must be employed."

In the Report before the Education Committee, gave in a table in which he calculated that in Manchester there was a total of uneducated and very ill-educated children of 26,265; that the actual cost of providing a worthless or indifferent education by existing methods was 16.6d. annually, and that not more than 19.600. of annual outlay would be required for education, by an efficient method, of children now uneducated or very ill educated.

Meanwhile the diffusion of cheap literature and the improvement in schools is doing something to educate adults and youths, while the existence of a few good schools in Manchester for the children of the working classes will serve as models. In this way the 'Manchester Society for Promoting National Education' has at present 16,600. connected with it. The Rev. Mr. Witte (1839) is upwards of 900. Lectures on various topics are given by men of eminence. There is a French class, an Italian class, an Amateur Musical Society, an Essay and Discussion Society; and concerts are occasionally given, which are very successful. Connected with the Institution is a good library, a coffee-room, and a well-equipped news-room. Its expenditure is about 20000. annually; James Heywood, Esq., is the present President. The Mechanics' Institution in the Factory. The Mechanics' Institution in the Factory, under the presidency of Sir B. E. Woodford, gives great benefit to boys on a class below those to whom reference has been made. The disbursements of the Institution during 1838 were 2177l. The original cost of the building was 6000., but as the institution had its resources mainly absorbed in defraying the current charges, there was a deficiency upon an endowment of 550., and, deducting dividends paid, a balance is still due of 8195., to pay off which an effort is being made which gives promise of success. The number of subscribers on the 25th of December last was 1161., of whom 11 were under fourteen years of age, and 446 between fourteen and twenty-one. Sixty-five lectures were delivered during the last year, and were attended by 20,650 males, and 4800 females. Two concerts were also given. There are 5923 volumes in the library; the total value of books and periodicals read in the last years amounted to £2,451. The number of members in the respective classes were:

- Grammar 128, German language 8, arithmetic 154, elocution and composition 28, mechanical drawing 64, landscape and figure drawing 46, music 24, writing 133, mathematics 18, French 25. Besides these there were the chemistry class, the mutual improvement society, and the natural history class. An exhibition of specimens of machinery, natural history, &c., on a very grand scale, which 360 persons contributed to, has been visited by nearly 100,000 persons. The Institution is a reading-room, well furnished with literary and scientific periodicals. It is however to be regretted that the benefits of the establishment do not descend sufficiently low in the social scale, as the following classification of the numbers in 1837 will manifest:—

<table>
<thead>
<tr>
<th>Class</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principals, engaged as merchants, manufacturers, and mechanists</td>
<td>257</td>
</tr>
<tr>
<td>Mechanics, millwrights, and engineers</td>
<td>136</td>
</tr>
<tr>
<td>Overlookers, spinners, and other mill-hand</td>
<td>56</td>
</tr>
<tr>
<td>Building trades</td>
<td>104</td>
</tr>
<tr>
<td>Sundry trades, chiefly handicraft</td>
<td>333</td>
</tr>
<tr>
<td>Warehousemen</td>
<td>204</td>
</tr>
<tr>
<td>Clerks</td>
<td>150</td>
</tr>
<tr>
<td>Artists, architects, engravers, &amp;c.</td>
<td>60</td>
</tr>
<tr>
<td>Professional men</td>
<td>10</td>
</tr>
<tr>
<td>Schoolmasters</td>
<td>70</td>
</tr>
<tr>
<td>Shopkeepers and their assistants</td>
<td>86</td>
</tr>
<tr>
<td>No profession</td>
<td>11</td>
</tr>
<tr>
<td>Ladies</td>
<td>175</td>
</tr>
<tr>
<td>Youths</td>
<td>1392</td>
</tr>
</tbody>
</table>

The knowledge of this fact, combined with a wish to reach the operative classes, has led to the establishment of the Lyceums in Ancoats and in Chorlton-on-Medlock, as well as of the Parthenon; and if we may judge from the Report of that at Ancoats, which has just been issued, it is reasonable to hope that these institutions will confer immediate benefit on those who are employed in the factories and on other hand-labourers. The subscription is only two shillings a quarter, for which lectures, a library and reading-room, a selection of newspapers, education in classes, and other means of improvement, are provided. The education of females is made a prominent object. The news and reading rooms were opened on the 11th of October, 1838. From the library the average number of deliveries at 1290 each evening. There are now on the books 732 members, of whom 246 are below twenty-one years of age; the 715 ordinary members are thus classified:—

<table>
<thead>
<tr>
<th>Class</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principals, engaged as merchants, manufacturers, and mechanists</td>
<td>10</td>
</tr>
<tr>
<td>Professional men</td>
<td>4</td>
</tr>
<tr>
<td>Schoolmasters</td>
<td>6</td>
</tr>
<tr>
<td>Shopkeepers, master-tradesmen, and their assistants</td>
<td>87</td>
</tr>
<tr>
<td>Warehousemen and bookkeepers</td>
<td>132</td>
</tr>
<tr>
<td>Mechanics, millwrights, engineers, moulder, and smiths</td>
<td>137</td>
</tr>
<tr>
<td>Engravers and pattern-designers</td>
<td>22</td>
</tr>
<tr>
<td>Spinners, weavers, and other mill-hand</td>
<td>102</td>
</tr>
<tr>
<td>Other trades connected with the manufactures of the town, as dyers, calico-printers, fustian-cutters, &amp;c.</td>
<td>22</td>
</tr>
<tr>
<td>Building trades</td>
<td>10</td>
</tr>
<tr>
<td>Sundry handicraft trades</td>
<td>85</td>
</tr>
<tr>
<td>No profession</td>
<td>7</td>
</tr>
<tr>
<td>School-boys</td>
<td>22</td>
</tr>
<tr>
<td>Females</td>
<td>57</td>
</tr>
</tbody>
</table>

The Manchester Free Grammar-School was founded by Hugh O'Callam, bishop of Exeter. The foundation deed, bearing date 20th August, 1515, states the cause which influenced the founder to be that 'the youth, particularly in the county of Lancaster, had for a long time been in want of instruction, as well as the poverty of their
parents as for want of some person who should instruct them. And one of the fundamental requirements is, 'The
high-master for the time being shall always appoint one of his scholars to instruct and teach in the one end of the
school all infants that shall come there to learn their A B C, primers, etc., till they reach the grand command. The
quotations show that the school was designed to furnish ele-
mentary as well as grammatical learning to the poor and
those in need of instruction. The income of this school is
now above 5000l. a year; and though its operations have
been extended under a decree of the court of Chancery, and
though the masters receive handsome salaries, the outlay
must still leave an annual surplus. The instruction given
comprehends the mathematics, the English and French, as
well as the Greek and Latin languages; but the school is
far from being a good where public grand realized what
might produce, and cannot be considered as administered
in a manner conformable to the donor's intention.

Chetham's Hospital, or The College, was founded by
charter 1665, Humphrey Chetham being the benefactor,
who, as a medical schools Manchester has brought up.
boys of Manchester and Salford, and of Droylesden, ordered
in his will that the number should be augmented by the addition
of one from Droylesden, two from Crumpall, four from Turton,
and ten from Bolton, leaving the interest of 7000l. for their
maintenance, and the collection from the age of fourteen years
age, at which period they were to be put out to some trade.
The scholars are instructed in reading, writing, grammar,
and arithmetic. They are clothed, fed, boarded, and lodged.
The school is conducted in a convenient old building, which
stands immediately west of the Cathedral Church. The collection
is not less than 25,000 volumes, which have been accumulated
out of the benefactions of the same H. Chetham: among
the books are many rare and most valuable works. The
library is open to the use of the public; books are not
allowed to be taken out, but a copy is furnished. At present
the good which this library does is but small, the delivery of books to readers not amounting to an
average of twenty per day, a circumstance which may
be accounted for by the fact of the library being only open at
hours during the day when most men are employed.

Among the scientific institutions of the town, the Literary
and Philosophical Society stands first in point of time
(founded 1791). It has numbered among its members many
notable men and ladies of eminence, and many other
persons of high reputation: its utility has been fully
proved by the publication of its Transactions. The Royal
Manchester Institution for the promotion of Literature,
Science, and the Arts, formed mainly under the auspices of G. W. B. Power, for the encouragement of science and
in furthering the diffusion of knowledge: above 30,000l. was
laid out in the erection of the building. The Manchester
Museum, or Natural History Society, which has a hand-
some hall in Peter Street, ranks among the most useful
and most popular in the city, and offers the public a collection of objects in nature with which few simil-
lar establishments can enter into competition. The council
is empowered to open the museum to ladies, strangers, resi-
dent non-subscribers, schools, and the working classes.

In the year 1825, a new and handsome building for it has been
opened, situated near the botanical gardens, on the
Stretford road, a part of which will be appropriated to a
school and also, under the will of Mr. Kershaw of Oldham, who
bequeathed 20,000l. to be applied to the mainten-
ance of the institution. This new building has been
furnished with a suitably maintained building. The Jubilee, or Ladies' Female Charity School, founded in 1806, is conducted in the
house in Ducie-road, and educates forty girls for the duties of
them. The Manchester and Salford District Pre-
cent Society is designed to relieve, by a special effort, the
special wants of the poor. Following the impulse which
Boston (U.S.), under the auspices of Dr. Tuckerman of
that city, had given, the society sends forth visitors into
parts of the town (most of them are gratuitous laborers)
who minister to the spiritual wants of the people and encourage them by sympathy, and receive their small savings in order to deposit them in the savings bank.

For this purpose the town is divided into districts and sections,
in all 189, of which however 236 only are supplied with vessels.
Its Hendon department effects are not very good. These two
and cases were examined by its stipendiary justices in 143,
whereof 1285 received tickets to the various medical societies,
while were referred to the relief board of the society, and 142
were found to be cases in which the society could not mar-
chandise with the poor. The number of which number 246 were reported as unworthy, a powerful argument against indiscriminate alms-giving. Work was found for 14 persons, and 98 new cases of gross impro-
ded were detected and exposed. The ministry to the poor, which
visit the houses of the sick, takes in the month about 340, and he has 500 families under his ex-
tradition. Of a similar character is the Town Mission,
whose motto is, 'Not to Proselyte, but to Examine.'
Attempts during the last year was 1372, and the total
amount to more than one thousand eight hundred and thirty-seven hours have been spent by our missionaries in promoting the above object.

They have held eleven hundred and eighty-one meetings.
They have paid forty-three thousand three hundred
and sixty-seven visits; have lent the Old and New Testaments, and distributed in their districts sixty
thousand one hundred and sixty-two religious tracts. It is
computed that the number of individuals now under their care are at least sixty thousand. The number of minutes paid to the sick when two-thirds of the whole is given to any place of worship. In several of the districts there are not quite twenty families for each house that is licensed for the sale of strong drink; and many of the districts have no place of worship of any kind near these, in which the missionaries hold their meetings. It is a fact, well andcertained, that in many districts there are nearly no reputed brothels as there are houses for the sale of strong drink.

General Worship.—The collegiate church is a noble
Gothic building. The warden and fellows have the ele-
sciential patronage of the parish. Their corporate
cannot be accurately stated, as they refused to give amount to the return of the value of their property, ordered by
the use of the Commons, but the ecclesiastical courts report the gross yearly income to be £1600. The new
manor of Manchester will be in the province of York. [Lancs.
p. 296.] In 1795, Aikin tells us, the number of churches
and chapels of the Establishment in Manchester and Salford,
were thirty-five, amounting to twenty-five, and above
places of worship for different denominations; twenty-
how twenty-five places of worship in connexion with the Estab-
lishment, and above sixty in connexion with the dissenting.
In Manchester and Salford, of which the Wesleyan
Methodists have twelve, the Independents eight, the Quakers five, and the Roman Catholics four. The
number of the Establishment in Manchester and Salford amount to 53 per
cent. of the whole population. There are three
Charitable Institutions.—These are too numerous to
allow of more than a bare mention of some which are the most
useful. The School for the Deaf and Dumb was founded in

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in Manchester, each of which has an officiating minister, one in Rusholme Lane, another at Ardwick, and the third at Collyhurst.

Eminent Persons.—Hugh Oldham, bishop of Exeter; John Bradford, put to death by Mary for heresy; Doctor John Doke, the astrologer and ‘manicippus’ by statute, an enlightened and benevolent physician; Dr. Henry, and the duke of Bridgewater, though not natives, are too much connected with the town to be passed without notice; and the ten thousand or so of persons who are patronised by the corporation and to whom he has conferred signal benefits. Crabtree, a native, ought also to be mentioned. [Crafter, William.]

(Communication from Manchester. For further information see Whitaker’s History of Manchester: Aikin’s History of Manchester from Thirty to Forty Miles Round Manchester; Wheeler’s History, Ancient and Modern, of Manchester; Reports, &c.)

MANCHESTER. [HiFFOMANAE MANcipANI.] MANCI TitUM, MANCI T IPO. The right of mancipation, in whose terms in some of the term manicippus is used by Roman authors. The following is the description of Mancipatio by Gaius (i. 119, &c.):—’Mancipatio is a kind of imaginary sale, and is a peculiar privilege of Roman citizens. It is effected in the following manner:—The law says that not fewer than five witnesses, Roman citizens, of full age, and also another person, of the same class and condition, to hold the barren slaves, who is called libertus. The person who receives in mancipatio, taking the slave, and putting his hand where the property, according to Quirital Law, and I have purchased him with this money (in) and these barren slaves. He then strikes the scales with the piece of money, and gives it to him from whom he receives in mancipatio as the price. In mancipatio slaves and free persons are mancipated, as well as animals, which belong to the class of things mancipi, or mancipi, such as oxen, horses, mules, asses; lands also [praedia], as well in the city as in the country, which are of the class mancipi, such as are the Italian lands, are in mancipatio. The magistrate, in which the magisterial power differs from that of other things in this respect only, that persons, whether free or slaves, cannot be mancipated unless they are present, it being necessary that he who receives in mancipatio shall take hold of that which is given him in mancipatio, and in whose name it is to be said in manu viri esse [MARRIAGE], are things mancipi, and may be mancipated in the same way as slaves.

Mancipatio is the right of mancipiation. All things, of subjects of ownership, were either res mancipi or res nec mancipi: and there is, observes Gaius (i. 18, &c.), a great difference between things ‘mancipi’ and things ‘nec mancipi.’ The latter can be alienated by sale or tradition, if there are things corporeals, and therefore susceptible of delivery. Thus the property in a garment, gold, silver, may be transferred by bare tradition.lands in the province of individuals; at least no ownership in the sense in which lands in Italy were held. Lands in Italy held by individuals in full or Quiritan ownership could be the subject of usucaption, in jure cessio, mancipated, and vendicatio; lands in the provinces could not, unless by usucaption, in jure cessio. On the other hand, all the sons mancipated lands even in Italy were Ager Publicus, the property of the state, and as long as they remained in that condition, nothing beyond the use (usu fructus) and occupation of them [Fossoriorum] could be in private individuals. Much of the Ager Publicus has in course of time been assigned to citizens in full ownership, and accordingly it would become ‘mancipi’ and subject to the same rules as toalienation as other lands held in Quiritarian ownership.

Mancipatio could only take place between Roman citizens and Roman citizens, and thus, as a rule, only between those who enjoyed the Commercium, or privilege of buying and selling. As the effect of mancipatio was to transfer Quiritarian ownership with its accessory rights of usucaption, in jure cessio, mancipated, and vendicatio, the reason of the rule being obvious. The form of mancipatio was in some respects a disadvantage, inasmuch as without observing the formalities required by the law, the legal property in a thing ‘mancip’ could not pass. The mancipatio was that form of transfer which we find similar examples in the early history of most countries; and here the change is not in the essence of the thing transferred. No writing being required, it was necessary that there should be some evidence of the transfer, and such evidence was secured by the mode of transfer. In mancipatio it refers to lands, mancipated in its origin may be presumed to have been identical to the feu-fief with livery of seisin. [Feu-fiefment.]

There was another mode of alienating things ‘mancipi,’ by the form called in jure cessio, which, according to Ulpian, was the most usual mode of sale. This would appear to have been the same as that called in the mancipio was a fictitious action before a competent magistrate at Rome, or a praetor, or before a preces in a province. The purchaser claimed the thing as his, and the seller either acknowledged his claim or made no defence, upon which the praetor passed judgment. This form was in effect and was called ‘legis actio.’ (Gaius, ii. 24.) Its great resemblance to the fictitious suit formerly in use in our own system, called a Fine, might lead to the conjecture that the notion of a Fine was taken by the early Romans from the Bath, as Cicero says that there by a person to a great extent of the same size as a Fine. This hypothesis is exceedingly probable will be the more apparent, the further any person examines into the connection between the early English and the Roman Law. The fine of a praedor, otherwise called servituit, could be transferred in the case of lands in the county by the cessio in jure; but in the case of lands in the country, also by mancipatio. But this observation applies only to the cases in which some writers would refer as the origin of the Fine. Mancipatio, as Gaius observes (ii. 26), was more in use than the in jure cessio, inasmuch as it was easier to transact business of a few friends than to go before a praetor, or a praeses.

Every servitut (jura praediorum, otherwise called servituit) could be transferred in the case of the land in the county by the cessio in jure; but in the case of lands in the country, also by mancipatio. But this observation applies only to the case of the land in the country; and if the law of the Fine was taken from the Bath, as it appears to have been, it is evident that the transfer of a Fine by the cessio in jure was coincident with the transfer of the mancipatio, and, as a more general term, must contain the mancipatio; for the mancipatio does not contain the cessio. This would be consistent with Varro (De Ling. Lat.), who says that the meaning of ‘nexus’ is that it was transferred by the piece of money (cessio), and the cessio (esse et librum), which includes mancipation: but he adds that M. Scuvola considered ‘nexus’ to be everything transferred per as et libram, so as to thereby be freed, except things which were transferred by mancipatio. Thus
The definition of Scamova would exclude 'mancipatio' from the 'nexum', but would include a testamentary disposition, insomuch as that also was made per se et libram (Gaivs, ii. 103), and it would also include that form of marriage called coonmon bond. But if a sol is right, and this hardly be doubted, Cicero is wrong in the use of 'nexum', in the passage quoted. In the 'Orator' (iii. 39) he mentions both 'nexa' and 'mancipia' in his enumeration of the various subjects brought before the Centumvir. Assuming Scamova is correct, Cicero's usage of 'mancipium' is distinguished 'nexum' from 'mancipium' in the passage in the 'Orator'; and have used nexo with some inaccuracy in the passage from the 'Topica'.

MANCO CAPAC. [Panz.]

MANDAMUS is a writ by which the court of king's bench, in the name of the reigning king or queen, commands the party to whom it is addressed to do some act in the performance of which the prosecutor, or person who applies for or obtains the writ, has a legal interest; that is, not merely such an interest as would be recognised in a court of equity or in a court of ecclesiastical jurisdiction, but an interest cognizable in a court of common law; the right must also be one for enforcing which, if the court has jurisdiction, it has otherwise legal remedy. Thus, a copyholder can transfer or alien his customary tenement or estate [COPYHOLD] in no other manner than by surrendering it into the hands of the lord of the manor to the use of the pursuer without his making it his own. If the copyholder formerly took no notice of the right of the surrenderer to call upon the lord for a grant or admittance, and the court of king's bench therefore left the party to seek his remedy in a court of equity, and would not interfere by granting a mandamus, he becomes burdensome or burdensome, and the court of king's bench thereupon compulsory the action of the party, and admit the surrenderee is not merely an equitable liability, because this mode of transferring property of this nature is founded upon ancient custom, and rights dependent upon custom are matters of common-law cognizance. Of late years, the right of a king's bench appraisers to determine the view of the subject, and has awarded writs of mandamus in all cases where the lord has refused to admit the party to whose use a surrender of the copyhold has been made. Again, the duty of parishioners to assemble in vestry for parochial business; or of the vestry to be made by the court of king's bench, being without judicial knowledge on such subjects, has no jurisdiction. It is probable indeed that ecclesiastical cesses would formerly have been pronounced with less severity against the original delinquents than against those who should have attempted to bring such cases before a lay tribunal. Again, the court can by mandamus compel the visitor of an ecclesiastical foundation in the name of the court, and allow them any alternative, to do the act. When an answer is apparently sufficient, the mandamus is at an end; and if the statements are untrue, the remedy by mandamus is closed for such return, though in order to avoid expense and delay the party may be served by the statute 9 Anne, c. 20, and now in all cases by 1 Will. IV. c. 21, to enfranchise an action upon the mandamus itself by returning the return, i.e. by putting it in a plenum gratiam and ista legislation contained in (Conyn's Digest; Selwyn's Use Price; 1 Vict. c. 79.)

MANDARIN DUCK. [Duck, vol. i. p. 155.]

MANDARINS is the general name of the officers of state in China. They are chosen from the men or scholars from every part of the empire, who, having obtained their degrees and passed their examinations, have their names inscribed in a register kept by a court or board established for this purpose. When an officer in the administration is vacant, the court presents to the emperors a list of those whom they prefer and foremost among them on whom the monarch appoints one to fill up the vacancy. Sometimes when there are several candidates equally qualified, they draw lots for the vacant office. In Dubrovnik there were 13,600 mandarins all over the empire, according to the shorter of the two registers of the army. The civil mandarins are divided into nine classes, the highest of which, called 'Colons,' are ministers of councilors of the emperor, or presidents of the superior councils. The governors of provinces rank in the second class. The secretaries of the emperors and the governors of cities to the fourth class, and so on. Each order has its distinctive mark of dignity; the highest order wear a peacock's feather at the back of their capa et gratiam and act subordination among them.

Mandeville wrote also at this time in a paper called the 'London Journal,' which shared with the 'Fable of the Bees' the censure of the Middlesex grand-jury. He subsequently published a second part of the 'Fable of the Bees,' and several other works, among which are two, entitled 'Free Thoughts on Religion, the Church, and National Happiness,' and 'Commemoration of the Honour and the Usefulness of Christianity in War.'

We are told by Sir John Hawkins, in his 'Life of Dr. Johnson,' that Mandeville was partly supported by a pension from some Dutch merchants, and that he was much patronized by the first Earl of Shaftesbury, with whose table he was a frequent guest. He died on the 21st of January, 1723, in his sixty-third year.

The 'Fable of the Bees, or Private Vices Public Benefits,' as it is commonly called, is a satire on man and as a theory of society and national prosperity. So far as it is a satire, it is sufficiently just and pleasant; but viewed in its more ambitious character of a theory of society, it is altogether worthless. It is Mandeville's object to show that national greatness depends on the profligacy of individuals, and luxury; and for this purpose he supposes a 'vast hive of bees,' possessing in all respects institutions similar to those of men; he details the various frauds, similar to those among men, practised by bees one upon another in various ways—how the queen bee is carried off by the drones, how means of these frauds is turned, through luxurious habits, to the good of others, who again practise their frauds upon the wealthy; and, having already assumed that wealth cannot be gotten without fraud and cannot exist without luxury, he assumes further, that wealth is necessary for the preservation of national greatness. His hive of bees having thus become wealthy and great, he afterwards supposes a mutual jealousy of frauds to arise, and fraud to be by common consent dismissed; and he again assumes that wealth and luxury are the true and inseparable characteristics of the society. It is needless to point out inconsistencies and errors, such for instance as the absence of all distinction between luxury and vice, when the whole theory rests upon obviously false assumption; and the long dissertation with the moral reason for this nation having always, however strange the way in which he set about it, to promote good morals; for there is nothing in Mandeville's writings to warrant the belief that he sought to promote general vice.

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Mandingoes, a negro nation inhabiting the country on the banks of the rivers Senegal and Gambia, and that which extends farther eastward along the upper course of the Joliba or Guina. This country occupies the northern declivity of the mountain-range which extends between the Gulf of Guinea and the great desert of the Sahara, and which goes under the name of Kong. [Kongo] The Mandingoes constitute a considerable portion of the population of most of the small kingdoms which occupy that extensive territory lying between the Niger and the Senegal rivers. Others they live mingled with the Foolsah, Yellofs, Saravalli, Yariba, and others. Their language seems to be more spread widely than any other that is spoken in that part of Africa, as Mungo Park, on his return from the interior of Africa, and going from the west coast to Taffara and Ibbi on the Joliba, and found that it was understood as far west as Pisania on the Gambia, and even to Ijan-Jure or MacCarthy's Island (13° 03' N. lat. and 14° 43' W. long.).

The Mandingoes are distinguished among the negro tribes by their stature and some other characteristic features. They are generally above the medium size, well shaped, strong, and capable of enduring great labour. Their features are regular, their noses particularly prominent, and their lips not so thick as in other negro tribes, but their hair is woolly. Their colour is a good clear black, inclining to yellow. Golberryl thinks that the Mandingoes and the Foolsah, in the
features of their face, more resemble the Hindus, or blacks of India, than the other negro tribes of Africa.

The Mandingoos in the Wli Society are of the Fulahs; but Golbery thinks that they have retained many of the usages of the Fula as practised on the coast of Guinea by the negroes. As their language is so widely spread over the western countries of Africa, Mr. R. Maxwell Murray, who is a resident at the Mission of the Wesleyan Missionary Society, has done good service in lately publishing a grammar and vocabulary of this tongue. The Gospel of St. Matthew has also been recently printed in Mandingo by the British and Foreign Bible Society from a translation by Mr. Murray.

The Mandingoos generally live on the produce of small spots of ground which they cultivate, and by the chase; but a considerable number apply themselves to commerce, and evince great shrewdness and activity in trade. Their habits and dress are similar to those of the other West African tribes, they eat and dye it with indigo, a plant which is indigenous in their country; they have also attained some skill in tanning leather, and in smelting and working iron.

(Mungo Park's Travels in the Interior of Africa; Golbery's Travels in the Interior of Africa; A Description of a Mandingo of Nydmi-Maru, in Lond. Geogr. Jour., vol. viii.)

MANDOLINE, a musical instrument of the lute kind, but smaller, having four strings, which are tuned as those of the violin. The mandoline is still met with occasionally in Italy, and is a favorite instrument in the concert-room of Europe.

MANDORE, a musical instrument of four strings, of the lute kind, no longer in use under that name.

MANDRAKE. [Arotopa.] (Baboon, vol. iii., p. 231.)

MANGAHI, or Mongol, a nation of Asia who originally inhabited the mountainous country which extends along the northern boundary-line of Corea as far north as the river Songari, an affluent of the Amur. The Mandshoo belong to a widely-spread race, which is generally known under the name of Tunguses. This race is found to the east of a line drawn from the most north-western angle of Corea to the Yalu Pass of the Khing-khan range (49° N. lat.), and thence north along the northern extremity of the lake of Bajkal, and on the west of the Amur river at the Bay of Katangas. From this line they spread eastward to a line drawn from Hokhotz to the mouth of the river Lena. This race differs considerably from the Mongols, who inhabit the country further west, in the form of their body, being tall and slender. The language of all the tribes of this race have a great similarity in words and construction; and it appears that there is a relationship between them and the language of the Mongols and Turks, as well as some languages of Eastern Europe, especially that of the Lithuanians.

The Mandshoo, the most southern of the Tunguse tribes, have risen into great importance during the last two centuries by the conquest of China, and by seating their royal family on the imperial throne of Peking. They began their empire with singular success. His family still occupies the throne of China. As the Mandshoo are a comparatively small tribe, and have to govern and to keep in subjection the immense population of China, the court of Peking has shown great political sagacity in adapting every means for strengthening the most distant tribes into their own. All individuals belonging to these tribes are in China considered as native Mandshoo, and admitted to the privileges of the conquering nation. A great number of Tungus families established themselves along the shores of Baikal, and have accordingly abandoned that country, and emigrated to Manchouko and China, where they serve as soldiers and attend military honours. The civil employments are reserved for the native Chinese, as well as the administration of the manners, institutions, and laws of the country.

(Du Halde's History of China; Klaproth's Asia Polyglotta; Ritter's Erdkunde von Asien, vol. ii.)

MANDSHOORIA now constitutes a government of the Chinese empire under the name of Kink-ool, or Chin-ool. It is the most eastern projection of the high lands of Central Asia, and lies between 120° and 142° E. long. Its surface is estimated at 6,500,000 or 7,500,000 square miles, which is more than three times as extensive as that of Spain and Portugal, from which it is separated by a mountain-range, the Yablonoi Khrebet of the Russians, or the Khing-khan Tsang-wick of the Chinese. On the west it is divided from the Russian province of Da-auria by the river Kerlon, an affluent of the Amur, and on the east by another mountain-range called Khing-khan-ool. On the south it joins the Chinese provinces of Pe-cheli and Liao-tunc, the latter of which formerly belonged to Mandshooria, and has only been detached from it since the present imperial conquest, which extended the thousand miles to Corea, from which it is divided by the Tsii-yung-shan and 1 Shan Alin, a high range; and farther north the Sea of Japan and the Gulf of Tartary, which separate the large island of Tarakai from Mandshooria. A very considerable portion of the country has been visited by Europeans. The Jesuits who were sent by the emperors to survey the country visited the mountainous tract contiguous to the Tsii-yung-shan as far as Ninguta; and some Russian emissaries traversed the country along the eastern declivity to the Khing-khan-ool. The remainder is almost entirely unknown.

Mandshooria may be considered as an immense valley enclosed by high and steep mountains, except at its southern extremity, where there is a broad and rather hilly tract which divides it from the province of Liao-tunc. The chain of the Khing-khan-ool, which forms the western boundary, seems to be the highest. Towards its southern extremity, between 42° and 43° N. lat., is the peak of Pekta, which rises nearly 15,000 feet above the sea. There are other elevated and snow-capped summits further north. The Yalo Pass, the only one traversed by Europeans, is near 49° N. lat., and even in April is covered with deep snow. The mountain-region of the Yablonoi Khrebet does not attain the snow-line; and its mean elevation probably does not exceed 2500 or 3000 feet above the sea-level. Along the Gulf of Tartary the coast is formed by an exceedingly steep mountain-range, rising to 4000 or 5000 feet, and coming close up to the sea, so that only a few level spots can be found between the mountain-chains and the water. On the eastern declivity of this range there is a tribe which seems to belong to the same race as the inhabitants of Japan: they are called Ainos or Kochen, and live on the produce of their fishing. This mountain-range seems to offer no passage, as the Ainos have no intercourse with the Mandshoo, who inhabit the country west of the range. At its southern extremity (43° N. lat.) this mountain-range is probably connected with the Shan Alin and its continuation the Tsii-yung-shan, which appears to be a part of the westernmost division of the mountain-system which extends from the Hoang Hai, or Yellow Sea, in a long promontory, the most southern extremity of which is called the Keppat Sword. The large mountain-mass of the Shan Alin rises above the snow-line.

The island of Mandshooria contains, towards its southern extremity, an extensive and nearly level plain, called Cernchin. It lies on both sides of the Siren-Muren, or Lena, and seems to stretch northward to the banks of the rivers Nonni-ool and Songari. It greatly resembles the desert of the Gobi, which is only separated from it by the Khing-khan-ool, being mostly covered with sand, and having no water, or only salt lakes; but the grassy spots are more common and more extensive here than on the Gobi, and afford better pasture to the numerous cattle of the Mandshoo tribes, which are kept by the inhabitants, which is also called the Eastern Gobi. In some parts the surface is covered with salt inerustations. The remainder of Mandshooria is supposed to consist of a succession of valleys and mountain-ranges of various elevation. In the mountain regions of the Mandshoo the rivers are nearly 500 or 600 feet in altitude. The valleys are said to be fertile, and wide along the principal rivers south of the Amur river, and so far it appears that agriculture extends. But that large part of the country which extends from the most eastern river in the Yablonoi Khrebet is too cold for agriculture, and its inhabitants live on the produce of their herds and of the chase.

Though the climate of Mandshooria is not equal in severity to that of the Gobi, it must be very cold, as we may infer from its geographical position and its elevation.

The principal river is the Amur, which has runned...
tributaries. [Amur.] Through the southern districts runs the Sira-Muren or Leao-Ho, which flows about 500 miles; it rises in the Khing-han range north of the Peak of Pech, and runs for nearly 400 miles east, and the remainder of its course south, till it falls into the Gulf of Leao-long. It seems to be navigable nearly up to the place where it turns to the south-west.

Agriculture is common south of the river Amur. Wheat, rye, barley, and buckwheat are cultivated extensively, as well as hemp and cotton. The forests, which cover the greatest part of the surface, are partly composed of oak and lime-trees, and partly of different kinds of pines, fir, and birch.

On the mountains towards Corea the rhubarb and the ginseng grow in abundance; both are collected by the natives, and constitute, with Mandshoori, principal articles of export. All domestic animals common to the countries of central Europe are kept in considerable numbers; there are also reindeer in the districts north of the Amur, and camels in many places south of it. Wild animals are numerous, especially those that yield fur, in the forests which clothe the eastern declivity of the Khing-han, where sables, ermines, bears, wolves, and foxes are found. Among the wild animals peculiar to this and the neighbouring countries are the argali and the daghigetai. Fish abound in the rivers, especially the sturgeon and salmon. Peas are said to be found in some of the streams.

The mineral riches of Mandschuria are not known.

The population is very vaguely estimated at two millions, but it is probably much under-rated. All the people, with the exception of the Mongols, are Chinese. They are included in the race of the Tungusicans. [Mandschur.] The most widely spread tribe is the Proper Tungusicans, who seem to occupy the whole or nearly the whole country north of the Amur, and also the greatest part of that between the Nonni-pol and the Tungusa. The Manchus, though not the most numerous of the tribes, are the most important, their sovereign family having ascended the throne of China. [Mandschur.] They are agriculturists, but pass a great part of their life in hunting. Many Chinese families have settled among them, and have improved their modes of cultivation.

The government of the province resides at Gihirn-oala, a place of some importance. Ninguta, on the Hurka Pira, an affluent of the Sungari river, is the ancient residence of the Mandchous, and is held in great veneration by the court of Peking and the whole nation. Other towns of some importance are Naun-koten, on the Nonni, and Sakhalien, on the Amur.

(Du Halde, History of China; Broughton’s Voyage of Discovery in the Northern Portion of the Pacific Ocean; La Perouse’s Voyage round the World; Ritter’s Erdkunde von Asien, vol. i.)

MANES, the name given by the Romans to souls separate from the body. According to Apuleius (De Deo Sacrat.), they were originally called lemures, and were divided into two kinds, lares and larves; the former being the souls of such persons as had lived virtuous lives, and the latter of such as had been wicked; but that afterwards the word was appropriated to the domestic deities in Roman religion, is shown by Cic. Dei, ix. 11.) gives a somewhat different account: he says that the souls of good men became lares, those of evil men lemures or larves, and those respecting whom it was uncertain whether their virtues or vices most predominated, became Larves. According to these accounts, and to a passage in Virgil (Aen., ix. 358-9), the laris were considered by the Romans as the manes of their ancestors.

The etymology of manes is uncertain; it is generally derived, by antient grammarians, from an old word, manus, hand, whose derivatives are still preserved in our words called Eumenides by the Greeks. Some considered the manes as the good and bad genii which accompanied a man through his life; but this notion appears to have been introduced by the later Platonists.

The laris and larves, and their funeral tours were generally inscribed with the letters D.M.S., that is, Dis Manibus Sacrum, ‘Sacred to the Manes Gods.’ There are many specimens of such funeral inscriptions in the Townley Gallery, British Museum. The term ‘gods, applied to the manes, would appear to imply a kind of dedication of departed souls. If such is the fact, it would be a curious matter of inquiry to ascertain when the manes were first honoured with the title of ‘dei’ or ‘gods.’ The things which were left or belonged to the Dii Manes were Religious; those consecrated to the Dii Superii were called Sacrae. (Gaius, ii. 4.)

It was the duty of the Pontifex Maximus to see that the manes were propitiated by proper ceremonies (Liv., i. 209); and with this object it was usual to pour libations of wine on the funeral mals, and also sometimes to slaughter animals, especially such as the deceased had been fond of. (Plin., Ep., iv. 2.)

MANETHO (Μανεθων, Μανεθωντος, Μανοθωνος, Μανοθώνος) is a celebrated Egyptian writer, a native of Douspolis, who is said to have lived under the time of Ptolemy Philadelphus at Mende or Heliopolis, and to have been a man of great learning and wisdom. (Aelian, De Animal., x. 16.) He belonged to the priest caste, and was himself a priest, and interpreter or recorder of religious usages and of the religious and probably also historical writings (ἱστοργραφήτης). It appears probable however that there were more than one individual of this name; and it is therefore doubtful whether all the works which were attributed by antient writers to Manetho were really written by Manetho who lived in the reign of Ptolemy Philadelphus.

The only work of Manetho which has come down to us complete is a poem, in six books, in hexameter verse, on the influence of the stars (αστερολαξία), which was first published by Grote. Later, this work was translated into Latin by Axius and Rigler, Cologne, 1832. It is probable however, for many reasons, as Payne has shown in his ‘Opuscula Academica,’ that parts at least of this poem could not have been written till a much later date. We also possess a Latin translation of a portion of the ‘Chronica’ of Manetho, which was published by Lexer in his ‘Chronica’ of Julius Africanus and Eusebius, bishop of Cesarea, both of whom made great use of Manetho’s ‘History.’ The work of Africanus is lost, and we only possess a Latin version of that of Eusébius, which was translated into Arabic by Ahmad ibn al-Nadim, and the text preserved at Constantinople. Manetho derived his history of the kings of Egypt, whom he divides into 32 classes, called dynasties, from the sacred records in the temple of Heliopolis.

In addition to these works, Manetho is also said to have written:—1, ιδίω βιβλίον on the Egyptian religion; 2, βιβλίον τῆς Σωτῆς, the subject of which is doubtful; 3, Πολύ Μνημονικαί και Ναυτηριακαί, on the ancient rites and ceremonies of the Egyptians; 4, Φυσικά Ιστορίες (Lact. Proven., s. 10), which would probably be the same work as that called by Suidas φιλολογός.

It is no easy matter to ascertain the real value of Manetho’s ‘History’ in the form in which it has come down to us. The reader may judge of the use that has been made of it for Egyptian history by reading J. R. Green’s ‘Agyptische Zeitrechnung’ (Alton, 1830), to the works of Champollion, Wilkinson’s ‘Topography of Thebes,’ and the other authorities which will be indicated by a reference to these works.


MANETTI, IACOPO CORDIFO/LIA is a Brazilian twin poem, whose roots possess considerable erotic energy. The book is administered in Brazil in powder, in doses of $3$ to $14$ drachmas, and is considered a most valuable remedy in dropy and dysentery. (Lindley’s Flora Medic, p. 332).

MANELLE. [Εγυπτ.]

MANFREDI, natural son of the emperor Frederick II. and of a Lombard lady, was appointed by his father, at his death, A.D. 1250, regent of the kingdom of the two Sicilies, until the arrival of his brother Conrad, the illegitimate
MANGESE. A metal of which the black oxide, or man-
gano, was first described by Schoeelle in 1774, and was
found in a peculiar metal, which has so powerful an affinity for oxygen, that
it frequently occurs in minerals in such small quantity as to show that it exists in them rather in mixture than
combination.

Manganese may be procured by mixing any of its oxides
with oil, and heating it strongly in a well-covered crucible.
Its properties are, that it has a greenish-white colour and
resembles white cast-iron in appearance; it is hard, brittle,
and has a fasciated crystalline structure; its specific
gravity, according to Berthier, is 7.05; it is inodorous and
is usually found in the earth as oxide of iron, it frequently occurs in minerals in such small quantity as to show that it exists in them rather in mixture than combination.

The ores of manganese are chiefly oxides: they are the following:—

Hausmannite.—Ores crystallized in octahedrons and
massive. Primary form a square prism. Cleavage para-
parallel to the base of the primary form. Fracture uneven.
Hardness rather greater than that of phosphate of lime.
Colour brownish-black. Powder reddish-brown. Lustre
imperfect metallic. Opaque. Specific gravity 4.72.

Before the blow-pipe with borax fuses into an amethyst-coloured glass. It is found in Sweden, in Thuringia, at
Frankfort, and in Pennsylvania, &c.

Dr. Turner's analysis gives very nearly—

| Manganese | 70.98 |
| Oxygen   | 27.33 |
| Sulphur  | 0.34  |
| Sulphates | 0.11  |
| Water    | 0.12  |

The equivalent of manganese being 28, this ore is essen-
tially a compound of 3 equivalents of metal 84.4 + 1 equiva-

tles of oxygen 32 = 116. It contains less oxygen than the
other oxide except the protoxide, which does not occur
nature except in combination.

Braunite.—Ores crystallized and massive. Primary
form a square prism. Cleavage distinct, parallel to the face
of an octahedron. Fracture uneven. Brittle. Colour brownish-black. Streak the same. Lustre
imperfect metallic. Opaque. Specific gravity 5.08.

The massive varieties are divergingly fibrous.

Before the blow-pipe melts and effervesces slightly with
borax.

It is found at Eigenberg, Wursinbel, Piedmont, and
Cornwall.

According to Dr. Turner, it consists very nearly of—

| Manganese | 67.76 |
| Oxygen   | 29.03 |
| Sulphate | 0.79  |
| Water    | 0.95  |

It is essentially an anhydrous sesquioxide of manganese,
consisting of 1 equivalent of metal 28 + 1 equivalent of
oxygen 32 = 40.

Manganite.—Ores crystallized and massive. Primary
form a right rhombic prism. Cleavage parallel to the

Manfred was the son and heir of Frederic. Pope Innocent IV. excom-
municated Manfred, and declared that the dynasty of
Susinia had forfeited the crown of Sicily in consequence of
Frederic having revolted against the see of Rome, whose
feudatory he was. Upon this, most of the towns of Apulia
revolted against the authority of Manfred. Conrad, the
brother of Frederic, had left for Germany, and Manfred
soon induced the rebels, but he died in the midst of his successes, in
1254, leaving an only son in Germany, Corradino, then a child two years old. Manfred became again regent of the
kingdom in the name of his nephew, and as such he ruled over the
people, who soon revolted, under whose baronial house of San
Severino stood foremost. The city of Naples opened its gates to the pope and swore allegiance to him; but Manfred
fled from his father's faithful subjects at Lucera. Upon the
death of Innocent, the papal power was tacitly accepted, and
Manfred recovered possession of Naples, and cleared the
kingdom of the invaders. A report being spread that
Corradino had died in Germany, the barons, prelates, and
towns of the kingdom invited Manfred to ascend the
throne, and he was crowned at Palermo in 1258. On
his return to Apulia, he found messengers from Margaret,
Corradino's mother, who informed him that his nephew
was still alive, and they claimed his inheritance in his name.
Manfred went on the campaign, but died in presence of
the envoy that as he had no male issue, the crown should at his death devolve on his nephew or his nephew's
heirs. No one presumed to gain Manfred's words: he was
brave, high spirited, and handsome, and the idol of the
people, who delivered him from the power of invaders, and his illegitimate birth was no longer remembered.
Margaret herself tacitly assented to his retaining the
crown upon such conditions: her son was but a boy, and had a fair prospect of succeeding its uncle in due time.

To crown Manfred's good fortune, Pope Alexander III.
made peace with him. Manfred was now looked upon as
the hereditary protector of the Gueldines of North Italy,
and sent troops to the assistance of those of Tuscany,
who defeated the Guelphs at Montepulciano, and occupied Florence. The Gueldines of Flanders, however, were
reinforced by Urban IV., an inveterate enemy of the Gueldines and
of the House of Susinia. The new pope began by excom-
municating Manfred, treating him as a usurper, and offering
the crown of Sicily for sale among the princes of Europe.
He offered it to Richard, earl of Cornwall, brother to
Henry III. of England, who laughed at the proposal, and
said 'it was like making him a present of the moon.' Urban
then offered the crown of Sicily to Henry himself for his
second son Edmund, but the English king had neither
time nor money to enforce such a claim. At the same
time the pope addressed himself to Charles, count of Anjou, brother of Louis IX. of France, who accepted the offer in 1264: the
conditions were, that he should receive the crown of Sicily
as far as the sea coast, and pay two twents of a thirtieth
of the income of gold and a white horse, surrender to the pope
the right of nominating to all the sees of the kingdom, and
grant an appeal to Rome on all ecclesiastical affairs. After
concluding this bargain, Urban died, but his successor
Clement IV. followed up his policy. Charles bartered
selected an army of his Provengal vassals and of French
adventurers, came to Rome, where he was solemnly crowned
by Clement in 1265. In January, 1266, he marched
from Rome, and entered the dominions of Manfred, who met
him with 15,000 foot, 1,500 horse, and a powerful
squadron. The battle took place in the month of February. Manfred's faithful
Saracens fought bravely, but being unsupported by the
Apulian troops, who refused to advance, they were thrown
into disorder, and Manfred, seeing himself betrayed, spurred
his horse, and leaped into the sea, and was drowned.
The body was dragged as far as the frontiers of Abruzzo,
where it was allowed to rest on the banks of the river Verde, an
affluent of the Tronto, near Ascoli. Dante, in pathetic and
as the same time dignarst strains, alludes to this disgrace-
ful fact of fanaticism ('Purgatorio, canto ix.).

Manfred was fond of letters, was himself a poet, and is
praised by the Neapolitan chroniclers for his great and
noble qualities. The Gueld writers, on the contrary, have
accused him of horrible crimes; among others, of
parricide and incest. This tradition has preserved the remembrance
of him as a dark and mysterious character. Manfred was
the founder of the town of Manfredonia.

MANFREDONIA. (CAPITANATA.)

Baba. A town in Apulia, of which must bear a name of monkeys be-
MANGALORE. (HINDOSTAN.) p. 207).
Sulphur is also found in combination with manganese. The compound is called

Fuses with difficulty and only the edges with the blow-pipe; gives sulphuretted hydrogen when dissolved in an acid.

It is found at Nagyag in Transylvania, and in Mexico. Analysis by Artwedden—

<table>
<thead>
<tr>
<th>Material</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese</td>
<td>62%</td>
</tr>
<tr>
<td>Sulphur</td>
<td>37%</td>
</tr>
</tbody>
</table>

99.6

Manganese occurs also in combination with some metals and oxides.


Dr. Kane found it to consist of—

<table>
<thead>
<tr>
<th>Material</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese</td>
<td>45.3%</td>
</tr>
<tr>
<td>Arsenic with a trace of Iron</td>
<td>51.8%</td>
</tr>
</tbody>
</table>

97.3


It occurs in Bohemia and Chili.

Analysis by Kersten—

<table>
<thead>
<tr>
<th>Material</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxide of manganese</td>
<td>74.10</td>
</tr>
<tr>
<td>Oxide of copper</td>
<td>4.00</td>
</tr>
<tr>
<td>Water</td>
<td>20.10</td>
</tr>
<tr>
<td>Sulphate of lime</td>
<td>1.05</td>
</tr>
<tr>
<td>Silica</td>
<td>0.30</td>
</tr>
</tbody>
</table>

100.35

Carbonic acid and silica also occur in combination with oxide of manganese, and the latter also with oxide of manganese and iron.


Found at Hartshill in Warwickshire, Nagyag, Freyberg, &c.

Analysis of the carbonate from Nagyag by Berthier—

<table>
<thead>
<tr>
<th>Material</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbonic acid</td>
<td>38.6</td>
</tr>
<tr>
<td>Peroxide of manganese</td>
<td>56.0</td>
</tr>
<tr>
<td>Lime</td>
<td>5.4</td>
</tr>
</tbody>
</table>

100.


It occurs in Sweden, the Harz, Devonshire, Cornwall, &c.

Analysis by Berzelius—

<table>
<thead>
<tr>
<th>Material</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silica</td>
<td>48.0</td>
</tr>
<tr>
<td>Oxide of manganese</td>
<td>49.04</td>
</tr>
<tr>
<td>Lime and magnesia</td>
<td>3.34</td>
</tr>
</tbody>
</table>

100.38

Leonhard has described some silicates of manganese under the names of **allahite, phoixite, rhodonte, &c.**, which contain admixtures of various other substances.
Silicate of Manganese and Iron: Knebelite.—The locality of this is not known. It occurs massive. Externally cellular and uneven. Fracture imperfect conchoidal. Lustre glistening. Colour grey; spotted dirty-white, red, brown, and green. It is opaque, hard, and brittle. Specific gravity 3.714.

Analysis by Döbereiner—
Silica ... 39.5
Protoxide of manganese ... 33
Protoxide of iron ... 33
99.5


Analysis by Berzelius—
Phosphoric acid ... 32.8
Oxide of manganese ... 32.6
Oxide of iron ... 31
Phosphate of lime ... 3.2
100.5

Two other varieties have been described under the name of Heterosite and Huradite.

Having now noticed the more important manganese ores, we proceed to mention the action of other elementary bodies upon this metal, and first the artificial compounds of it.

Oxygen and Manganese.—It has been already mentioned that this metal falls to powder by oxidation, even by exposure to the air, and the oxide thus formed appears to be the red oxide of manganese; the native compound has been already described under the name of haussmannite. The protoxide of manganese exists in nature only in combination, forming the carbonate of manganese, also mentioned.

Protoxide of Manganese may be artificially procured in two or three ways:—1st. When the peroxide of manganese is strongly heated in a crucible, it is a perfect agent for the purpose of obtaining oxygen gas; green protoxide of manganese will sometimes remain, though it is in general the red oxide which is thus obtained; 2nd. The protoxide may be obtained by passing hydrogen gas over any higher oxide, but the red is to be preferred as containing the least oxygen; 3rd. By mixing chloride of manganese with twice its weight of carbonate of soda, and heating the mixture in a platina crucible, and afterwards dissolving out the chloride of sodium formed with water.

The properties of protoxide of manganese are:—It is of a light green colour. It undergoes no change by exposure to the air. It is insoluble in water. When heated to 600° it acquires oxygen, and is converted into red oxide; and sometimes, by exposure to a strong heat, it undergoes combustion as well as oxidation. It combines readily with acids, and dissolves in them, even when dilute and cold, without effervescence; and the solutions are colourless. It is this oxide which is the base of all the common salts of manganese; indeed it is questionable whether any other oxide acts as a base. When this oxide is precipitated from solution by an alkali, it forms a white hydrate, which speedily loses water and acquires oxygen by exposure to the air, and becomes deoxidised. It is composed of—

One equivalent of oxygen ... 8
One... manganese ... 29

Equivalent 36

Red Oxide of Manganese: Haussmannite, already described.—It is artificially obtained by submitting either the protoxide, sesquioxide, or peroxide of manganese to heat in a platina crucible; the first acquires and the two last lose oxygen by this process; in fact, whatever oxide or salt of manganese is strongly heated, it is decomposed and converted into this, and remains permanently such unless some additional deoxidising agent be employed. It suffers no change by exposure to the air, is insoluble in water, and has a reddish colour. The nitric, sulphuric, and hydrochloric acids all decompose it, the two first separating it into protoxide and binoxide; and they dissolve the first and leave the second insoluble. With hydrochloric acid it yields a chloride and chlorine. It is composed of—

Four equivalents of oxygen ... 32 or 16/6; 1 eq.
Three equivalents of manganese 84 28 1 eq.

Equivalent 116 38/6

Sesquioxide, Deutoxide of Manganese.—The nature has been described under the name of manganite. It may be artificially procured in the mode just alluded to, by decomposing a protosalt with an alkali, and exposing the precipitate to the heat, or by cautiously mixing protoxide or carbonate of manganese: in the former case, oxygen is expelled, and in the latter carbonic acid is expelled and oxygen absorbed; it may further be obtained by decomposing the nitrate with heat. Its properties are:—It is brown, except when obtained from the nitrate, and then it is nearly black. It is insoluble in water, suffers no change by exposure to the air, is decomposed by dilute nitric and sulphuric acids, being separated from them into protosalt, which they dissolve, and peroxide, which remains insoluble. It is said to be soluble in strong sulphuric acid without decomposition; with hydrochloric acid it yields chlorides and chloride of manganese.

It is composed of—

One and a half equivalent of oxygen ... 12
One equivalent of manganese ... 28

Equivalent 49

Varvietie.—This has not been obtained by artificial means.

Binoxide or Peroxide of Manganese: Pyrolusite.—The may be formed artificially by decomposition either the red oxide, sesquioxide, or varvietie by means of dilute sulphuric acid; the peroxide is then separated into protioxide and binoxide, which remains insoluble. It may also be prepared by adding chloride of lime to a solution of chlorides of manganese, in which case it is thrown down in the state of a black powder.

In its properties:—It is black, or brownish-black, unalterable in the air, insoluble in water, decomposed by heat into red oxide and oxygen gas, insoluble in alkalis, unsaturated upon nitric acid or dilute sulphuric; but by the last acid, it is concentrated, resolved into protioxide and oxygen gas, and is therefore sometimes used for preparing the protosalt and oxygen. With hydrochloric acid it gives protochlorides and chlorine.

It is composed of—

Two equivalents of oxygen ... 16
One equivalent of manganese ... 29

Equivalent 44

Of the five oxides of manganese it will appear that three are resolvable, by the action of dilute sulphuric acid, into definite compounds of the protioxide and binoxide, thus:

One equiv. of sesquioxide = 3 + 2 = 1 + 1
" red oxide = 4 + 3 = 2 + 1
" varvietie = 7 + 4 = 1 + 3

And in point of fact some chemists consider them to be rather compounds of other oxides than as constituting peculiar oxides. There are two acids of manganese which are entirely artificial compounds, namely, the manganese acid, and per- or, more properly, the hyper-manganic acid.

Manganic Acid has not hitherto been obtained in a separate state; but manganite of potash is easily prepared by heating in a silver crucible one part of powdered binoxide of manganese and two parts of potash. When the mixture has been kept at a dull red heat for an hour, it may be poured out, and when cold put into a bottle and excluded from the air.

The manganate of potash thus obtained is of a green colour. During the operation of the heat a portion of the binoxide yields oxygen to the other, which is thus converted into manganic acid, and this, united with the potash, forms the salt in question, which has long been known by the name of manganic acid, on account of the change of colour which the solution undergoes: on the first addition of cold water a green solution is obtained; this soon becomes blue, purple, and red, and ultimately brown; when, by cautiously pouring in the cold, the solution is rendered colourless. These changes are produced more quickly by employing hot instead of cold water; they are
owing to the conversion of the mangante into red hyper-
mangante of potash, the varied tints being derived from a
mixture of these two salts.

By keeping a strong solution of the green mangante of
potash to subside, and allowing the clear liquor, when poured
off, to evaporate in vacuo, a clear hydrosulphuric acid, the salt
obtained in crystals, which are amorphous and permanent
in their dry state, but must be kept from the contact of
organic matter, which speedily deoxidizes the acid.

Mangante is composed of—

<table>
<thead>
<tr>
<th>Equivalent</th>
<th>One equivalent of mangante</th>
<th>Three equivalents of oxygen</th>
</tr>
</thead>
<tbody>
<tr>
<td>52</td>
<td>28</td>
<td>34</td>
</tr>
</tbody>
</table>

**Hypermangante Acid.**—This may be prepared by several
processes. Mix together four parts of finely-powdered bin-
dioxide of manganese, three parts of a half of chlorate of potash,
and five of hydrate dissolved in a small quantity of water.
Evaporate the mixture to dryness, and heat it to dull red-
ness in a platina crucible. The mass is to be added to
a large quantity of boiling water; and when separated from
the residual oxide of mangante, to be quickly evaporated
and allowed to crystallize; the crystals are to be washed
with a very little boiling water, and are of a very deep
colour.

Hypermangante acid is may be obtained in a separate state
by decomposing the baritic salt with dilute sulphuric acid.
It has a fine red colour, and is rapidly decomposed by
organic matter, as paper or linen. It bleaches coloured
matter; the aqueous solution begins to decompose when
heated to 80°, and is totally decomposed at 212°; oxygen is
given off on exposure of mangante. Its salts are more permanent
than the acid, and when heated they yield oxygen gas, degradate,
when thrown on burning charcoal, and detonate violently with phosphorus.
A very minute portion of hypermangante of potash imparts
a very rich purple to a large quantity of water.

Hypermangante acid is composed of—

<table>
<thead>
<tr>
<th>Equivalent</th>
<th>One and a half equivs. of oxygen</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>32</td>
</tr>
</tbody>
</table>

**Chlorine and Mangante form two compounds. The pro-
tochloride may be prepared by dissolving any pure oxide in
hydrochloric acid, and evaporating the solution to dryness.
It is a pink-coloured lamelated mass, which attracts moisture readily
from the air, and is very soluble in water, forming a solution which is
nearly or quite colourless.

It is composed of—

<table>
<thead>
<tr>
<th>Equivalent</th>
<th>One equivalent of chlorine</th>
</tr>
</thead>
<tbody>
<tr>
<td>64</td>
<td>36</td>
</tr>
</tbody>
</table>

**Perchloride of Mangante is prepared by the mutual de-
composition of hydrochloric and hypomangante. It is
a greenish-coloured vapour, which, by cooling to 4°, con-
denses into a greenish-brown-coloured fluid. When it
comes into contact with moisture it resolves again into
hydrochloric and hypomangante acids.

It is composed of—

<table>
<thead>
<tr>
<th>Equivalent</th>
<th>One equivalent of manganese</th>
</tr>
</thead>
<tbody>
<tr>
<td>154</td>
<td>126</td>
</tr>
</tbody>
</table>

**Sulphur and Mangante may be combined by heating a
mixture of sulphur and the binoxide. Sulphurous acid gas is
evolved, and a greenish-coloured acid is formed when dissolved in acids.
It may also be prepared by the addition of a hydrosulphate to a sulphate
of mangante. It is then precipitated in combination with water, which modifies the colour.

It is composed of—

<table>
<thead>
<tr>
<th>Equivalent</th>
<th>One equivalent of sulphur</th>
</tr>
</thead>
<tbody>
<tr>
<td>44</td>
<td>16</td>
</tr>
</tbody>
</table>

According to Berzelius mangante combines with several other
metals, as gold, silver, copper, tin, and iron; with the last-mentioned combination takes place readily, and the
iron is rendered harder, whiter, and more brittle by it; and
it is stated that iron which contains mangante is best
adapted for making steel. A small quantity of iron causes
mangante to obey the magnet, and renders it less oxidable.

The salts of mangante are compounds of very little im-
portance. As that which is most readily obtained in a pure
state, and as offering a type of the soluble salts of this
metal, we will mention the

**Sulphate of Mangante.**—This salt may be obtained by
dissolving the precipitate or carbonate in dilute sulphuric
acid; a solution is obtained which is nearly colourless, or
sometimes of a slight pink colour, owing to the presence
of a little hypermangante acid. By evaporation colourless
rhombic crystals are obtained, which have a bitter taste,
deposit in a dry state, and are soluble in about two
and a half times their weight of water.

This salt is decomposed by the alkalis, ammonia, potash,
and soda, which precipitate colourless hydrated protioxide;
and by the carbonates, which throw down white protocar-
bonates of mangante and, after acquiring oxygen and a
brown colour, and are converted into deoxide. Ferrocyanide of potassium gives a white precipi-
tate, and hydroxysulphuret of ammonia an orange one. Mang-
ante is not precipitated in the metallic state by any other
metal.

Oxide of mangante tinges glass of an amethystine
colour.

The oxides of mangante, and especially the binoxide, as
containing most of the iron-extracted in the manufac-
ture of chlorine (CHLORINE) for the manufacture of bleaching-powder, or chlorite of lime. It is employed in
glass-making to correct the yellow colour which oxide of
iron is apt to impart to the glass; it is used also in making the
black enamel of pottery. Sulphate of mangante has also
been used within a few years to give a brown colour in
calico-printing.

**MANGE, an eruptive disease to which many domestic
animals, and particularly dogs, are subject. It usually
occurs as the result of dirt and damp, or deficient food,
or some other circumstances producing a generally
unhealthy condition. It has many analogies to the
itch in man (IRCH); and the fluid discharged from the
eruption of the mange in horses and dogs has sometimes
been known to produce the true mange of the horse. It
appear to depend in general on the presence of a minute
species of Acarus which burrows beneath the skin, and
thus excites the irritation and itching by which these
diseases are peculiarly characterized.

**MANGEL, a native of Rangoon, is proposed by Messrs. Wight and
Arnott to be formed into a distinct species.**

**MANGIFERA, a genus of trees of the natural family
**

**Terebinthaceae, tribe Anacardice, so called from the
Malayan name (mangga) of the fruit, and fero, I bear. Three
or four species of this genus are enumerated: as M. foetida
of Mauritor, a native of Ceylon and Molucca; M. laevis, indigenous in Mauritius; and M. syzygica, of
Roxburgh, a native of the hilly districts bordering on
Sillhet, where it grows to a great size, and is called
bebhenamum. It bears a fruit which ripens in February
and March, and is esteemed not only fit for food, but
edible even as a bad mango. It is also dried and kept
by them for medicinal purposes. M. oppositifolia, Roxb.,
a native of Rangoon, is proposed by Messrs. Wight and
Arnott to be formed into a distinct species.**

**The mango tree (Mangifera indica) is a tree of the long,
hard, and thorny, with a pleasant rosiness smell. The
flowers are yellow-coloured and small, but produced in
large numbers, on large terminal erect panicles. Many
perfect male flowers are often found intermixed with
the hermaphrodite ones. Calyx five-veined. Pedals five,
five-lobed, twice the length of the calyx, furnished in the
inside with a lobed glandular scale or crest. Stamen
a single fertile one, with three or four filiment-like bodies,
which represent the abortive stamens. Ovary with its base
immersed in the torus, obliquely oval, one-celled, with
a single ovule attached to the side of the cell. Style one, use


MAN

the upper edge of the ovary, curved downwards. Drupes oblong, or somewhat kidney-formed, also a little compressed like a kidney, fleshy, with a smooth rind, yellow or reddish when ripe, size various, but in general about as large as a goose's egg. Nut conformable to the drupe, but more compressed, woody, one-celled, two-valved, covered on the outside with many fibrous filaments, particularly in the worst sort. The kernels are large. Embryo between these and transverse. Cotyledons thick, fleshy. Radicle opposite to hilum.

The Mango is so well known as one of the most highly esteemed fruits of the East, that one is surprised to find it sometimes passed over like a nothing; it is so much a nosegay of tow and turpentine. The latter is a secretion abounding in the family to which the Mango belongs, and may be secreted in larger quantities in neglected varieties, where also the filaments of the nut will likewise abound. But in well-cultivated varieties, it is a first-rate article of diet.

...seeds are sometimes raised from seeds, which should be sown soon after they are gathered, but this is a very uncertain way of getting the finer varieties. Propagating by layers, and grafting by approach, are the only modes of certainly continuing fine flowers as well as of improving them. Mangosteens have several advantages also of bearing when small in size, that is, only a few feet in height, and therefore well suited to culture in the hothouses of Europe. Sweet states that 'the Mango ripens in this country when the plants are of a good size, and if the weather is mild and sunny, and the pectin and the fruit is most suitable to it. and the pits should be well drained, as the plants are apt to get rotten with too much water. Fresh seeds from the West Indies vegetate freely. The plant may also be increased from cuttings, which root best in sand under a glass.' It would be advisable also to imitate its native climate as much as possible, that is, after winter, giving it dry heat with watering for some months, and then removing it into an orchidaceous house in the season of ripening its fruit.

MANGOSTEA. [CHINESEMON.] MANGOSTEUS. [RHIZOPORA.] MANHEIM, or MANNHEIM, the capital of the circle of the Lower Rhine, in the grand-duchy of Baden, is situated in 49° 14′ N. lat. and 8° 26′ E. long., in a very fertile plain, at the junction of the Neckar with the Rhine. Over both rivers there are bridges of boats: that over the Rhine, which belongs to Baden and Bavaria in common, rests on 43 pontoons; that over the Neckar, which rests on 28 pontoons, is of the same length. The Neckar is a narrow stream, built with great regularity: it consists of broad, straight, parallel streets, of which 11 run in one direction, and are crossed by 11 others at right angles. The houses are handsome, of equal height, all of two stories, except those at the corners, which are three. In which there is a reformed group paces long and 60 feet wide, leads from the Neckar Gate to the palace of the grand-duke, which is a very magnificent building, and one of the finest of the kind in Germany: it is feet in length, occupying the whole side next the Rhine, and corner of two great quadrangles. The front next the Rhine is built of a red stone intermixed with a whiter kind, and the general effect resembles that of Hampton Court. In the bombardment by the French in 1795 part of the left wing was destroyed. The right wing contains a gallery of pictures, a cabinet of natural history, a collection of plaster casts of the most celebrated antiques, and a library of 60,000 volumes. There are besides several fine apartments, a large hall called the Rittersaal (Knights' Hall), and a large room, containing the mint. The most worthy of notice are the observatory, the merchants' hall, resting on 72 arches, and 160 paces in length, and adorned with a lofty tower; the new arsenal, which is 92 feet high, 200 paces long, and 118 paces deep; and the splendid church, formerly belonging to the Jesuits, the theatre, the Lutheran, Calvinist, and Catholic churches, three hospitals, &c. Of the ten squares, the handsomest are the Parade, in which there is a marble fountain (but without water), with five statues cast by Crespolo, and the grottoes above, which there is a restaurant, called the 'Mercury Group,' by Vandenbranden. Manheim has likewise a gymnasia, a botanic garden, a mercantile school, an academy of painting and sculpture, and other establishments for education. The fortifications have been entirely demolished by the French, and the site converted into gardens, the inhabitants enjoy the benefits of beautiful public promenades, besides the fine park of the palace, which is nearly 200 acres in extent. The situation of Manheim in a fine country and near two large rivers, the Neckar and the Rhine, renders it a manufacturing city, and several of its princes have turned their attention to the subject; but the same local circumstances have rendered it an important military station, and exposed it to sieges, bombardments, and the passage of hostile troops. There is a large arsenal; the manufactures of Manheim are manufactory of tobacco, shawls, linen, and playing cards, and bleaching-gounds and tanneries. In the environs there are numerous gardens, and hops are extensively cultivated.

Manheim was only a village till 1608, when the elector palatine, Frederick IV., laid the foundation of a fortress and a town; he assigned to each of the villagers an allotment of ground, and promised the free exercise of their religion to emigrants driven by religious persecution from France and the Netherlands, numbers of whom resorted thither. In the Thirty Years' War it was taken by Tilly, Duke Bernhard of Weimar, the French, and the Bavarians. In 1668 it was taken by the French general Melas, and demolished like the rest of the country by the French. In 1701, Elector Friedrich William collected the scattered inhabitants, encouraged new settlers, and had the city fortified on Coeborn's system. His successor Charles Philip removed thither from Hadelberg in 1729, with his court and all the public officers, on accession to the crown of Prussia. The Castle of Biebisch, a large and strong fortress, near the site of the splendid palace was laid in 1750, and the building was completed in 1731. The next elector, Charles Theodore, founded many of the still existing literary and scientific institutions; but on the death of Maximilian Joseph, elector of Bavaria, in 1786, without issue, he succeeded him, and removed his court to Munich, which was a great loss to Manheim. It was taken, as already observed, by the French in 1795, by the archduke Charles in 1799, afterwards re-occupied by the French, and assigned to the crown of Bavaria. In 1801, under Narbonne, it recovered in a great degree its former prosperity during the peace that has continued since the fall of Napoleon, and the population is now about 23,000 inhabitants.

Sophie de la Roche, Briefe über Mannheim; Hessel von Chmel, Hadelberg, Mannheim, &c.; Hasel, Geog- phie; Stein, Lexicon; Cannan, Geographic, &c.) MANHEIM GOLD, a species of brass, which, according to Wiegell, consists of three parts of copper and one part of zinc.

MANNICH, [INSANITY; LUNACY.] MANNICH, an heretical Christian sect, who derived their name from Mani, as he is called by the Persians and Arabians, or Maons or Manichaeus, according to the Greek and Roman writers. The particulars of the life and death, clothed with the shadowy form of a human being, and Oriental writers: but it appears from all accounts that he was a native of Persia, or at least brought up in that country; that he was well acquainted with the doctrines of the Magi; that he attempted to amalgamate the Persia religion with Christianity; and that after meeting with considerable success, he was eventually put to death by Valerian I., king of Persia. It is difficult to determine the exact time at which the doctrines of Mani were first propagated in the Roman empire; but they do not appear to have been received before the end of the third century or the beginning of the fourth.

The Manichaeans believed, like the Magi, in two eternal principles, from which all things proceed, namely, light and darkness. Manichaeans are wholly subject to the dominion of two being, the one god of good, and the other god of evil. They also believed that the first parents of the human race were created by the god of darkness with corrupt and mortal bodies, but that their souls formed part of that original light which was subject to the god of good. It is said that it was the great object of the government of the god of light to deliver the captive souls of men from their corporeal prisons, and that with this view he created two kinds of men, being, Christ and the Holy Ghost, and sent Christ into the world, clothed with the shadowy form of a human being, not with the real substance, to teach mortals how to deliver the rational soul from the corrupt body, and to overcome the
the opinion of Bentley seems the most probable, that he was born in Asia, and lived in the time of Augustus Cesar.

Some writers suppose Mani to be the same person as the Manilius or Manlius of Antioch, the astrologer, mentioned by Pliny (H. N., xxxv. 17), and others the same as Manilius the mathematician, also mentioned by Pliny (xxxvi. 15, n. 6); but the only reason for these opinions consists in the similarity of the names.

The 'Astronomicon' does not appear to be complete. The five books which are extant treat principally of the fixed stars; but the poet promises in many parts of his work to give an account of the planets. The 'Astronomicon' contains several passages which are comparable with some of the best writings of the Augustan age; but the subject gave the author little opportunity for the exercise of his poetical powers. It appears from many parts of the work that Manilius was a staunch adherent of the Stoic philosophy.

A MS. of the 'Astronomicon' was first discovered by Poggio in 1416. The best editions are by Bentley, Lond., 1738, and Stoeber, Argent., 1767. It has been translated into English by Eng. Lud. (xxxii.).

MANILLA. [PHILIPPINE ISLANDS.]

MANIPULATION, in chemistry, embraces every part of the subject which is of a mechanical nature, such as the operations of weighing, measuring, the application of heat and fire to the substances; the modes of distillation, condensation, distillation, distillation, and sublimation, and in fact every step in chemical research includes manipulation. It will be possible therefore to treat of the whole of this subject under one head, and the most important parts of it will be found in the following articles: CONCENTRATION; DISTILLATION; FILTER, &c. This subject is admirably treated in Faraday's 'Chemical Manipulation.'

MANIS. [PANGOLINS.]

MANIL, the name of one of the most illustrious patriarchs of ancient Rome. Those most worthy of notice are:

1. Marcus Manlius Capitolinus, who was consul b.c. 399 (Liv., v. 31), and was the means of preserving the capitol when it was nearly taken by the Gauls (Liv., v. 47). He was made aedile, and held the consulate in the year 386 b.c. He was a warm supporter of the popular party, and particularly distinguished himself by his liberality with which he assisted those who were in distress. He publicly sold one of his most valuable estates, and declared that as long as he had a single pound he would not allow any Roman to be carried into bondage for debt. In consequence of his opposition to the patrician order he was accused of aiming at the kingly power. The circumstances of his trial and death are very obscure. It would appear that he was accused before the centuries and was acquitted; and that afterwards, seeing that the patrician party were determined on his destruction, he seized upon the capitol, and prepared to defend it with his life. He was appointed dictator and the curule (i.e. the patrician assembly) condemned him to death. According to Livy, who implies that Manlius did not take up arms, he was thrown down from the Tarpeian rock by the tribunes; but Niebuhr supposes, from a fragment of Dion (xxxii.) compared with the narrative of Zonaras (vii. 24), that he was treacherously pushed down from the rock by a slave, who had been hired for that purpose by the patrician party. (Roman History, vol. ii., p. 610, 611, Eng. transl.; Liv., vi. 11, 14, 26.) The Senate, however, was convinced that the Manilian gens resolved that none of its patrician members should again bear the name of Marcus. Manius was put to death b.c. 381.

2. Titus Manlius Torquatus, son of L. Manlius, was named Imperius, who was dictator b.c. 361. When his father Lucius was accused by the tribune Pomponius on account of his cruelty towards the soldiers under his command, and also for keeping his son Titus among his slaves, the latter was ordered to be brought before the house of Pomponius shortly before the trial, and to have compelled him, under threat of death, to swear that he would drop the prosecution against his father. This instance of filial affection is said to have operated so strongly in favour of Titus that the Senate, to prevent the conflict of theibus (Liv., vii. 4, 5; Cicero, De Officiis, iii. 31.)

In the following year Manlius distinguished himself by

Vox XIV.—3 D
playing in single combat a Gaul of gigantic size on the banks of the Anio. In consequence of his taking a chain (torques) from the dead body of his enemy, he received his surname of Torquatus. (Liv. vii. 10.)

Manlius filled the office of dictator twice, and, in both instances, before he had been appointed consul; once, in order to conduct the war against the Corii, n.c. 351; and the second time, in order to preside at the Comitia for the election of consuls, n.c. 346. (Liv. vii. 19-26.)

Manlius was consul at least four times. (Cic. De Off. ii. 31.) In his third consularship he defeated the Latins, who had formed a powerful confederacy against the Romans. In the same campaign he put his own son to death for having engaged in single combat with one of the enemy. (Liv. vii. 49.)

The Temple of Janus was closed during the first consularship of Manlius. (Liv. i. 19; Vell. ii. 38.)

The Manna, also known as Manna n.c. 189, and appointed to the command of the war against the Gauls in Galatia, whom he entirely subdued. An account of this war is given by Livy (xxxiv. 12-17), and Polybius (xxi. 16-22). After remaining in Asia the following year as proconsul, he passed through Thrace, where he was attacked by the inhabitants in a narrow defile and plundered of part of his booty. He obtained a triumph, n.c. 186, though not without some difficulty. (Liv. xxxiv. 6.)

MANNUS, the juice of the fruit of the Orus Europa, a species which is a native of the South of Europe, growing abundantly in Sicily, Calabria, Apulia, &c. The juice exudes spontaneously in warm dry weather, and concretions upon the bark of the tree; the finest manna is however prepared by making longitudinal incisions of about three inches long. The manna flows first in the form of a thick juice, which gradually concretes. The finest kind is called Calabrian or flake manna; it is in pieces of a pale yellowish white colour, is light, rather dry, and brittle, and has a decided impression on the branch upon which it concretes. It has a slight peculiar odour, and a sweetish taste, mixed with a slight degree of bitterness, and altogether leaves a disagreeable impression. Its texture is generally granular; but the finer pieces when broken are often so minute that they are examined by the microscope exhibit specular crystals. Manna is perfectly soluble both in water and in alcohol; the crystals deposited by cooling a hot spurious solution constitute a peculiar variety of sugar, which has been called mannites; it differs however from common sugar in the process with heat. According to Bouck, two parts of flake manna contain about 100 of mannites, mixed with uncrystallizable sugar, purgative principle, gum, &c. Manna is composed of

<table>
<thead>
<tr>
<th>Material</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Hydrogen</td>
<td>6.8</td>
</tr>
<tr>
<td>Carbon</td>
<td>38.7</td>
</tr>
<tr>
<td>Oxygen</td>
<td>53.5</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
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Manna is employed as a gentle laxative, for children or persons of weak habits. It is however seldom administered alone, but as an adjuvant to other more active medicines, as ipecac, rhubarb, &c. (Owen.)

Manlow, Allen. Besides the genuine manna described above, other sweetish secretions are exuded by some other plants which are usually considered to be kinds of manna. These appear to be all produced in warm and dry parts of the world. The kind which is most abundant and serviceable for the table is the honey of the bees, the Arbutus unedo, which is often translated: Persian manna. It is produced by a thorny plant, called by botanists manna-vernix. The gums Arbuti (a name comprised of 64) and the article of bohmann contains two species of mannoverm.
A more convenient instrument, and one of more general use, consists of a siphon-barometer, the basin of which is enclosed in a wooden vessel, furnished with a number of cocks, by means of which the pneumatic pump the contained gas may be removed, and other gases successively substituted in its place. If equal parts by weight of different gases be thus successively substituted in the siphon, their relative densities will be ascertained by observing the change which may take place in the surrounding atmosphere, except in so far as such change may affect their temperature; so that, providing the temperature remain constant, the relative tensions of those gases will be accurately ascertained. The concentration of the mercury column suspended in the longer arm of the barometer, above the level of the mercury in the basin; care being had to allow for any variation in the capacity of the receiver, arising from alteration in the level of the mercury, and which is indicated by the barometer immediately previous to the introduction of a fresh gas, arising from the impossibility of forming a perfect vacuum.

If a convenient vacuum be formed in the receiver enveloping the basin of the barometer, and a small quantity of any liquid be then introduced, it will be immediately converted into vapour, and the elastic tension of this vapour will be measured in precisely the same way as that of permanent gases. In order to contain animals and plants, the effect of which in increasing or diminishing the tension of the enclosed gas is then measured by the rise or fall of the mercury. If this manometer be transported from one place to another, where the temperature is not the same, the tension of the enclosed gas will be counterbalanced by a shorter column of mercury; and contrary; but as the expansion or contraction of steam-engines, the French government requested the Royal Academy of Sciences to institute a course of experiments, with a view to the attainment of so important an object. The care of making these experiments was confided by the Academy to M. de Prony, Aenge, Girard, and Dulong, who made their report in 1830. (Annales de Chimie, t. xiii., p. 74.) The manometer constructed for this purpose consisted of a straight glass tube of uniform bore, 1.7 metres (57 inches) in length, and 5 millimetres (20 of an inch) in diameter, closed at the upper and open at the lower extremity. The capacity having been accurately determined, it was filled with perfectly dry air of known density, and enveloped in a cloth saturated with water, by means of which it was kept cool. Another tube of equal bore and thickness, but 26 metres (68 feet) in length, and open at both ends, was then erected, and the lower extremities of the two tubes were made to communicate with apertures in the opposite sides of a cylindrically-shaped reservoir, capable of holding about 1 sext of mercury. By means of a forcing-pump adjusted to the top of this reservoir, the pressure upon the surface of the contained mercury could be increased at pleasure; and this increased pressure, being transmitted to the lateral preparation, was readily observed by a mercury to rise in both tubes, but to unequal heights; for in the longer tube it would rise until the weight of the mercury column, together with that of the superincumbent atmosphere, were equal to the pressure; but in the shorter tube, on the contrary, the air being heated by the rapidly augmenting expansive force of the confined air, added to the weight of the small column of mercury forced into it. The expansive force of the compressed air would be measured by the difference of these two columns; and by this means, the shorter tube having been carefully graduated corresponding to pressures varying from one to twenty-nine atmospheres, the construction of the manometer was complete. The longer tube and the forcing-pump were then removed, as no longer necessary, and instead of the latter vessels were connected with the manometer, and by means of the short tube having been carefully graduated, and finally increased temperatures, the tension of which was indicated by the compression of the air in the manometer.

(For more minute information see the Annales de Chimie; as above cited; also Poisson, Mécanique, &c.)
tual lands, antiently known by the denomination of sav-

sories, though held of the manor and within the seigniory
(or, as it was usually termed, within the fee) of the lord.

A manor is commonly said to consist of demesnes and services. It is quia-

litely, but perhaps more correctly, stated by Fulbeck, that these

are the material causes of a manor; for though there can be

other things may also be members and parcel of a manor.

1. The demesnes are those lands within the manor, of

which the lord is seised, i.e., of which he has the freehold,

whether they are in his own occupation, or in that of his

tenants, or held from him by freehold tenure for years. To a

mean, a manor may have either a common-law estate, holding at the joint

will of the lessor and of the lessee, or a customary estate, holding

at the will of the lord according to the custom of the

manor. [Corvus.] The tenancy for years of lands within a

manor is not limited to the manor; it may be continued

though in the assizeable manors, by parcel of the duchy of

Cornwall, customary estates for years still subsist (VIII.); and

where a copyholder surrenders for years, the surrenders

become a customary tenant for years of the portion of the
demesne so surrendered.

2. The services of a manor are, the rents, and other ser-

vices, due from freehold tenants holding of the manor.

These services are annexed or appurtenant to the seigniary

cause of such freehold tenants. The ser-

vices granted by the freeholders of the manor are held of the

manor, but are not within, or parcel of, the manor, though

within the lord's fee, or manorial seigniary.

Copyholds, being part of the demesnes, are not hold of the

manor, but are within and parcel of the manor.

The demesne lands were formerly called the inland, and

the tenemental lands, the outland, of the manor.

But though a perfect legal manor cannot exist without
demesnes and services, other incorporeal herditations, which
cannot be defined or limited with the same precision with

vowsons, rights of common, ways of, &c., and, under

peculiar circumstances, even rents-seck and rents-charge.

In general, the power of holding courts of justice, whether

for the decision of criminal matters or for the determination of
civil ones, belongs only to the freeholders. The possession

within the crown, either by actual grant or by prescription;

and in order to prevent usurpations of such a power, the

crown may at any time issue process for the purpose of

instituting an inquiry by what authority [Quo Warranto] a

subject holds his land, whether he be a tenant in chief or

baron. But it is a distinguishing feature of the feudal system, to make civil jurisdiction

necessarily, and criminal jurisdiction ordinarily, coextensive with

tenure. Upon this principle there is inseparable incident to

every feudal tenure (cursus honorum) that of being a court

in which the freeholders of the manor are the sole judges,

but in which the lord, by himself, or more commonly by his

steward, presides. The jurisdiction of the court-baron

extends over all personal actions in which the debt or
damage, or both, are unlawful and real, and in respect of lands held of the

manor could not have been brought in any other court, except upon an allegation

that the lord of the manor had in the particular instance granted or

abandoned his court to the king (quia dominus remittit
curam). To a quo warranto therefore for holding a court-

baron, it is a sufficient answer—that the defendant has a

manor. As this court was essential to the due administra-

tion of justice in questions respecting the right of property

held of the manor arising amongst the lord's tenants, there

was never a manor without a sufficient number of freeholders to constitute the court-baron, which

number must consist of three, or two at the least; three

being necessary where the litigation was between two of

the freeholders. The practice, which prevailed in France,

i.e. of towing swords before the court-baron, to make up a

suitable number of freeholders to constitute a court, does not appear to have been adopted in

England.

4. Some things are popularly supposed to be neces-

sary in a manor, which are not. The necessity for

some of these things might be better understood if the

ownership of wastes within the district over which

manor extends, is frequently called a memorial right, through

the right and interest of the lord in wastes, over which he

acts of ownership can be shown to have been exercised by

grant or estate in fee in the service of the king, or if

the lord, arising out of the circumstances of his being the

present owner of the demesne lands, and the former owner

of the tenemental lands which adjoin such wastes. The

same presumption would arise in favour of any other owner

of lands in the manor, where there was a frequent

claim to a much larger portion of wastes than other estates.

From this cause, and from the circumstances of manors being generally

large properties in the hands of the nobility and

genre, several statutes have given to lords of manors

privileges of replevin, the chief of which is, that no

keepers, which other estates, though they may be of
great extent and value, do not enjoy. But except in

particular cases in which a free-lease, free-warren [Warren], or legal

park [Park] is, by royal grant or prescription, annexed to a

former lord's estate, and is a matter of no inconsiderable

game, beyond what is given him by these modern statutes.

Copyholds are a common incident to the demesnes of

menor, but there are many manors in which this species of

tenure does not appear to have existed, and many manors

in which it has been long extinct; and there are

now no copyholds unconnected with a manor, the customs

deeming the lord's rolls appears to have formerly been

common to every lord or freeholder who had demesnes which

called a right of replevin, or a 'false-lease' (Roy. Chart.

royal franchise [Ley], under which the grantee holds a

court of criminal jurisdiction in the king's name, over the

residents) within a particular district. This

prerogative may be granted to persons who are not lords of

manors, but where there is a manor in the vicinity, the limits of the manor and

the part of the manor and of the

and the

law

III. Manors, how created.—Since the statutes of

Quia Emptores, Quia Emptores and De Praejudiciis Regis, no manors have

pro

ably been created; and it has been commonly said that

manors should afterwards be the subject of the

act of law this appears to be stated too broadly. The former

statute has been held not to apply to the immediate

domain of the king, who is not in particular the

magistrates and other (i.e. inferior) lords. The latter

statute speaks only of lands which are demesnes, and if

the estates of lands that tenure, appears to be inapplicable to

the abolition of military tenures. Besides, the statute of

Quia Emptores, Tenuriam has been held to contain no

seal, unless in respect of the great

seal of all lords, mediates or immediate; and in

the

regarding the abolition of military tenures. Besides, the

statute De Praejudiciis Regis we find an expres-
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incurs a forfeiture by making a subtenent without licence. (34 Edw. III., c. 15.) It has also been objected that a court-baron is necessary to a manor, and that a man cannot, by granting lands in fee, reserving suit at his court, create a court-baron. But the objection assumes that no greater substance can now be created than an estate tail; whereas, with licence, a tenement in fee may be created, and the holding of a court-baron seems to be incidental at common law to the seigniory over tenants in fee-simple.

The seigniorial power to cause the reversion of the leasehold, to another person, is deemed by some to be a grant of a court-baron; but where, upon the partition of a manor, part of the demesnes and part of the services, including suit of court of a sufficient number of freeholders to constitute a court-baron, are assigned to one parcer, joint-tenant, or tenant in tail of estate, but upon the death of each, shall vest in another parcer, &c., each party has a manor, and may hold a court-baron. And it is said that if a manor extends into several townships, the lord may create separate manors by conveying the demesnes and services in township A to one, and the townships B, C, and D to another.

It has been said that the king cannot at this day create a manor. From the nature of this species of estate it is obvious that the king never could create a manor. If the crown granted land to A, he might, with the licence of the crown, subinfeoff B, C, and D of parcels of the lands, retaining the mansion, with or without other demesnes, in his own hands, and stipulating with B, C, and D, that they should render their services at such mansion. A would then own a part of the whole, and D of the crown, as the king neither did nor could create the subtenures of B, C, and D, out of which arose the services that, in conjunction with the demesnes, constituted the manor.

Manors, how destroyed.—A manor is not destroyed by the loss of those incidents which, though members, and forming part, of the manor, are not, like demesnes and services, the material causes of a manor. Nor will the legal existence of the manor be affected by the alienation of part of the demesnes, or part of the services, or by the extinction of all the copyholds. But upon the alienation of all the demesnes, or the alienation or extinction of all the services, the manor ceases, and is said to be destroyed: and though any part of the demesnes, or any service, be retained, or alighted upon, the manor shall not be destroyed if there be sufficient services, it can exist no longer than whilst there can be found enough freehold tenants to constitute a court-baron. Thus, if the lord purchases the lands of all his freehold tenants, or of all except one, or if the lord dismisses all his services, the manor ceases to exist. So, if the lord alien the freehold of all lands held by him by copy of court-roll, or enfranchise all the copyholders, in a manor where there are no demesnes, except the copyholds. So, if the lord alien the whole of the services, the manor is destroyed.

But in none of these cases is the destruction of the manor absolute and irrevocable. If there cease to be any demesnes, so that the manor is turned into a seigniory in gross, yet upon the event of any of the freeholders holden of the manor coming to the lord by escheat or purchase, the lands so escheating or purchased will become demesnes of the manor, as they were, before the subinfeudation of those lands whereby they were actually severed from the manor, took place. Where a manor is destroyed by partition between co-parceners, if one die, and the other takes the share of the party dying as heir, the manor revives; but it would not be so in the case of a partition between co-inhabitants, as the lands subinfeoffed to the tenant enfranchised by the manor reviving in the case of co-parceners if the severed portion of the manor were re-united, not by descent, but by purchase. Where all the freehold tenants have ceased to exist except one, there is no longer a complete legal manor, and that one tenant holding over the lands allotted to him is held because he is deemed to be still entitled to the designation of a manor, by reason of there being demesnes and a seigniory appendant, though over one tenant only. (1 Anderson, 257.) Such an estate is however more frequently called 'a manor by reputation,' a vague term, applied indiscriminately to all estates which have been manors, and which indeed would be equally applicable to a property which had acquired the name of a manor without having ever been one.

If the lord of a manor make a gift in tail, or a lease for life, of all the demesnes, and the services of the manor, such severance and alienation of the demesnes from the manor, that there will, during the continuance of the particular manor, be no demesnes within the manor. Whilst the estate tail, or the estate for life, continues, the services of the entailees, or tenant for life, are enforced; but upon the death of the tenant in tail of estate, will be parcel of the manor, but the land itself will be holden of the manor, and will not be parcel of the manor. Instead of demesnes, and services, the lord will, for the time, have merely two classes of services, viz., those of the entail and the services of the tenant in tail of estate, to be in fee.

During the continuance of this state of things the manor will be in suspense, and the lord will have, not a manor, but a double seigniory in gross, or rather two conjoint seigniorities, one in respect of the entailies, or lessee for life, the other in respect of the antient freehold tenants of the manor in fee.

V. Manors, Customary.—So much importance formerly attached to the possession of a principal manor at which one service or more services might be rendered, that a person holding lands in customary tenure on one of the ungranted portions of his villenege to be holden of the grantor, for as great an estate as the grantor had, as of his mansion or manerium. The estate of the grantor, which, after this operation, would be the alienation of all of the ungranted portions of the villenege, with the services of the grantees appendant thereto, was called a customary manor.

The estate of a person to whom the lord of a manor has granted the freehold and seigniory of all the copyholds within the manor, may be called a customary manor; but such an estate cannot, in any sense, be said to consist of demesnes and services.

VI. Manors in Antient Dominions are those manors, though not now holden in customary tenure, to which certain customs are sometimes loosely called 'a customary manor.' But such an estate cannot, in any sense, be said to consist of demesnes and services.

VII. Manors in Border Counties.—The exposed state of the northern borders of England, liable to hostile incursions in time of war, and scarcely less in times of nominal peace, created a peculiar tenure, called the manor of Antient Desmesne, in the northern counties. Persons holding by this tenure are called customary freeholders; though here the freehold is in the lord, and the timber and mines belong to him, and not (as in the tenure in antient demesne) to the tenants; but they are so attached to the land as to be in the nature of tenants, as freeholders do, by feufe and fievew, a privilege perhaps derived from the irregularity with which the customary rights of the manor were held, and from the necessity of allowing persons whose tenure of land and of life was so uncertain to hold their property.
La Couture has been converted into the prefect's office rooms in it are occupied by a public library of 40,000 or 50,000 volumes, and 700 MSS., a museum of natural history, a collection of paintings. The town-hall is built on the site of the former palace of the counts of Le Mans, which had occupied the site of the Roman town of some Roman buildings, the walls of which are yet some remains. The court-house is well laid out and there is a theatre. The houses in the town are chiefly built of stone, and covered with slate.

The population in 1831 was 19,672, town, 19,572 whole commune. In 1836 it was 23,184 for the commune. There are considerable manufactories of woollens, cottons and linens, hosiery, lace, wax candles, and soft soap. There are bleaching establishments for linen and wool, yarn, cur-rying-shops, preserving-works, and paper-manu- facturing establishments in the manufactured articles and in the agricultural produce of the neighbourhood, including cheese, walnuts, dried fruits, fat fowls, which are sent to Paris, and trefoil seeds, sent to Russia, Sweden, and England. There is a good market every week.

The town is the episcopal see of the surrounding country. There are good inns, coffee-houses, reading-rooms, and public baths.

There are several fiscal or judicial government offices, a seminary, and a high school, a society of science, and a very good library.

Le Mans comprehends ten cantons or districts, each under a justice of the peace, and 114 communes. The area of it is 734 square miles. The population in 1831 was 157,511; in 1856, 164,647.

The name of Le Mans has been the name of a great celebrity in the seventeenth century. François Mauve, the elder, whose father, Absalon, is said to have been arch-itect to the king, at least a builder in the royal service, was born at Paris in 1598. At the age of twenty-three, he entered the service of the Hôtel de Château, and for a short time afterwards he was commissioned to execute the portal of the church of the Feuillans, in the Rue St. Honoré. The reputation acquired by these works soon procured him abundant em-ployment, and obtained for him ample remunerations for displaying his talents. Among the numerous statues erected after his designs, may be mentioned Bernier’s war Paris, Baleray, Blanquefort, Choisy, and that of Musée, which last was built for the president De Longueau, and was considered his chef-d’œuvre among his edifices of that class.

Among his churches the most noted is that of the Église de Grace at Paris, the dome of which, said to have been designed after that of the chapel of the Château of Fresnes, built by himself and executed by his father, is still in good con- dition. The façade of the church of the Minimes in the Place Royale is also by him, and has been admired as exhibiting the solution of a knotty problem, the metopes being perfect squares throughout. Such was the puissance and pedantic trifling that formerly engaged the attention of architects and connoisseurs, and for the sake of which they overlooked matters of far greater importance in architectural taste and design.

Francois died in 1666. This architect is said to have been the inventor of the curb roof, called, after him, a Mauve, which consists of two planes on each side, a steep one below and a flatter one above. It has however little beauty of form to recommend it, having very much the look of being broken or doubled.

MANSARD, Jules Hardouin, was the nephew of the above, being the son of a painter who had married the sister of François. Jules Hardouin’s family name on becoming heir to his uncle, was born in 1648. He was brought up by François to his own profes-sion, in which he afterwards so greatly distinguished himself as to be considered a successor of the latter. Most assuredly he had ample field allowed him for the display of his talents, since, had he been employed on no other work, he was called to execute one which for lavish prod-uctivity has hardly its parallel in any age or country. It be-
comes therefore quite as much a satire as a eulogy on his genius" to say that on that occasion, and with unlimited resources, he produced nothing better than Versailles—a huge pile of building, which our own eminent architect Sir C. Wren described as composed of bricks of littleness. Even his houses in King's Bench walk, which he had designed to impress us with a high degree of his talents, is obliged to admit that his designs display "une certaine mediocrité de goût," to which he might have added, a mediocrity of ideas also. It would not be difficult to select from his works numbers of instances of exceeding bad taste in grottoes, caprices, and downright solicities. Undoubtedly the magnitude and the costliness of their decorations give them an imposing air, but the effect thus produced is not to be ascribed to the architect himself—at least he must consent to share in the blame of Versailles, the work which has chiefly contributed to his reputation is the dome of the Invalides at Paris, which, although as splendid as a coat of gilt paint, is externally greatly inferior to that of our St. Paul's in harmony and majesty of design and proportions. The interior of the edifice presents far more than deserves commendation, the whole being most skilfully arranged for perspective effect. Both the Place Louis XIV and that called Des Victoires at Paris were built by him, but they have little at all remarkable, except it be that the one is an octagon, and the other an oval in plan.

With abundance of most lucrative employment, and enjoying the personal favour of a monarch who was uniformly lavish of his bounty, and who, if he did not bestow so much as he might, it is no wonder that Jules Hardouin was enabled to amass a vast fortune. He died suddenly at Marly in 1709, in his sixty-third year, and was buried in the church of St. Paul, at Paris, where a monument was erected to him, executed by the sculptor Coysevox.

MANSFIELD, a market-town and parish in the northern division of Buxton parish, in the county of Nottingham. The population of the parish in 1851 was 9,426. The town is situated on the banks of the river Maun, from which it probably takes its name, and is surrounded by the ancient forest of Sherwood, the scene of Robin Hood's chief exploits. [HOOD, ROBIN.] Its direct distance from Nottingham is 12 miles north by west, and from London is 196 miles north-north-west. The parish church, dedicated to St. Peter, is commodious; the living is a vicarage in the diocese of York and patronage of the dean of Lincoln, producing a net revenue of 1596l. The principal streets are paved, and lighted with gas. A railway, several miles long, with an expense of 30,000l., connecting Mansfield with the Cromford canal, which is said to have proved very advantageous to the trading interests of the place. There are some extensive cotton-mills, besides other manufactures, and the market is on Thursday, and the cattle-fairs are held on the 5th of April, 10th of July, and the second Thursday in October. The free grammar-school was founded by royal charter in the third year of the reign of Queen Elizabeth, who also established two scholarships of 10l. each, at Jesus College, Cambridge, for scholars from this school. The insufficient state into which this school had been allowed to fall was a subject of general complaint among the inhabitants as recently as the year 1852. According to the charter of incorporation, it is bound to be paid out of the produce of the church lands, which it is declared shall be distributed in the proportion of two-thirds to the vicar, two-ninths to the master, and the remaining onetenth to the usher; and it appears that the master's share annually amounts to 10l. and the usher's to 1l., including eight boarders, was twenty-seven.

In 1755 Faith Clarkson bequested 2000l, part of which she directed should be appropriated to the erection of a charity-school in Mansfield, and the remainder invested in land to the amount, which, according to the form of the chancery case in 1743 it was ordered that a portion of the rent of these lands should be applied to the maintenance of a master and mistress to instruct twenty poor boys and the like number of girls, aged from nine to thirteen years, and to endow the church with money sufficient to clothe all the children, and apprenticing a certain number of the boys. There is ample information as to the grammar-school and the other charitable institutions of Mansfield, in the twenty-fifth Report of the Charity Commissioners, and in the second volume of Throsby's edition of Thornton's History of Nottinghamshire, 4to. 1797.

In the neighbourhood of Mansfield-Woodhouse, a village about a mile and a half from the town of Mansfield, two Roman villas were discovered by Mr. Coke in 1786; and containing fragments of numerous coins of the emperors Vespasian, Constantine, Antoninus Pius, and Marcus Aurelius have been found at different times. (Horrocks' Hist. and Antiquities of Mansfield, 1801; and Parliamentary Papers.)

MANSFIELD, DERBY—MR. WILLIAM MURRAY, EARL OF LORD-chief-justice of the king's bench, was born at Perth on the 2nd of March, 1704, o.s. He was the fourth son of Andrew Viscount Stormont. At the age of three he was removed to London, and in 1719 he was admitted a king's scholar at Westminster. On the 17th of June, 1721, he was entered at Christ Church, Oxford, where, as before at Westminster, he distinguished himself by his classical attainments. After taking his degree of M.A. he left the university in 1730, and after travelling some time abroad he passed to the bar in Westminster, 1731. In early life he appears to have associated a good deal with the 'men of wit about town.' Dr. Johnson said of him that 'when he first came to town he drank champagne with the men of wit about town.'

It has been said of him, as of other eminent lawyers, that he had been heard to say that he never knew the difference between a total want of employment and an income of 3000l. a year. But in 1732, the year after his being called to the bar, he was engaged in an important appeal case; and in the two following years he frequently retained in similar cases before the House of Lords. (Holiday's Life, p. 28.) The first cause in the common-law courts in which Mr. Murray distinguished himself was an action of trespass with damages brought by Theophilus Cibber against Mr. Sloper. A sudden attack of illness having prevented his leader from appearing in court, the duty of conducting the defence devolved upon him. The result brought him an infux of business which at once placed him in the first rank of his profession. In 1743 he was appointed solicitor-general, and obtained a seat in the House of Commons, where his eloquence and legal knowledge soon rendered him very powerful.

In the House, Murray and Pitt (Lord Grafton) were opposed to each other as the best speakers of their respective parties. Pitt's attacks on Murray seem to have occasionally exceeded the limits prescribed by modern parliamentary regulations. 'Brilliant and argumentative as was the oratory of Murray,' says Mr. H. Roscoe (Lives of Eminent British Lawyers and Judges), 'he never possessed the nerve necessary to ward off or to return assaults so terrible as these, and for the most part he bore in agitated silence the attacks to which he did not venture replies any more.'

In 1754 Mr. Murray was made attorney-general, and in 1755 he received the appointment of chief-justice of the king's bench, and was immediately created a peer, by the title of Baron Mansfield, of Mansfield in the county of Nottingham. On his elevation to the seat of chief-justice, Lord Mansfield, contrary to the general usage, became a member of the cabinet.

Few lawyers have been more tempted than Lord Mansfield to quit their profession for politics. On several occasions (such was his power as a speaker and such was the opinion entertained of his abilities by his party) high political offices, with the prospect of higher, of indeed the highest, was pressed upon his acceptance. But whether it was prudence or a certain timidity of character which appeared in him and which would not allow him to guide his conduct, it is certain that he was firm in refusing all offers of the kind and in adhering to his profession. Thus when the duchy of Lancaster and a pension of 2000l., with the reversion of a valuable post for his nephew, Lord Mansfield, was offered to him, and, and subject, but not the amount of the proposed pension was raised to 6000l., he was firm in his refusal. 'He knew,' says Walpole, 'that it was safer to expound laws than to be exposed to them; and he said perhaps at last, he would not be chief-justice, neither would he be attorney-general.' Shortly after Lord Mansfield's promotion to the bench, on the removal of Mr. Pitt, and the resignation of Logge, the chancellor of the exchequer, the seal of the latter office were pro tempore placed in the hands of Lord
Mansfield, and he was entrusted by the king with full power to negotiate the subject of a new administration with Pitt and the Duke of Devonshire. The same reasons which made him refuse political office seem to have induced him to decline the custody of the great seal when it was, upon more than one occasion, offered to him. He preferred the purely judicial character of his king's service, which was safe from political storms and the vicissitudes which they produce. Yet in that office, though safe from political, he was not safe from popular storms. His political leanings were not towards the popular side; and even his conduct as judge in those political cases, where a distance from him and his time we can survey it with calmness, may appear deserving of a very small portion of the reprehension heaped on it by such writers as Junius, was at the time not free from the appearance of some bias against popular rights. Thus, through a long period and in various situations of life, Lord Mansfield's judicial conduct was not incompatible with the most competent to make law, at least to know when it is necessary to make it, yet those judges who are the least profound lawyers, and consequently the least able to say when law needs to be made, will be the most likely to evade it... This is matter of every-day experience to lawyers. Lord Mansfield's judicial legislation has been most successful in some branches of common law. In the law of real property he was less successful. For example, he has seen decisions made by the judges of the courts which are based on decisions in the old established rules of law, particularly as regarded what is called the rule in Shelley's case, was reversed in the Exchequer Chamber. (Fearn's Contingent Reminders, p. 158; and Doug. Rep., 329 or 343 of 3rd edition, in note.)

MANSOURA. [EGYPT]

MANTEGNA, ANDREA, was born at Padua, in 1431. His parents were persons in humble life; he does not appear under any other name than Andrea at Padua at the age of twenty-eight, a pupil of Francesco Squarcione, who was so struck with his talents that he adopted him as his son. On Andrea marrying a daughter of Jacopo Bellini, Squarcione's competitor, the latter was so enraged and filled with jealousy that he settled under the patronage of the marquis Lodovico Gonzaga, but worked occasionally at other places, especially Rome. There are several of his oil paintings in Mantua. His master-piece, the picture Della Vittoria, which was a present from the Doge of Venice, painted in 1499, is still in the French and placed in the Louvre. We are not certain where it now is. M. Fuseli, who saw it in the Louvre, speaks of it in the highest terms. Few of this painter's works now remain, and most of them have been much altered and ornamented; the Triumph of Caesar was, part of the rich gallery of paintings that belonged to the Gonzaga family, which was purchased by King Charles I. for 80,000l. Thus, the greatest and most esteemed work of Mantegna, consisting of nine paintings, representing the virtues of the nine Muses, was entire and placed in the Louvre. Unhappily it was coarsely painted over by Lacroix, in the time of Charles II. "The Triumph of Scipio," painted in black and white, and in admirable preservation, is in possession of Sir George Vertue. The earl of Pembroke has a picture by Mantegna, representing Judith beheading the head of Holopherne; and in the British Museum there is an admirable drawing in bistre touched with white, representing the dominion of the maces over the virtues, a counterpart to Mantegna's picture in the gallery of the Louvre (No. 1197), representing the virtues in the presence of the virtues. It is not probable that he painted many such large pictures, his time being so much occupied by large works and engraving; though not the inventor of this art, he was the first engraver in his time; the series of plates executed by his own hand exceeds fifty, Mantegna died in the age of 74. (Pilkington and Fuseli, Dictionary of Painters; Waagen's Arts and Artists in England.)

After having presided for upwards of 32 years in the court of king's bench, he retired from his office in 1745. He died on the 2nd of March 1753, in the 59th year of his age. He left no issue. The earldom of Mansfield, which was granted to him in 1776, descended to his nephew, Viscount Stormont. Lord Mansfield's judicial character stands high. He acquired and preserved a judicial character, which was one of the great characteristics of his life; and which, from the diversity of his attainments, took a comprehensive view of every case. The depth of his legal learning has been questioned; probably not without reason. And this want of depth, assuming it to have existed, may account for his sometimes making law instead of expounding it. A thing sometimes unavoidable in a judge; and though extremely difficult to do well, easier to do ill or indifferently than to unravel and set forth inhumorous orders a large and confused mass of law already existing on a given subject: which suggests the reflection, that though the judge is in the most competent to make law, at least to know when it is necessary to make it, yet those judges who are the least profound lawyers, and consequently the least able to say when the law needs to be made, will be the most likely to evade it... One of his greatest and most celebrated works...
MANTELLIA, a generic name proposed by Parkinson (Org. Remains) for certain acroconiom fossils of the chalk. M. Bronn quotes the description of this fossil plant to which Dr. Buckland has applied the title of Cycadeoidea. The specimens are chiefly found in the colite of the Isle of Portland, but one (M. cylindrica) occurs in the lias of Lunelville, according to M. Volta. The stem of these plants is cylindrical or spheroidal, and covered with transverse impressions of leaf bases. The internal structure resembles Cycas. (Buckland, in Geol. Trans., 1828.)

MANTES. [See Mantine.] MANTIDEAE, a family of Orthopterous insects, the species of which may be distinguished by the following characters:—Head exposed (not hidden by the thorax), furnished with three ocelli, or simple eyes, beside the ordinary pair of compound eyes; palpi short, slender, and cylindrical; antennae generally setaceous, but sometimes pedicellate; short in the females and long in the males; body elongated; the thorax usually very long, often dilated at the sides and denticulate; abdomen long, and with the terminal segment small in the male sex, more or less dilated, and with this terminal segment large in the females; the apex furnished with two small appendages; legs long; the four posterior legs slender, the anterior legs with the coxa very large and elongated; the femora also very large, dilated, and furnished with a double series of spines on the under side, between which (when the animal is in a state of reposè) the tibiae are placed; the tibiae are rather short, armed with spines, and having a strong spine at the apex, which is recurved; tarsi usually five-jointed, but in some species the posterior tarsi have only three joints; wings horizontally folded when at rest.

The principal genera contained in this family are:—Heteromantis, Eremiphila, and Mantis. The species of the first of these three genera are readily distinguished by there being only three joints to the posterior tarsi, there being five joints to the tarsi in all the species comprised in the remaining two genera. In the genus Eremiphila, the palpi are obtusely pointed, and the head is partially enveloped in the thorax; the two posterior pairs of legs are long and slender, and the thighs are sometimes terminated by a small spine; the penultimate segment of the abdomen is furnished with two spines in the females. The ocelli and wings are always very short. The geniX Mantis (as now restricted) is distinguished from the last by the head being free, the palpi very slender and almost pointed, and the wings long and free, or nearly so; the penultimate segment of the abdomen is never furnished with spines.

which they usually assume. Their resemblance to a portion of a plant is often so great, that it is only by their motions they can be distinguished. The names religiosa, precaria sancta, &c., have been applied to certain species on account of a peculiarity in their habits—that of erecting the thorax at an angle with the body, and placing together the large fore-legs, like the hands of a person when at prayer; in this position the abdomen is frequently motionless for several hours. Their food consists of flies and other insects, which they are exceedingly dexterous in catching by means of their fore-legs; the prey is held by the fore-legs, and then bent back the tibia against the femur; the opisthosoma is at the same time made to move in such a manner as to approach the prey. The parts are arranged in a symmetrical manner. The form of the case varies according to the species. The young, when hatched, resemble the parents, except in size and in being destitute of wings.

A mantis gongylodes has been selected to illustrate a common form of the insects of the present family. This species inhabits the East Indies, and is alive most probably of a green colour. The female is about four inches, and the male is about three and a half inches in length.

MANTINEA was instituted in the class of Insecta by Linnaeus in an elevated plain of considerable extent, which was bounded on the north by the plain of Orchomenus, and on the south by that of Tegen. [Arcadia.] The inhabitants of the plains of Arcadia are found in four separate districts (Xen. Hell., v. 2, § 7; Strabo, v. 332). All of Arcadia, according to Herodotus, were collected into one city. The Mantines had a democratical form of government, and were closely connected with Argos. Their political constitution, which appears to have been partly framed by Nicodemus, a friend of Diogenes, and who has received great praise from Polibius and Callinicus. (Pol. vi., p. 487, C. (Casabon); Ech. ii, 22, 23.) Their form of government and their connection with Argos led them to oppose the Lacedemonian influences. The plains of Arcadia, according to Xeni, were called Arcus, and the city of Arcadia, Argos, against Sparta, but were entirely defeated and obliged to sue for peace. (Thucyd. v. 64-74, 81.)

In B.C. 385, the Spartans, suspecting the designs of the Mantineans, commanded them to destroy the walls of their city; and on their refusing to do so, the Spartans sent an army against the place, under the command of Agesipolis. Agesipolis took Mantinea by diverting the course of the river Ophis, which flowed through the city, and thereby causing an inundation, which undermined the walls. (Xen. Hell., v. 2, 1-7; Paus. viii. 6, § 5; Diod. i. 66.) The inhabitants, after being thus compelled to live apart in four hamlets, as in ancient times, and the form of government changed to an aristocracy. After the battle of Leuctra, the Mantineans again rebuilt their city; and this was in the thirtieth year of the battle. The city was afterwards fought, B.C. 362, between the Spartans and Thebans, in which Epaminondas fell. Mantinea, in later times, joined the Achaean league; but in the massacre of a garrison of Achaeans, who had been placed in the town at the request of the inhabitants, the city was attacked and taken by the Achaeans in connection with Antigonus Doson, who sold all the male population as slaves. In honour of Antigonus, the name of the city was changed to Antigonea, which it retained till Hadrian, who restored the name of Mantinea in its original name. (Paus. viii. 8, § 6.) Paean, who visited this city in the second century, describes it as a large and flourishing place, and has devoted a considerable part of his eighth book to a description of its works of art. The ruins of old Falera, now called Pelaeroh, are still considerable. Colonel Leake says, 'The circuit of the walls is entire, with the exception of a space of four or five towers on the eastern side; in no place are there more than three courses of masonry existing above the ground; and this height is so uniform, that one cannot believe that the remainder of the works was constructed in sun-baked bricks, as it appears to have been when Agesipolis, by means of the little river Ophis, which flowed through the city, made an inundation, which submerged the foundation, and was reflected by the city. The face of the wall, on the north side, opposite to the fortifications, is more than half the wall, was used for building purposes, and made by cementing the middle being filled up

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with a rubble of broken stones mixed with mortar; the inner lining was 2 feet thick, the outer 4 feet, the rubble 4 feet—total 10 feet. The form of the city was slightly elliptical, and about equal to a circle of 1250 yards in diamet-

er, the only other side of the town. I reckoned right, is 118, the curtains are generally about 80 feet long, the towers 23 feet in the face and 13 in the flanks. There are ten gates, the approach to which was carefully defended. The entire circuit of the walls is protected by a wet ditch, formed by a small stream, which flows in from the east, and, embracing the city so as to make it an island, flows westward from the opposite extremity. 

(Travels in the Morea, l., p. 103-105.)

MANTOVA, DELEGAZIONE DI, a province of the Lombard-Venetian Kingdom, is bounded on the east by Verona and Rovigo, on the north by Brescia and the southern bank of the lake of Garda, on the west by Brescia and Cremona, and on the south by the duchies of Modena and Parma. The province of Mantova is entirely in the great plain of Lombardy, and forms part of the basin of the Po. It extends on both banks of that river, a part, though only a small one, lying on the south bank. The other rivers of the territory of Mantova are the Mincio and the Oglio, both affluent of the Po. The Mincio issues out of the lake of Garda at Peschiera, and for about nine miles marks the limits between Verona and Mantova, after which it flows across the territory of the latter, forms the ligae in the mid of which stands the city of Mantua, and then enters the Po below Governolo. The length of the province is about 32 miles; the population, in 1837, was 257,234, distributed in 17 districts, 13 of which are north of the Po, viz. Mantova, Olgiveria, Roverella, Volta, Castiglion delle Stive, Bassano, Asiago, Canneto, Marton, Borgo-figliol, Vignale, and Valpolicella. On the south of the Po, namely, Gonzaga, Revere, Sermide, and Suzara. There is no town of any importance except the capital.

The territory of Mantova is noted for its fertility. It contains numerous fine meadows well adapted for the grazing of cattle, and the agricultural resources have been greatly increased by the digging of canals; vines and mulberry-trees also abound. Landed property is very valuable in this district, which labours however under two disadvantages, namely, the danger of the inundations of the Po, to prevent which the dykes and gates are kept in constant repair at a great expense, and the unwholesomeness of the air in summer.

MANTOVA (or MANTUA), the Town of, is on an island about five miles in circumference, in the middle of a lagoon formed by the Mincio, and is joined to the mainland by a causeway of which the whole length is 1000 yards. The town and its approaches are regularly fortified, and it is considered the strongest fortress of Italy. The town is well built, with wide streets and squares, and contains many handsome structures. The principal buildings are the castle, the residence of the duke, and the cathedral, which has a fine spire. The church contains many excellent paintings, chiefly by pupils of Giulio Romano. 2. The church of St. Andrea, raised by the architect Leon Battista Alberti, of Florence, and adorned with paintings by Giulio Romano and his pupils, and with the mausoleum of several distinguished persons, is considered one of the principal churches of Mantua. 3. The church of San Barnaba, from a painting by the artist. The public library and museum: the sculpture gallery, although little noticed, is next in value to those of Rome, Florence, and Naples; the library contains 80,000 printed volumes and many MSS. 5. The ducal palace, an old, vast, irregular structure, partly re-

built by Giulio Romano with good paintings, which have been much injured during the various alterations which Mantua has undergone. The portraits of the ancient dukes of Mantua were bespattered with lime in 1797 by the political fanatics of that time, who testified in this manner their hatred of princes. 6. The gates and bridges of Mantua, especially the Gate dei Mesi and the Bridge of 7. A palace outside of the town, called ‘of the T; because some say it is built somewhat in the shape of that letter, whilst others pretend that the name is derived from the dia-

lect word ‘tajeto,' which means a drain for the marshy waters with which the ground was encumbered. Its structure was originally intended for stables for the dukes Gonzaga, but under the direction of Giulio Romano it was given 8. The same artist, with his designs, painted the apartments, one of which is called the Hall of the Giants, and contains a representation of the deities of that mythological race by Jupiter.

Two miles from Mantua is the village of Pietole, which is a true tradition reports to be the same as Andes, Virg. a birthplace. The dukedoms of Mantua had a palace here, called La Virgiliana, which still exists, though much dilapidated.

The town of Mantua contains about 25,000 inhabitants, independent of the garrison. It is a bishop see, has a cathedral and a gymnasium. In 1533 the province contained one hundred and fifty-six elementary schools for male children, and ninety-seven for females. (Sorrettori, Saggio Storico.) The Jews, who are several thousands in number in Mantua, have their own schools and a house of industry supported by themselves.

The origin of Mantua is lost in the obscurity of the ante-Roman times. Virgil (E.n., x. 201) boasts of its Etruscan origin, its former power, and says it was inhabited by three different races; and Pline the elder (xii. 19) observes that it was the only city of the Transpadane Etruscans from whom it passed into the power of the Cenomani Gauls, and afterwards became subject to Rome with the rest of Cenomani Gaul.

After the fall of the Western empire it was successively subject to the Goths, the Lombards, the Franks, and the German emperors. In the twelfth century it asserted its freedom as an independent municipality, like the other Lombard cities, but afterwards became subject to many tyrants or usurpers. The remaining history of Mantua is given under Italy, Mantua.

MANTUA. [Lombardy; Mantova.]

MANU (a word which implies 'rational,' from to understand), according to a judicious Hindu author, was the son or grandson of the creator deity Brahman, the son of Brahma and the consort of the goddess of wisdom. In later Hindu literature he is called Manu, Manava, or Manjusa (collapsing of Manu). To this primordial sage, the father of the human race, and consequently their patriarchal ruler and legislator, is ascribed a celebrated system of religious and civil law, which in the beginning of time was revealed to him by Indra, and has been handed down by tradition to the present age. In other words, the Sanskrit work now extant, and indiscriminately called Smritis (tradition), or Smadarshandas (the Institutes of Manu), is deemed by the Hindus not only the earliest, but the only code of civil law in India. The most important Manu-smritis are the Arthasastra, the Veda, and the Samhita. [BIBL.] According to the work, there are 339 particular precepts without entering fully into the labyrinth of Hindu religion and ceremonies. The work is divided into the twelve following chapters: i., On the creation; ii., On education, or on the first order; iii., On marriage, or on the second order; iv., On agriculture and private morals; v., On diet, purification, and women; vi., On devotion, or on the third and fourth orders; vii., On government, or on the military class; viii., On judiciary, and on law, private and criminal; ix., On the commercial and service classes; x., On the city, cities, and states; xi., On oppression and expansion; xii., On transmigration and final beatitude.

We shall not dwell on the first or last chapter; the first is occupied with a summary of the contents of the whole code, and with a problem which divides the adherents of the wild and fanciful conceptions of Hindu metaphysics and natural philosophy; the twelfth chapter contains a detailed system of metempsychosis and final punishments, closely connected with the institutes of temporal law. It is generally admitted that the code has been neglected, or, what is more probable, the anarchical and civil laws (vii.-xii.) have purposely been separated from the general duties contained in the first half of the work. These for the most part are a religious code, but its position is now almost entirely confined to the inferior classes and therefore totally dependent upon the hierarchical rules of the first order, by which even the minutest actions of the inferior classes are invariably to be regulated. Witness
entering into the mass of forms ity and customs by which the main structure of the Brahmanical, and in fact of every hierarchy is largely cemented, and into those generally absent and often ridiculous ceremonies inculcated upon the different branches of society, it will be sufficient to remark that they were evidently congenial to the religious prejudices, and to the habits and disposition of the Hindus, and that most of them had long been sanctioned when the sacred code of the Vedas was but recently asserted by the author himself, who professes to give the system of law in its full extent, and the immemorial customs of the four classes, adding that immemorial custom is transcendent law, approved in sacred scripture, and the home classes established. The principal duties of the four classes in general are stated as follows:

To the first, or sacerdotal order, the supreme ruler assigned the duty of reading the Vedas, and of teaching it; of giving advice to kings, of sacrificing and of assisting others to sacrifice, of giving alms, and of receiving gifts, of promoting justice on earth, and of procuring happiness hereafter; in short, a Brahmin must ever be intent on divine worship, devotion, austerity, and abstinance. It is only in case of need that he is allowed to support himself by trade or traffic, but never by service for hire. Although he is by right the chief of the whole creation, and, whether learned or ignorant, must be revered as a powerful divinity, nevertheless he should constantly shun worldly honour, and rather seek to be useful to mankind by the influence of his station. The Kshatriya, or military class, is bound to defend the people, to read the Veda, to sacrifice, and to give alms; the Vaisya caste to cultivate land, to keep herds and flocks of cattle, to carry on trade, to lend at interest, to sacrifice, to read the scriptures, and to repair by religious observances to the religious duties of the different castes. The fourth, or Sudra class, is only to serve the three upper orders, and chiefly the Brahmans.

Now in these four classes, which may be called the pillars of Hindu society, those only who are born of wives equal in caste and rank, are admitted, as sons of the gods, into their families. But by intermarriage and marriage with women who ought not to be married, and by the omission of prescribed duties, a great number of impure classes have been formed, which in their turn are obliged to perform the law of the Vedas, and suffer the same punishment on their caste, or else they will sink to a still lower degree in the scale of human society. These mixed classes are enumerated at large in the tenth chapter, and prove a far more advanced state of civilization by the very great variety of professions which they follow. The different tribes and the inhabitants of adjacent countries are asserted to have gradually sprung from the same source, we need scarcely remark that the institution of caste carried to this extent must be altogether imaginary; and moreover that a system of this kind, even in its most secret and remote parts must be a partial and almost degrading one. Hence the punishments, consisting of pecuniary fines and confiscation of property, of mutilation of the body, and death, of exile, and loss of caste (which is deemed moral death), are inflicted by the different classes. In general these punishments are slight and trifling for the highest order, but dreadfully severe and cruel for the same crimes when committed by an individual of inferior castes. Thus a soldier who sheds the blood of a Brahmin, or a Brahmakumar, or a Saddhu, or a priest of the Brahman caste shall be punished by being thrown into the ganges, or shut up in a dungeon, or put to death. In short, a Brahmin or a Saddhu acting with intention to hurt him shall be whipped about for a century in a place of future punishment, which is described as 'a dark hell.'

With regard to the penal provisions of the criminal law we observe that no distinction is made in India between punishment of retaliation has been sanctioned; for instance, whoever breaks a dam or sluice, by which an inundation would be caused (Buchanan, Myore, i. 4), shall be drowned; an adulterer shall be burned on an iron bed; a cut-purse is to lose two fingers, and 'with whatever limb a thief commits the offence, even that limb shall the king amputate' (viii. 334; ix. 273, f.) Nevertheless most of the punishments may be commuted for pecuniary fines; and in case a temporal chastisement proves unavailing threats of future pain are often brought. A person is by mutilating impious and holy charms chastised those who injure him, without complaining to the king. In short the first part of the sacred code is entirely what we should call hieratical. This character is apparent not only in its inflexible severity where religion and its ministers are concerned, and the well-calculated distinction of castes, by which a free intercourse between the members of society would be prevented, and consequently a more close dependence on the priesthood ensured, but also in the spirit of sublime devotion, of benevolence and tenderness to all sentient creatures, by which sacerdotal institutes are generally distinguished.

The second part of the code, containing the monarchical and civil laws, is more congenial to social order, and although the sacred Veda contains numerous hortatory precepts, is checked by rules of a sound policy and of regular administration. The king, born in the military class, is formed of particles drawn from the substance of the guardian deities; surpassing all mortals in glory, he is himself a divinity in a human shape, and consequently he must be the head of all classes who discharge their duty (7, 4, 9, 301 ff.). He must invariably speak truth and never transgress the rule of strict justice; but as just punishment cannot be inflicted by an ignorant and covetous king, he has to learn the science of criminal justice and of policy, the system of logic and metaphysics and sublime theological truth from learned priests, and from the people the theory of agriculture, commerce, and other practical arts. Nothing is so often referred to as being used by the king to soothe the minds of kings in protecting the property of their subjects against fraud and violence. For this purpose the prince shall appoint a governor of one town with its district, another of ten towns, of twenty, of a hundred, and above all these innumerable others, who will be the true protectors of the kingdom, the custodians of the common wealth, the representatives of the king, and the lords-lieutenants, over each thousand towns. Also, to prevent the people being oppressed, a superintendent of all affaires shall be established in every large town to inspect the inferior officers. A large number of laws for the commercial transactions of different nations, and for the purchase of marketable things, about weights and measures, tolls and freights for boats passing up and down rivers; the severe punishment of robbers and of those who will not restore loans and deposits, and the most subtle definitions of marriage, the penalty of those who shall be otherwise than by royal commission, that, if possible, the whole property of the family should be kept together. Accordingly after the death of his father, the eldest son may take entire possession of the patrimony, and the others may live under him, unless they choose to separate. Among the other rules relating to the marriage of kings, the mental and corporal defects are legally excluded from participation, being provided for, the heritage is divided into portions according to the minute and almost endless variety of regulations by which, owing to the real or imaginary inaction of Heaven, the law has become extremely abstruse and intricate. Property belonging to a sacerdotal student and to a minor must be guarded by the king, until the owner shall have concluded his studies, or to a man in his seventeenth year. No tax is levied or charge made for any estate, any trust or charitable object, or for any tuition whatsoever; and except customs duties and market-taxes, the only legal tax or annual revenue which a sovereign may receive from his whole domain is the tithe of the crops, and the salt and agricultural classes. He may take either a twelfth part of the crops, or an eighth, and in time of distress even a fourth part, but in every respect he must act like a father to his people. (7, 60, 10, 116 ff.) Serving men, artisans, and other inferior classes, are supported by law, and are assisted by their labour when needed. According to a theory most rigorously supported in a rude state of feudal and despotic government, by several Hindu lawgivers of modern times and even by a passage in Strabo, the king has been declared sole possessor of the soil; and the meditations, were one and one (1, 460; Strabo, p. 1030, Istr 6 ₄ χίαρα βασιλεία πάνα). But although the sovereign's right to an annual ground-rent, and his gifts of land, so often recorded in inscriptions and written documents, may originally have been founded on such a doctrine, its practical application would have proved ineffectual, and in fact it is nowhere adopted nor even men-
tioned by the sacred code. On the contrary, it is expressly stated a rule laid down by ancient sages, that cultivated land shall be the property of him who has cut away the wood, or who has cleared and tilled it (4, 44). To prove the inviolability of the tenure of land, upon which the proprietor is rather protected than limited by government, many special laws might be produced, such as those concerning landmarks and boundaries, the common ponds by which the fields are watered, the punishment inflicted on herdsmen and cultivators for taking the living water from them, with fear that such cultural talent from being disturbed in his possession, that even if land be injured by his neglect, he shall only be punished by a heavier tax.

The most striking feature by which, on the whole and notwithstanding its many glaring defects, this code is distinguished, is the rigour and purity of its morals. A complete system of ethics might be gathered from the scattered moral sentences, of which we subjoin the following few examples: 'Let not a man be quick to hear, slow to anger, and let him not injure another; if he, indeed, or in thought, let him not even utter a word by which his fellow-create may suffer uneasiness (2, 161). Let him bear a reproachful speech with patience; let him speak reproachfully to no man; with an angry man let him not in return be angry; abused, let him answer mildly' (6, 47). Let him say what is true, but let him say what is pleasing; let him speak no disagreeable truth, nor let him speak agreeable falsehood (4, 138 ff.). Though oppressed by penury, in consequence of his righteous dealing, the possession of his mind (Chiefly 171); let him be firm in his contentment and check all desire of acquiring more than he possesses, for happiness has its root in content, and discontent is the root of misery (4, 12). A wise man should constantly discharge all the members of his body; let him live like a man, without anything to profane the ceremonies of religion (4, 204); he should act without any view of reward, and constantly shun religious hypocrisy, for he who describes himself to worthy men in a manner contrary to truth is the most sinful wretch in the world; he is the worst of thieves, a stealer of mind (4, 225). Even below an unjust man attains no felicity, nor he whose wealth proceeds from giving false evidence; for the soul itself is its own witness: offend not thy soul, the supreme internal witness of men. The sinfull have said in their hearts 'Do nothing unjust'. Yet, the gods distinctly see them, and do so the spirit within their breasts (4, 170, 8, 84).

He who perseveres in good actions, in subduing his passions, in bestowing gifts, in gentleness of manners, who bears with hardships patiently, who associates not with the magnificence of the wicked, and who shuns the final beatitude (4, 246; 12, 10). Single is each man born, single he dies, single he receives the reward of his good, and single the punishment of his evil deeds. When he leaves his house, like a log or lump of wood on the ground, his kindred, his friends, his children, and his possessions accompany his soul' (4, 240). The principal moral duties in general are summed up in the following passage: 'The avoiding of all injury to animated beings, veracity, the abstaining from theft, and of classes (9, 60). It would appear that the order of things was then nearly the same as in modern times, in which, according to the remark of a judicious observer, 'every profession, with few exceptions, is open to every description of persons, and the discouragement arising from religious precept is greater than what exists in Great Britain from the effects of wealth and corporation laws.' (Colesbrooke, Remarks on the Bankruptcy and Internal Commerce of Bengal, Lond., 1806, p. 174; Rickard's India, or Facts submitted to the Committee of the House of Commons on the East India trade, London, 1827.) Even intellectual culture is said to have made considerable progress: the Vedas are written, and must be read, with accents and letters well pronounced; heretical books are mentioned (2, 11), legal questions must be framed from local usages and customs, and from written codes (6, 3), and written edicts of kings were by their frequency liable to forgery (9, 271). But after all, and what is most important, the burning of widows is totally unknown: on the contrary, a widow is legally entitled to a husband, and if she is lawfully married to the brother of her deceased husband, as she could marry any other man during the reign of king Vena (3, 173; 5, 157). Now the duties of a Sati, so minutely detailed in works of later date, could not possibly be omitted in a sacred code of law, and for those works at least appear to the invasion of India by the Macedonians, who were fully acquainted with these horrid sacrifices.

The learned Hindus agree that many laws enacted by man were confined to the first three ages of the world, and have no force in the present age; some of them have been abolished or modified by subsequent Hindu lawyers, according to whom the work is rather to be honoured than to be strictly followed. In fact for a long time it has formed part of the education of a lawyer to be considered as the oldest text-book of law extant, or as the Hindu 'Institutes,' preparatory to the copious 'Digesta,' 'Pandecta,' and other legal works now in use among all the different juridical schools in India. (Ellis, in Madras Review, 1835.) Thus, for example, the law of partition is generally considered as the old, with reference to which portions of it as concern the Administration of Justice in the King's Courts in India, Lond. 1830.)

The 'Institutes' of Hindu law, or the 'Ordinances of Manu,' were originally translated from the original by S. W. Jones, 1794. The Sanskrit text with the gloss of Kullukumbera was published at Calcutta in 1813. and a new edition of the metrical text, together with Sir William Jones's translation, carefully collated with the original, was published in London in 1816. A new edition of this valuable edition, with select notes and a French interpretation, by Liseelou des Longchamps, was published at Strasbourg in 1838.  

MANUCODIATA. [Birds of Paradise, vol. iv, p. 420.]  

MANUEL, NICLAUS, who claims notice not only as an artist, but as a poet and author, and one who took as an act of grace in the Reform in Switzerland, was born at Berne in 1484. His real name is conjectured by has been written of in a highly valued edition by Grüneisen, de manu, because he was illegitimate, it was, for family reasons, changed to the form of that of Manuel. It is further conjectured that he was brought up by his maternal grandfather, Frikerick. Having made choice of painting for his profession, he studied the art at Colmar, under the successors of the celebrated Martin Schöner, and later of Titian attracted him to Venice, where he became one of its pupils. This period is fixed by his biographer about the year 1511, at which time he had also assisted Holbein, in 1515, in his Dance of Death: yet this is very questionable, because he was himself employed at that time in painting the same subject at Berne, which is executed in fresco in the cloister of the Dominican nuns. He was also taught the art of ornamenting pictures with representing Solomon worshipping Idols. But of these and several other of his works nothing now remains except some semi-water-colours preserved in the library at Basle. It seems however that his pencil did not bring him sufficient for the maintenance of his family. Of his many works none have been preserved except the fresco, which is now resolved to try to advance himself in military and public affairs. He served, as quarter-master or commissary, among the Swiss allies who assisted Francis I in his expedition against Milan, 1522, and was present both at the storming of Novara and the battle of Bicocca. In the following year...
he was chosen landvogt of Erlach; and from the year 1598 distinguished himself by his zeal in the cause of the Reformation. From this period he was entirely devoted to that cause, and to his various public employments. He died in 1530, when only 46 years of age.

As a writer he beginning to publish himself in 1599, by various popular poems and songs in the Swiss dialect, full of humour and sharp satire. His 'Fastnachtspiele,' or Drama tic Morals and Mysteries, which he began to compose shortly after his election, are marked by the same qualities, in which, as may be almost taken for granted, his moral principles in support of the Reformation were not at all deficient.

MANUEL, FRANCISCO, one of the most eminent of the modern poets of Portugal, was born at Lisbon in 1734. His early life was humble, but he afterwards devoted him self entirely to literature. He was only a poet, to his own talent for which obtained him many admirers, and also some enemies and persecutors. His enemies accused him not only of entertaining exceedingly heretical opinions, but of openly despising, if not contempt for, the church, alleging against him his arguments in behalf of freedom of religion, his remarks on the monks, and, not least of all, his translation of Molière's 'Tartuffe.' Being summoned to appear before the Inquisition, instead of obeying the mandate of the Holy Office, he attacked and denounced his enemies, refused to appear before them, and saved himself by immediate flight to Paris, in 1758; in which city he resided till February 25, 1819, when he died at the age of eighty-four.

Though a zealous cultivator of the purest modes of Portuguese literature, he was not without some faults, and was not a popular admirer of the classics. His veneration for the writers of antiquity was in some degree injurious, inasmuch as it led him to regard them rather as models invariably to be followed, than as studies upon which a sound poetical taste is to be formed. He never considered the decay in his own times, and that the poetry of the present day was in the decline. Nevertheless his merits and excellencies are undeniable; and it has been said of him that no Portuguese poet or writer since the time of Camoes did so much for the language, in which respect his services were not only in可怕的, but also in his own language. He excelled in lyric and satiric poetry, and among his productions the former class his Odes to D'Albuquerque and Washington are deservedly admired for their sublimity and grandeur. Many of his epistles, tales, and fables are also stamped with the stamp of a different kind. The services which he further performed for Portuguese literature were very considerable, for he produced admirable versions of Villon's 'Oberon,' 'Sibyl Italicus,' 'Flora,' and 'Gallia Rustica,' and many others. Like his original compositions, these translations are distinguished by singular purity of style, carried occasionally perhaps rather too far, as his horror of Gallicisms and new-coined expressions frequently led him to adopt obsolete and barbarous words, as something like an appearance of pedantry and affectation.

MANUMISSION. [LIBERTINIS; SLAVE.] MANURE. Every substance which has been used to improve the natural soil, or to restore to it the fertility which is lost from the land, has been included in the name of manure. Thus chalk, marl, clay, and even sand, when added to the soil for the purpose of improving its texture, have been called manures; and some confusion has arisen in our ideas in consequence of a wrong application of these terms. Manure as now usually understood is distinguished by singular purity of style, carried occasionally perhaps rather too far, as his horror of Gallicisms and new-coined expressions frequently led him to adopt obsolete and barbarous words, as something like an appearance of pedantry and affectation. Any substance which has been used to improve the natural soil, or to restore to it the fertility which is lost from the land, has been included in the name of manure. Thus chalk, marl, clay, and even sand, when added to the soil for the purpose of improving its texture, have been called manures; and some confusion has arisen in our ideas in consequence of a wrong application of these terms. Manure as now usually understood is distinguished by singular purity of style, carried occasionally perhaps rather too far, as his horror of Gallicisms and new-coined expressions frequently led him to adopt obsolete and barbarous words, as something like an appearance of pedantry and affectation.

It is well known to all practical agriculturists that the texture of the soil and the proportions of the earths of which it is composed are the first and most important con diagrams of its productive powers. Where there is a good natural loam which retains moisture without becoming wet or overloaded with it, and permits the influence of the atmospheric air to pervade it, the crops cannot fail to be more certain and remunerative than in loose sands or tenacious clays, however rich they may be in those substances which are supposed to supply the elements from which the juices of plants are chiefly composed. But at the same time it is equally true, that the texture of soil will not produce good crops for any length of time, without the help of dung or other rich manures to recruit the loss produced by vegetation.

The various means of improving the texture, such as tillage and the mixture of earths, are treated of separately. [LOAM; MARL; SOIL; TILLAGE.] We shall here confine our observations to that class of manures which stimulate or enure the soil.

There are some substances which evidently belong to both classes of manure. Of these lime, either in its caustic state of quick-lime, or its milder form of a carbonate or chalk, is the principal. Lime, being an earth less porous than sand, and much richer in clay, is more quickly absorbed by soils in which either sand or clay prevails; but it has also a chemical effect as an alkaline earth, and, considered in this light, it acts on the soil in a peculiar manner, and greatly assists the effect of enriching manures, which are of a mineral or vegetable nature.

Lime as a manure acts most powerfully in its caustic state, that is, when deprived of the carbonic acid which is generally united with it. The carbonic acid is expelled by the heat of a furnace or kiln, and its place is supplied by this means reduced to the state of quick-lime. The value of crystallisation, which makes the particles of marble or limestone adhere in a solid form, is driven out by the heat which reduces it to a light porous stone, very readily soluble in water, and thus enters into the composition of the soil. Lime and carbonic acid, that, if it be left exposed to the atmosphere for any length of time, it absorbs both from it, and gradually returns to the state of hydrate and carbonate, or lime united with water and carbon, with this difference, that in the former, the lime is not soluble in water, while this lime united with water and carbon is reduced to the state of lime carbonate, and is therefore useful for all practical purposes.

Cautious lime readily unites with the half-decomposed fibres of vegetable matter, such as straw, hay, and the like; it helps their decomposition and accelerates it; by its means the dead fibres of the roots of vegetables, which remain in the plant after its death and are not soluble; and their elements, entering into new combinations, supply the materials for the various vegetable substances which are naturally produced. As long as there is a store of organic matter or humus in the soil, lime will be an excellent manure; as soon as this is exhausted, it will only add to the sterility by destroying every fibre which the seed might throw out from its own substance by the assistance of light and moisture. This will account for the various reports which have been made at different times of the effect of lime on the soil. In some instances the quantity which might be safely used appeared almost unlimited, in others a very small portion exhausted the powers of the soil.

Agricultural experiments are seldom conducted with sufficient precision. The man of science in his study operates on a minute portion of soil, and his experiments on vegetation are carried on at best in a few feet of garden ground. The farmer is occupied with too many things to mark the minute circumstances of his work. When lime has been found useful, and a good crop has been obtained by the abundant use of it, land is limed as often as can be done, with the same expectation of success. The same may be said of chalking and manuring: if one application has done good, another, it is supposed, will also be beneficial. On the same principle the quack doctors pretend that their medicines not only cure the diseased, but should also be taken continually by persons in health to prevent disease. The ignorant only are the dupes of these professions. Lime is a most excellent manure, and, when...
properly applied, most beneficial; but it may become inert, or even noxious, when applied injudiciously.

The principle which lies at the root of all the power in promotes vegetation, is, its combining with certain elements of decayed animal and vegetable matter, and forming a compound which is soluble in water, and which attracts carbonic acid and moisture from the atmosphere. This substance is reduced, drawn up into the sap by the roots of the vegetable, and supplies the plant with oxygen, hydrogen, and carbon, which are the elements of all vegetable substances, if we except a few which also contain nitrogen, one of the component elements of the atmosphere. Thus we see that air, water, and nutrient matter are sufficient to nourish all the elements of vegetables, and that the use of the lime is chiefly to facilitate the absorption of these elements, besides depositing a very minute portion of the pure earth in certain parts of the vegetable. Thus far lime acts as a solvent, in the same manner as it does with chalk. In the same manner, it would have the same effect. The alkalies are seldom used as manure in a pure state, but they abound in ashes, sea-weeds, and all woody fibres of vegetables; and when these are used as manures, the alkali produces its effect. Lime, being soluble, and having a very expensive, it is sometimes broken and pounded fine: in this state, it is a great deal more active, and when it acts mechanically, as fine sand would do; but gradually pulverising, and meeting with acids, its chemical effects become apparent.

The use of quick-lime in rendering inert vegetable fibres soluble, and affording the addition of animal substances, is of the greatest importance in agriculture. Substances may be rendered highly enriching in a short time, which, without it, would have lain long dormant in the soil or the dung heap. Its effects in this way will be more particularly noticed when we treat of thelime as a manure.

Wherever there is peaty matter in the soil, which, owing to the tannin principle which it contains, is, by itself, perfectly incapable of putrefaction, lime is the true remedy. Assisted by succulent matter to produce a decomposition of the peat, the lime converts the peat into a rich manure, and renders it useful to vegetation.

From the most accurate analysis of the components of plants, it is ascertained that salts and earths form a very small part of the substances of plants. There is no indication of organic matter in it, it was supposed to be the effect of the nitre which remained. That nitre may be of use in some cases we will not deny; but there is the slightest foundation for believing that it is the real fulmination of plants, or that the soil owes its fertility entirely to its presence.

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The first and most important class of manures are the excrements of animals. The peculiar property of earth in absorbing putrid effluvia and removing disagreeable smells, appears an indication of nature to lead us to bury putrid animal substances of all kinds. The excrements and dead bones of the cases of animals are the most numerous and obvious. It would require no length of experience to show that wherever this is done vegetation is more vigorous. There is therefore another motive for burying dung than merely to get rid of a disagreeable smell from its vicinity, and time will show that there are many records, the dunging of a field has been an important part of cultivation. The preparing of the dung of animals, so as to render it more efficacious, is a later improvement, and has not yet attained the perfection of which it is capable. In general, the dung of cattle, and of cows from that of horses, of cattle feeding on oil-cakes or grain, with or without the addition of fresh grass, is the most useful. Cow-dung, when in a fresh state, is thought best for light soils, and horse-dung for cold heavy soils. The richer the dung, from the nature of the food given to the animals, the looser of it need be used, and this may be worth attending to.

In speaking of dung, we have not said anything of the different kinds of dung produced from different domestic animals. In some cases it may be advantageous to keep these separate; for instance, the dung of cows from that of horses, of cattle feeding on oil-cakes or grain, with or without the addition of fresh grass, is the most useful. Cow-dung, when in a fresh state, is thought best for light soils, and horse-dung for cold heavy soils. The richer the dung, from the nature of the food given to the animals, the looser of it need be used, and this may be worth attending to.

In heavy land the straw, if not so much decomposed, will form cavities to let in the air, and allow of a more regular evaporation. All this is well known to the farmers, but not always strictly attended to. It is better to manure slightly and often than to put on a large quantity at once, except for some particular crops, which require a rich earth and consume much manure, and for which, such as potatoes, and turnips, whatever some authors may write to the contrary, are away by the old notion that roots impoverish the soil less than seeds, which is not universally the case. Anyone who has raised the above-mentioned roots with the usual manuring, and dug them up off the land to be consumed elsewhere, will acknowledge that his subsequent corn was far inferior to that which had succeeded beans, tares, or clover, with the same quantity of manure. Those who do not agree in this opinion may readily be convinced by a fair trial.

The chief use of cattle on an arable farm, besides those which are necessary for the operations of husbandry, is to produce manure for the land. If the cattle repay their food and the expense and risk attending their keep, the manure is sufficient profit. Even with a moderate loss, the manure is generally the gain of the farm. It is hard to say which is the gain to an animal; it must be at all events, used at all sacrifices. It is better to let land remain uncultivated in rough pasture, as was once the case with a great part of Britain, and is still the case with extensive tracts on the Continent, than to scatter the dung. Some few crops may be obtained at first, but the land is deteriorated for ever after, and what has been obtained from it is dearly paid for.

Various means have been adopted to increase the quantity and efficacy of manure. The simplest is to increase the number of cattle, and husband their manure. It is evident that to let cattle run in loose pastures is a great loss, not only on account of the dung which is dropped, and more than lost, but also the urine, which contains a great portion of manure. When well turned over and covered with the soil, and aged for some time, it will soon be incorporeal with the soil, and afford a succession of soluble humus or mucilage, which will give regular nourishment to the plants. This is said on the supposition that the soil is in that state when it only requires recruiting, and has a texture favourable to the crops raised upon it. In poor sands or wet clays some modification in the state of the dung may be necessary.

When the urine and a considerable portion of the solid dung are washed into a reservoir immediately from the stables, its strength can be made much more readily ascertained than when they are mixed up with straw and thrown into a
The specific gravity of the yard is readily ascer-
tained by an instrument, and those who are in the habit of
observing this liquid manure can judge most accurately of
its strength, and of the degree of putrefaction which it has
undergone.

Notwithstanding some apparently contradictory opinions,
it is pretty generally acknowledged by those who have had
long experience of its use, that urine and similar animal
substances have a more powerful effect on the soil, when
they have undergone a certain degree of putrefaction, than
when the substance is fresh and contains no putrefaction
at all. This is very apparent, and for such soils the liquid is accordingly mixed
with sand or any light earth before it is applied; or, instead of
using it at once upon the land, it is poured over the litter,
which has been collected in a heap or in a yard, after
having been exposed to time and other circumstances for
some time. The urine which would otherwise have mixed with it,
would not slowly and produce a very inferior kind of
manure, unless it was moistened, and fermentation were
excited by pouring the hot putrefying urine over it. It may
be objected that if the urine is only collected to make the straw which has served as litter, it would be as well to
let it be mixed at first, without the trouble of pumping it
up and the expense of a cistern to hold it. But we shall
soon find that this is very much more convenient. It is the
common mode of collecting farm-yard dung, the straw is very
unequally impregnated with animal matter: at one time it will
contain a large portion and run rapidly into fermenta-
tion; at another, there will be so little, that it is with
difficulty that you can obtain the putrefaction of it. By separating the urine
and litter, the straw will go much further, and can be mixed
with the urine at the most advantageous time; thus it forms a much richer manure in a smaller compass, from
not being so much diluted with water. Should there be a
cesspit in the yard, or sand or sandstone, whether from
soaking up the rich juices; for the addition to the
manure from the decomposition of the straw itself is very
small in proportion to that which animal juices afford.
If the liquid is collected from a stable or a yard where cattle are kept as good as it is produced, and is carried off into a
cistern, there will be a much better and drier bed left for
the cattle, especially if the rain is kept off by light shades.
When the litter is soiled to a certain degree, it may be re-
moved to a heap in a proper place, where its conversion into rich manure may be hastened by the application of putrified
urine, than which nothing will so soon rot vegetable fibres,
if the air be admitted to the heap. The portion which is not
wanted for some time may be left to decompose more slowly;
and as the time approaches when it is wanted for the land,
it can be managed so as to be in that state which experience
has shown to be most effective in the improvement of
the crops.

There is some appearance of certainty and regularity in
this mode of making a dunghill, which there scarcely is in
the common practice of accumulating straw, dung, and
urine without any regularity in a farm-yard, turning it over
when the cattle leave it for the pastures, and carrying so
many cart-loads per acre on the land to be manured, with-
out any regard for the different stages in the process.
One result which is often almost burnt black, and another appears like the
fresh litter of the stables, not being even thoroughly soaked
with moisture. It is true that good farmers pay more atten-
tion to their dung-heaps, and endeavour to carry out the
measures best suited to the season, but how much more
would a bin be accomplished by the help of a large cistern
full of the richest animal matter in a state of partial putre-
faction? In those situations where straw bears a high price,
it may be useful whether a cistern might not be considered
a desirable provision, made by the farmer himself, with
out any diminution of the manure required for the farm, since for light soils the liquid might be used alone,
and for stiffer soils it might be mixed into a compost with
dearth, chalk, and any kind of refuse vegetable matter
of the field. It was a celebrated agriculturist* to this writer of the article, that he considered the use of straw in dung to be merely as a
spoil to hold the liquid animal matter in its pores or tubs.

* Mr. De Biau, of Hove, near Bexhill, in Sussex.

In fact, straw or old thatch merely rotten by long exposure
to air and moisture is of little or no value as manure, although it will sometimes produce good potatoes, by
rendering a still soil pervious and porous; but, in a light soil,a
gallon of urine is worth ten times its weight of rotten
straw. This doctrine may be true of some agriculturists, but it will bear the test of experiment.

The great use of liquid manure on light soils is to impro-
grate them with soluble matter, which, being well
through their substance, supplies nourishment to the roots
of plants, wherever they may be brought in contact with
the land at any time before the seed is sown, and soon
after, when the bladed springs up or the seed begins to form;
in short, whenever the plant requires fresh nourishment,
or when that which existed in the soil is drained away by
water. Without this, the crops of Flax, Dandelions, and
never be cultivated, much less produce crops which ran a
quantity and quality with those on the best soils. The
quantity of farm-yard dung, in a very rotten state, which
this is would require to be collected and composted, could
never be produced by all the extra crops that can be raised upon it in its first state of cultivation. But
cattle produce urine, and this produces roots for cattle.
The great effect of liquid manure has set the farmers in
finding some artificial substitute for the simple urine and
diluted dung of cattle. Such substitutes are obtained by
mixing all kinds of refuse animal matter with water, and
inducing putrefaction. The emptyings of pigs from
towns is scarcely a substitute; for it is the same as the
same as the urine of cattle. The best substitute for the
refuse of oil-mills and various manufactories, when de-
ominated and mixed with a portion of putrid urine, soon be
come assimilated to it. This becomes a branch of trade in
those countries where nothing will grow without manure.
To reduce the cultivation of inferior soils to the necessary
increase of food, as well as an increase of produce from
these which are naturally fertile.

The increase of manure by the formation of composts
was, as well as probably, known to the Egyptians and their
immediate predecessors, who in many districts rendered much more
productive. The fundamental principle upon which composts
have been made, is that of impressing portions of earth
with those parts of dung of cattle, which, from want of
management in the common dunghills, would otherwise
disperse and be lost; and also accelerating or reforming
the decomposition of animal and vegetable substances by
the addition of earths, such as chalk, marl, clay, and even sand,
according to the nature of the soil on which the compost
is to be used. As it is generally useful to have the compost
in a state of partial putrefaction, the ground should contain parts already soluble in
water, which promote vegetation: while other portions
should be in a progressive state, so as to afford a success-
ful of soluble matter by a gradual and slow decomposition.

Much has been done in the way of improving the artificial
manure, and suggest the best mode of applying it, we would
guard against its being supposed that solid dung may be
altogether superseded by liquid. Liquid manure, however
active and immediately effective, soon loses its power,
whereas solid dung, well prepared and ploughed in when
in the ground, will last for several crops. It is the judicious use
of both these manures, conjointly, which has the best and
most permanent effect. The dung or compost, having been
decomposed and rendered soluble, can be used either directly on the
field, or on the farmyard, or in the cistern, whatever is adapted to the

demand of the plant. The liquid, on the contrary, acts as
so as to be poured on the surface. It is the food of
the young plant, which thrives upon it and stretches out
from the earth, till it reaches the dung which, when having undergone that state of putrefaction, is now in a proper state to supply the more vigorous
roots with sufficient nourishment. It is evident that
the growth must be more rapid and regular, and not so late
as is the case with compost, a product of proper nourishment, nor are the
young roots in danger of being exposed to the immediate contact of dung. Every
crop should therefore be made by the industrious husband-
man to increase the quantity and improve the quality of
the soil, and this is done by applying such solid and liquid, and both
with careful experiment can alone be attempted by the
inventor Humphry Davy, who so much enlarged the sphere of
chemic scientific by his discoveries, hastily asserted that
the dung from the stables and yards should be burned.
in the soil as soon as possible, because when it is col-
collected in a dunghill a great portion of volatile and gaseous
matter escapes into the atmosphere. But he did not pro-
cede to show whether the ammonia or hydrogen which
escapes would have been of any use in the soil; perhaps
this imagination, indeed, might be well founded, but, as
the bulk of the manure, actually improved it. It does
not appear that fermenting dung produces carbonic acid,
for a man may sleep on hot dung without much danger,
which would not be the case if much carbonic acid were evolved;
the ammonia contained in the dung after the heat was tolerably short and rotten before it is plunged into the
soil. The Flemings pour liquid manure on the small
heaps of dung in the field, to excite fermentation before
it is spread over the soil, on the other hand, let the manure remain spread over the soil, rolling it in
order to pulverise it some time before it is plunged in.

Without pretending to decide between these opposite
practices, we will venture to affirm that, until more light
is thrown upon this subject, it is hard to say which is
more advantageous, but that the composition of the
soil, the care that is taken of the manure, and the
method of using it, is of no small consequence. It is
therefore of the utmost importance that the farmer
should be governed in the application of manure, and
of the form of the manure, and of the composition of
the manure, and of the method of using it, and of the
method of using it, and of the method of using it, and of the
to form new combinations, which are assisted by the vital
action of the roots. This throws no great light on the subject, but it may be kept in reserve for the future.
It is possible that we may be able to learn from the result of perfect experiments, and to put
our guard against applying the general principles of
chemistry to the composition and use of manures without
carefully attending to all the circumstances and watching
the appearance of the manure. We will, therefore,
advise farmers to note down every particular in the formation
and application of the manures which they employ, and also their apparent
effect. It will require some years to enable a man
to draw just conclusions, but the data will thus be esta-
blised and the experiments made as trustworthy as possible
by all the experiments which can be made on a small
scale.

There is one substance which has been highly extolled
as a manure, but which is scarcely known by name in English
agriculture. This is called urate, being a compound of
ammonium and gypsum. It is quite a useful manure, and
burnt gypsum with urate, and forming a hard compound,
which is afterwards reduced to powder. The Royal
Society of Agriculture at Paris caused some experiments to be
made with this manure for the purpose of comparing it with
other manures. It was proposed to work on the horse,
nightsoil, pigeons' dung, &c. The result was in favour of
the urate for the duration of its effect on lucerne in a light
soil, where a portion manured with the urate produced
the greatest return at the third and fourth cuttings, when
the nightsoil and pigeons' dung had lost a portion of their
effect. It requires a moist season to act powerfully. When
mixed with dried nightsoil its effect on various crops was
very great. But it does not clearly appear whether this is to
be ascribed to the substances contained in it, or to the
effect on potatoes was superior to that of the dried night-
soil. It might be worth while to repeat these experiments,
which may be found detailed in the Dictionnaire d'Agricul-
ture Pratique, in vol. 8vo., Paris, 1826. If it should furnish
a substitute for beneficial manures, which can be obtained
to an almost unlimited extent from large towns.

The ashes of vegetable substances which have been burnt
in the open air contain a great portion of potash, with some
fine earths. They are consequently used when manur-
ating vegetation on lands which contain a good portion of
humus. They are chiefly used as a top-dressing on young
clovers and grasses; and wherever there is an appearance
of sorriness in the grass, ashes are of great use. It is
therefore desirable that these ashes should be collected,
mid and dried; and the potatoes when given to cattle will
produce sufficient dung and urine to improve the land without
much straw. It can be used as a substitute for urine,
mixed with straw, or other manures, and may be obtained
at a very cheap rate.

As a substitute for urine, several mixtures of animal and
saline matters have been tried, which are supposed to
resemble it in composition. There is no reason why such a
liquid might not be prepared artificially, and if it can be
made, it can be used, and it may be obtained in abundance
at less expense than by keeping cattle, it would be a
very important discovery.

Although bones have been treated of in a separate article
[Bones], it may be proper to mention here, that if some easy
experiments on bones, or bone-meal, were tried, they
might be made of much greater use than they now are.
At present they are put in the seed in a broken state, and
as they remain a long time undecomposed in the soil, their
effect, after the first crop, is scarcely perceptible, unless a
quantity of nitrogen is introduced. If the very finest stages of
decayed bone are run through, the bone-meal may be of
use in the same soil, and almost all the component parts
of urine would be there.

Experiments have been made on the subject of artificial
liquid manure by Mr. Kimberley of Trowbridge farm.
Some of these will be found in the next number of the Jour-
nal. Public subscription.
ever dry. This suggests a mode of supplying the soil with much manure, and may account for the effect of salt in particular cases.

The experiments which have hitherto been made on artificial manures have not been sufficiently varied to lead to any very accurate conclusions. The comparative merits of the different kinds of manure have not been stated with the minuteness which would make them a foundation for practical rules. There is a wide field open to the chemist and the scientific agriculturist, and many important discoveries no doubt would be the result of patient and accurate investigation.

MANURING, in horticulture, requires to be considered in a somewhat different light from that process as applied to agricultural purposes. This is necessary because of the variety of plants, possessing different constitutional habits, to which the garden is required to accommodate attention, and also because of the different results which are expected in horticulture and agriculture. In preparing the present article the writer has confined himself to simple practical facts, and has adverted only occasionally to chemical explanations. In the case of Davy, opinions are still too vague and unsettled to afford the cultivator a satisfactory solution of the physical problems suggested by the commonest facts in the art of manuring.

The gardener is called upon to cultivate species from almost every kind of soil on the surface of the globe, intermediate between the shifting sands of the desert and the most fertile alluvial land continually supplied and revivified by the descent of vegetable substances. It is therefore obvious that considerable caution is requisite in applying manure and in determining the quantity or quality suited to the respective constitutions of the various subjects which the horticulturist takes under his care. Thus, although manure can increase much more, others, such as the resinous trees, are actually killed by it.

The kind of manure chiefly used, and frequently the only kind procurable by the gardener, is that derived from the farm-yard; consisting chiefly of the droppings of horses or oxen, or of cattle, or of mixed with litter. Formerly it was very generally the custom to take advantage of the heat resulting from the fermentation of such dung in hot-bed forcing, and there are still some objects for which this kind is found useful (Hawthorne, vol. ii. p. 486); but since the hot-water system of heating has received so many improvements, the continued fermentation and consequent degree of decomposition which dung undergoes in hot-beds is rendered a less important means of obtaining artificial warmth, and consequently it loses the more important quality of including manure most beneficially applied in a state of decomposition, as some have advocated, or in a state as recent as possible, no fermentation being permitted previous to its deposition in the soil.

If dung contains more humus, weight for weight, than fresh dung. But the experiment, in order to be just, would require to be tried with two equal quantities of fresh dung, one of them being analyzed at the time, and the other after being subjected to the requisite degree of decomposition; for the latter process will of course occasion a diminution of weight, which ought to be taken into account. If the fertilizing power of manure can be proved to be in proportion to the quantity of humus which it contains, and if the quantity of this be in great as in the above-mentioned experiment, the concentrated state would certainly be preferable, in point of economy, on account of the saving in labour and carriage; but in the present state of knowledge this cannot be asserted, and until theories become reconciled with each other, and with experience, there is no other safe guide in practice.

If dung contains a large proportion of litter, and particularly if the latter be in a dry state, it will be advisable to subject it in nearly all cases to a moderate degree of fermentation, in order that the fibre of the straw may be reduced to a state permeable by the spongioles of plants, and either become sufficiently dissolved for affording nourishment itself, or serve in the first instance as an absorbent reservoir for substances of still greater solubility. If dung has not been subjected to litter has been frequently observed, when turned out of the ground after a dry summer, to be still in a dry moist state, having evidently been of little benefit to the crop; and in the case of many plants, which require much manure, litter in this state would actually prove very injurious. But if the dung be turned short, containing little straw, and that well saturated with the liquid proceeds of the stals, it may be dug as usual into the fermentation for most kitchen-garden crops, provided it is well divided, some mixture being turned in, and the surface being trampled in. This is necessary in all cases, but more especially so when the manure is applied fresh; for decomposing is often induced by the roots entering into manures composed of particular substances which either wholly or are a very great part of the vegetable matter, which is powerfully predominant over the proper nutritive solutions.

But on the other hand, if the soil is of a wet and stiff nature, then long unrotted dung is most proper, because its straw form so many minute drains which, to speak technically, is called a "drying" or "retaining" power of manure, and the humus matter and drilling, a crop of potatoes, for example, can be raised very superior in quality and quantity than that obtained from the application of rotten dung. In the case of previous fermentation of one fibre of the straw is not required, by degrees, and whilst the process of that vegetation, for the moisture of such a substance is sufficient to service this by degrees, and whilst the process of growth is going on.

The authority of Miller may be adduced on the subject; in his 'Gardener's Dictionary,' he observes, 'in very cold moist land, I have frequently seen it buried as it came from the stables, and always that the crops have succeeded better than where the ground was dressed with very rotten dung.

On the other hand, dung that has been moderately fermented, and can be easily cut with a spade, is the most proper for such trees as require much manure, or for slow-growing crops, where the roots have to remain for years in contact with it. If the heat arising from fermentation do not exceed 160° Fahr., Sir Humphry Davy, in his 'Chemical Essay,' has observed, that the roots may have grown luxuriantly during the summer; but when they are arrested by the approach of winter, decomposition will still be going on amongst the materials on which they feed, and these materials may perhaps be chemically changed, at all events vitiated for the purpose of nourishment, before the roots are again called to action.

With regard to trees and many perennial plants the root-jury would be incurred by using fresh dung instead of rotten, for the first season, or rather whilst vegetation continues active; but after the roots become nearly dormant, the fresh dung may be used, as it may have grown luxuriantly during the summer, but when they are arrested by the approach of winter, decomposition will still be going on amongst the materials on which they feed, and these materials may perhaps be chemically changed, at all events vitiated for the purpose of nourishment, before the roots are again called to action.

These remarks relate chiefly to the description of manure which is most generally used. Other substances which are, or may be successfully applied to promote the growth of plants, or to support the development of either roots or tops, cannot be brought within the scope of the present work, on account of the space required, and the diversity of cases to be considered.

1. All animal substances without exception.
2. All vegetative secretions of all animals.
3. All kinds of vegetable substances, in one state or another.
4. A few mineral substances, of which one of the principal is lime.

All animal substances are very powerful manures, and require to be attenuated or diluted before plants can derive nourishment from them, or in fact before roots or tops can be safely brought within their contact. If the root of a plant be wholly immersed in oil or in blood, the root will consequently lose its power of retaining any nourishment which is occasionally supplied to plants so situated as to render bulky manure inapplicable; but it should semiconnectedly be copiously diluted with water. Only such substances as such as may be blander for instance, which will not dilute the water, must be excluded from all these divisions, by which means a large surface will be exposed to atmospheric agency. Oil is impervious to air and water, and it may be taken as a general rule, that all substances impervious to these elements are unfit for the purposes in question. Such soluble matter in such substances, according to Sir Humphry Davy, is produced in 34 sq. inches. If however this mass be separated by any andstand sufficiently porous to admit air, such as urea, it will pervade everywhere, and the reaction deemed...
M A N

position will be rapidly brought about. Bones are another
form of animal matter much employed, and of considerable
effect, to nourish the vegetable kingdom, being reduced to
small fragments and fermented before being used.
Gardeners often use them in that state for forcing
strawberries, and, reduced to dust, as a top-dressing for
lawns.

The liquid portions of excrementitious manure likewise
require either to be diluted with water or to receive an admix-
ture of soil before they are brought into contact with the
roots of plants. In the case of trees with roots lying deep
in the ground, such dilution is not always necessary; but,
generally, etc., the presence or the rule is advisable.
Sir Humphry Davy recommends covering dead animals
with five or six times their bulk of soil mixed with one
part of lime. This, when mixed, it may be observed, will
still form a very strong manure, and for some plants much
too rich; for such the use of artificial compost, particu-
larly if broken bones are mixed with it.

Manures derived from the vegetable kingdom require
little preparation if they consist of such plants as are
chiefly parenchymatous, such as the brassica tribe; their
skeletons are of little usefulness; and they may therefore be
burnt fresh into the soil. The period of their growth when
this is most beneficially performed is before they run to
seed. Weeds may even be used with great advantage, if
properly prepared; but bad consequences may result from
the use of them, and too sparingly to be used; hence
occasioning much expenditure of labour to extirpate them
again. Seeds, it is well known, will not germinate without
air; but with this, and sufficient heat and moisture, nothing
can prevent them from germinating. Therefore if weeds be
grown as manures, and afterwards a sufficient amount of
fermentation is encouraged till the heat is fully equal to
that which would naturally cause the germination of the
seeds, taking care that the outside be turned into the
centre, mere germination will arise from using such manure after
the process has been aerated. A consideration of the slowest
germination of the weakest seeds which the heap may contain,
because under these circumstances the young
plants will be continually paralysed as the heat is passed
through them. Aquatic plants that will not grow on dry
ground, and a preparation similar to the above is not essential for the purpose of killing
their seeds before their application to dry ground, which is not, as
it were, their proper element.

Yeast is a most powerful vegetable manure, especially if employed in a state of putrefaction; but it requires to be
diluted with water till it appears of the colour of very
small beer. Applied in that state, it has extraordinary
power in stimulating the growth of annual crops of all
kinds. But it should be used sparingly; for lawns however it is a restorative manure of great value.
The same may be said of malt-dust.

It is observed by Sir Humphry Davy that mere wooden
fibres seems to be the only vegetable substance that abso-
lutely requires to be burnt or incinerated, and he instances tanners' spent bark as a substance very
absorbent and retentive of moisture, yet not penetrable by
the roots of plants; or it might rather be said, not
capable of affording nourishment, from the predominance of
some noxious principle, which requires to be decomposed; for
when this principle is broken down by fermentation, plants,
as it may be observed in bark-beds, root very readily in
tan.

This detesterful principle is the tannin which bark con-
tains, and the reason of its noxious effects upon plants is that the roots of all plants are
inert, and the presence of which, in an organised state,
is indispensable to the existence of roots. (Payer, in Ann.
Soc., new series, iii. 16.) Inert matter is a substance of the
same kind, and will remain for years exposed to air and
water, or for as long a period to which it is possible to
inert, it is in vain to attempt to grow any sort of plant in it;
but nothing is more certain than that if drained of stagnant
moisture and mixed with lime and dung, it will become very
fertile for most crops. It often happens that peat or bog-
sand, frequently procured at a great expense for American
plants, becomes inert; in such cases, a good result would
be obtained by turning out the peat and mixing it up in a
heap with a quantity of leaves or fresh litter sufficient to
promote a moderate degree of fermentation; then, as in the
case of tan, it will afford nourishment, and will, from a
state of uselessness, become valuable.

Of mineral manures, time is the most useful. It is not
recommended for soils that contain a large proportion of
carbon, but it produces most excellent effects in such
as abound in inert vegetable fibre. Gypsum is
found in the ashes of grasses, proves a manure for lawns.

Common salt is sometimes employed in minute portions;
especially in combination with vegetable matter, in the
influence of sea-water, and in the formation of artificial
manures for fruit-trees and kitchen-garden crops; but vegetable life is
certainly destroyed by it, if applied in any considerable
quantity. Exceptions may be noticed in the case of marine
plants; the Saurme (Cithium marinum), for example,
but cultivated in inland districts; and this is also true of the vegetable inhabitants of the great salt
plains of Asia. Wood-ashes, which consist principally of
vegetable alkali united to carbonic acid, are a good manure,
but of short duration, and they leave peaty soil in a worse
condition than before the application. Artificial compost
soil cannot therefore be too much reprehended, although
strongly advocated by some who have been led away by the
immediate result of one or two enormous crops. The applica-
tion of dung and lime, of composts of clay, marl, scor-
cover, and peatmoss, is still more greatly important,
especially so especially when draining is judiciously attended to.

There is no considerable number of plants to which
manure is prejudicial. Coniferous species of all kinds are
affected most injuriously by it, and it requires to be given
sparingly. But cultivated in inland districts; and this is also
true of Horticulture, etc., on the

MANUSCRIPTS (PALAEOGRAPHY.)
MANUZIO, ALDO, born in 1429, at Basiano in the
Papal State, died at Rome in 1498. He became
intimate with Pico, count of Mirandola, and with Alberto
Pio, lord of Carpi, with whose assistance he established a
type foundry in Venice. The art of printing was first intro-
duced into Italy, and from the first printing-office by
Francisco, called Schweinheim and Pannertz, who printed the
works of Lactantius in the monastery of Subicco in 1465.
This was the first book printed in Italy. In 1469 two other
Germans from Speyer established printing-presses at Ve-

cence, and soon after the art spread rapidly through Italy.
The first Greek book was printed at Milan, and the first
Hebrew types were used at Soncino near Cremona. Ni-

colas Johnson, a Frenchman, established a printing-press
at Venice in 1471, which was distinguished for the elegance
of its workmanship. But it was not till 1476 that France
was visited, and this was the year of the first printing-at
the produce of the press, it procured the most correct MSS.
from distant countries, and he established an academy in
his house, with the view of obtaining assistance if in
the general superintendence of his publications. Benno and
Navagère were among the members of that society. The first publi-
cations of Aldo appeared about 1490: the first with a date
in 1494. In this year he published the poem of ' Hero and
Lander' in Greek and Latin, and shortly after the Gram-
mar of Lascari, and that of Gaza, with Theocritus, and the
works of Aristotle. He invented a new sort of type,
which was light and resembled writing, called by the
Italians 'corsiva,' and known to other nations by the name of
'italic.' In 1501 the Aldine press was founded. In the list
of the Aldine editions was published at Padua in 1790:
'Serie delle edizioni Aldine per ordine alfabetico e cronologico,' and a still more complete catalogue has been since
published at Paris by Renouard. 'Annales de l'Imprimerie
et de la Librerie Moderne,' ou Histoire de la Mise en Lune de
12mo, 1803; a second edition of which, in 3 vols.,
was published in 1825, and a third, much improved, in
one vol. 8vo., Paris, 1834. It is said that the Greek books
of Aldus are less correct than his Latin and Italian prints;
but it must be recollected that these were printed from a single MS., and that an imperfect one; a
circumstance however that renders some of his Greek books
very valuable at present, as being tolerably faithful trans-
scripts of MSS., either now lost or not always accessible.
These editions, especially when upon large paper, have
often sold in modern times for considerable sums.
Aldo complains in several of his prefaces of the difficulties which he experienced, and the intense labour which he had to undergo in his profession, to which he devoted his whole life. He died at Venice in 1515, with the well-merited reputation of being not only an accurate printer, but a good scholar. He was the author of a Latin and Greek Grammar, a Greek and Latin Dictionary (the first of its kind), and several other works. His son Paolo Manuzio succeeded him in the direction of his printing establishment. Paolo was no less eminent an author than his father, and his principal works are: 1, 'Antiquitates Romanorum liber de Logibus,' fol. 1569; 2, 'De Comitiis Romanorum;' 3, De Senatu Romano; 4, 'De Civitate Romana;' besides notes and commentaries on Cicero's Epistles and Orations.

Maps. A Latin map of the Five Continents, a napkin; French, mappemonde, a map of the world.

A map is a representation of the surface of a sphere, or a portion of a sphere on a plane. The name however is commonly applied to those plane drawings which represent the form, extent, position, and other particulars of the various countries of the earth.

Maps or delineations resembling them we may reasonably conclude were coeval with the earliest geographic knowledge, for we can scarcely conceive such knowledge to exist in a nation at all without being accompanied by some attempts at illustrations, however rude and defective, by means of linear representations on a plane surface. It is not possible indeed to fix the time of these first attempts to construct maps, nor can we form any reasonable idea of how the Israelites were not altogether ignorant of the art; for we find Joshua commanding his selected men in the following terms: 'Ye shall therefore describe the land into seven parts, and bring the description hither to me, that I may cast lots for it before the Lord our God.' (Josh. xvii. 6.)

This knowledge of the Israelites was most probably derived from the Egyptians. The geographical knowledge of the Greeks, as exhibited in the Homeric poems, comprehended only a small part of Europe, Asia, and Africa, and there is much reason to believe that the Phoenicians greatly extended geography in their maritime adventures. In the seventh and sixth centuries before the Christian era, and even earlier, we know that the Greek nation was widely diffused by colonisation, which, combined with their spirit for commercial enterprise, gave them an improved knowledge of the surface of a country. In the seventh and sixth centuries before the Christian era, and even earlier, we know that the Greek nation was widely diffused by colonisation, which, combined with their spirit for commercial enterprise, gave them an improved knowledge of the surface of a country.

In their maritime adventures they are said to have been assisted by the nautical maps of the Phoenicians; but however this may be, we have no account of anything deserving the name of maps before those of Anaximander of Miletus, which seem to have been laid out to construct the map of the world. There is a passage in Herodotus (iii. 136) which may perhaps indicate something like an attempt at mapping a coast. Certain Persians, being commissioned by Darius I., sailed from Sidon in Phoenicia to the coast of Hadramaut and Yemen (πνταφρασον), till they arrived as far as Tarentum in Italy. The map of Miletus, which also signifies something like among the first maps on record, at least in Greece. Aristarchus, in his interview with Cleomenes, king of Sparta, on the occasion of soliciting his assistance against the Persians, is described as appearing before Cleomenes 'with a tablet of copper in his hand, upon which he inscribed a regular every known part of the inhabitable world, the seas, and the rivers.' Notwithstanding the imposing character of this description, some have thought that we should not receive it too literally; and that this map was probably nothing more than an itinerary of the coast of Phoenicia and the Red Sea. The itinerary of the places of encampment were almost indispensable to the commanders of armies; Diogenes and Bion are mentioned (Pliny, Nat. Hist., vi. 17) as the surveyors of the marches of Alexander, who was very careful in examining the measures of the land and sea. Mentioning the features and positions is a piece of art which he accomplished by tracing a line over certain places whose longest day was observed to be of the same length. This parallel extended from the Strait of Gibraltar to the mountain of India, passing through the island of Rhodes; and from its central position with respect to the principal antiques, it became a standard of reference in the maps of this period. Succeeding geographers made many attempts to determine the longitude of places by measurements of this line, with no great success. Eratosthenes, in addition to the parallel above mentioned and other parallels, undertook to draw a meridian from Meros through Syene to Alexandria (Strabo, ii. 114), and also to determine the earth's circumference by the actual measurement of a portion of one of its great circles. The results of his measurements materially affected the dimensions of all the ancient maps; and from this time the connection between astronomy and geography was so far established as to ensure an advantage to the latter by every advance of the former. Eratosthenes was eminently successful in the discovery of Hipparchus, who fixed the construction of maps on a mathematical basis, and enabled the geographer to lay down his latitudes and longitudes upon certain principles.

To Strabo we are chiefly indebted for our information concerning the state of geography when Augustus flourished, for his works, known to the writer, do not very much exceed that which was known to Herodotus four centuries earlier. His map of the world exhibits some remarkable errors. He supposed the Pyrenees to run north and south; cut off the projecting province of Britannia from France, places Ireland not to the west but to the north of Britain, and makes the Caspian communicate with the northern ocean though Herodotus had accurately described it as a lake.

The Roman Itineraries show that their surveys were made with considerable care, although there are no traces of mathematical geography in those which have been handed down to us, the chief object in view being the clear direction of the march of their armies. All the provinces of the Roman empire had been surveyed when Augustus died, and his system of geography, which has happily been preserved to us. If it is not so much to his more perfect acquaintance with the earth that Ptolemy owes his reputation as a geographer, as to his giving solidity and unity to the science by fixing its unconnected details on a mathematical base and carrying into full practice and to greater perfection the system of latitudes and longitudes of Hipparchus, whose invention had been much neglected for upwards of 250 years.

Ptolemy derived his information respecting the distances of places chiefly from itineraries measurements which usually exceeded the truth, and it is therefore not surprising that his map of the world should exhibit enormous errors; in addition to which consideration it cannot be supposed that Ptolemy had had the advantage of any other observations to correct his errors. It is not possible therefore that he should have been free from great mistakes, more especially in places beyond the Roman empire.

The Mappa mundi may be formed of the errors in his map from the circumstance of the northern coast of Africa being represented by him nearly as a straight line, the gulfs of the Great and Lesser Syrtes almost totally disappearing, and the Mediterranean being extended twenty degrees beyond its actual limits, which was inaccurate was continued on our maps until the middle of the seventeenth century. He also placed the mouth of the Ganges 46° to the eastward of its true position.

It is not improbable that the maps found in the MSS. of Ptolemy were really copies of, or derived from, original maps constructed by him or under his care. [Acatalogo-Demon].

Some curious particulars have come down to us illustrative of the geographical ignorance of the middle ages, yet maps do not appear to have been uncommon amongst them. The maps of the middle ages may be generally classed as follows:—1st, those in which the notions of the ancients were adhered to; 2nd, those which exhibited new discoveries or nations believed to exist. Many maps of the world were established as one great island, Africa terminating to the north of the equator. Among maps of the second class are those which seem to show some important discoveries in the west of Europe and of Africa in the twelfth and thirteenth centuries. The geography of the Arabians is but imperfectly known. Their most eminent geographer Edrisi or Eldrisi, who lived about the middle of the twelfth century, divided the world into climates from the equator northward, and each
We shall notice these two principles very briefly, as their mathematical investigation more properly belongs to the article Projection.

There are four methods of spherical projection in general use, the Gnmonic or Central, the Orthographic, the Stereographic, and the Globular, distinguished from each other by the different positions of the projecting point in which the eye is supposed to be placed.

The Gnomic or Central Projection supposes the eye to be placed in the centre of the sphere, and that the various objects to be delineated are transferred from the sphere to a plane, which is a tangent to its surface. The entire hemisphere can never be represented by this projection, since the circumference which terminates it is on a level with the eye, and is therefore parallel to the plane of projection. This method is chiefly used in dialling, but may be advantageously applied to maps of a limited extent, more especially if they are maps of the polar regions of the globe.

In this case the meridians will be straight lines radiating from the centre, and the parallels of latitude concentric circles, whose distances from the centre will respectively be equal to the cotangents of their latitudes.

In the other cases of this projection, where the perspective plane is parallel to the horizon, or to any meridian, the construction is rendered troublesome on account of the parallels of latitude becoming curves of difficult delineation: these cases therefore are seldom brought into use.

Orthographic Projection.—In this projection the eye is supposed to be at an infinite distance, so that the visual rays leave the sphere in parallel lines. The perspective plane on which a hemisphere is supposed to be delineated is the plane of that diameter which is perpendicular to the visual rays—hence every point of the hemisphere is transferred to this plane by perpendiculars let fall upon it. It will be immediately seen from the figure, that the representation will decrease in accuracy with the increase of distance from the centre; the parts near the circumference being much foreshortened and distorted.

In an Arctic map of this projection, the meridians, as in the Gnomonic maps, will be radii, and the parallels concentric circles; these circles however will have their distance from the centre equal to the cosines, and not to the cotangents of their respective latitudes.

In an Equatorial map, or one in which the equatorial regions of the globe are made to occupy the centre of the map, the plane of projection coincides with the plane of one
of the meridians. In this case the latitude circles will be
projected in straight lines parallel to the equator, which is also
a strait line, and will vary in distance from it according to
the sines of their respective latitudes. The meridians will
be portions of ellipses intersecting the equator in points
similar in position to the intersection of the parallels
on the polar diameter, and having their transverse axes
coincident with this diameter and equal to it.

Stereographic Projection.—In this projection the eye is
supposed to be placed at the surface of the sphere, and to
view the concave of the opposite hemisphere through the
plane of that circle, in the pole of which the eye is placed.

If E be the eye, and A, B, C the hemisphere to be repre-
sented, A, B, C, D will be the plane of projection; and the
position on the plane of any point of the spherical surface
will be indicated by a line drawn from that point through
the plane to the eye. Thus the points K, L, M, N on the
sphere will be transferred to the plane at k, l, m, n.

The advantages offered by this method of projection have
been already stated, as also the methods before men-
tioned. It is especially calculated for maps of the world, as
usually made in two hemispheres, from the circumstance of
the representation being less distorted, and also on account
of the meridians and parallels intersecting each other at
right angles, as they do on the globe. Its construction also
is less difficult than others, since all the great circles of
the sphere are either circles or strait lines in the projection.

The meridian of 20° W. is the one usually selected by Eng-
lish geographers for the plane of projection in these maps of
the world, because this meridian passes very nearly between
the eastern and western continents, which therefore occupy
their respective hemispheres.

Globular Projection.—This projection which is a modifi-
cation of the Stereographic, was invented by the astronomer
De La Hire, who supposed the eye to be placed at a distance
from the sphere equal to the sine of 45°; that is, if the
diameter of the sphere be equal to 200, the distance of the
eye from the nearest point of the circumference would be
70. Some further modification was subsequently deemed
desirable, in order that the meridians might intersect the
equator at equal distances. This condition is very nearly
fulfilled when the distance of the eye is 69°, the diameter
being 200 as before.

This projection is also much used in maps of the world,
but to simplify their construction, the meridians and paral-
lels are projected into circular instead of elliptical arcs, the
deviation from the strict law of the projection being too slight
to affect the practical utility of the map.

Of Projection by Development.

The developments to be mentioned are two—the Conical
and Cylindrical.

Conical Projection.—In this projection the sphere is sup-
posed to be inscribed by a cone, whose base touches the
sphere at the circle intended to represent the middle paral-
lel of the map. If the points on the sphere be now pro-
jected on the cone by lines drawn from the centre, it is
clear that in a zone extending but a short distance on each
side to the middle parallel, the points on the cone would very
nearly coincide in position with the corresponding ones on the sphere. All the delineations
having been thus made, the cone is then conceived to be
unrolled, or developed on a plane surface.

Should the map be made to extend much above or below
the middle parallel, the distant parts will be very much dis-
torted. To remedy the defects of this projection, various
modifications have been suggested, among which those of
Flamsteed are generally held in the highest estimation.

Cylindrical Projection.—From what has been said of the
cone, it will be easily understood that a cylinder may be
applied to the sphere in a similar manner, and that a
zone of very limited extent in latitude may, without very
material error, be developed on a cylinder. The peculiar-
ity of this method is, that the meridians, as well as the latitude
circles, are projected in parallel strait lines; and a conic of
the map which makes it very applicable to neutral pur-
poses, especially to the chart of the world. Mercator consid-
erged, very justly, that mariners do not employ maps to know the true
figures of countries, so much as to determine the course they shall
steer, and the bearing and distance of those points or places
which lie near their track; and this projection is the result
of his efforts to secure to the seaman these desirable ends.

The merit of this most useful method is thought by many
to be more justly due to Wright; for although Mercator
published his first chart in 1556, he omitted to declare the
principles on which he proceeded, and his degrees of lat-
titude did not preserve a just proportion in their increase
or their decrease on the globe; by which means the course which a
ship steers by the mariner's compass becomes on the chart a strait line;
the various regions of the map, however distorted, preserve their true relative bearing, and the
distance between them can be accurately measured.

MAPLE [Arcs].
MARAICAJO. [VENTURELLA.]
MARAGHA. [PERIA.]
MARANHAO (Province. [BRAZIL.]
MARANHAO, or S. LUIZ DO MARANHAO, is a
town on the northern coast of Brazil, in 3° 30" 40" S. lat.
and 43° 50" W. long. It lies on the north-western penin-
sula of an island, called Ilha do Maranhão. This island,
which is nearly twenty miles long, extends along the shore
of the continent, from which it is separated by a shallow
channel, called Rio do Mosquito. This channel is, on an
average, only 100 yards wide, and terminates in two large
bays, the Bahia do S. José on the east, and the Bahia de
S. Marcos on the west. The island is generally low and
swampy, and almost entirely covered with wood.
The town is built on the northern shores of a small peninsula, formed by two rivers, or rather small inlets of the sea, the Rio de S. Francisco on the north, and the Rio da Bacia na on the south. It is divided into two sections. The more ancient and populous part of the town, called Bairro da Fruta Grande, is situated along the shores of a broken surface. The streets are crooked, uneven, and badly paved; some of them are not paved at all. The houses have two or three floors, and are mostly built of sandstone. In this part of the town is a large square, surrounded by the palace of the governor, the college of the Jesuits, the town-hall, and the prisons, which are substantial buildings. At the back of this section lies the other, called Bairro de S. Senhora da Conceição, which consists of small houses, many of which are surrounded by gardens and plantations. Each division has its own parish church, besides which there are three other churches, two chapels, and four churches belonging to four convents. The town is defended by three small fortresses, now in a dilapidated state.

The harbour is good and safe, but the entrance is difficult, on account of a bank called Coroa do Meio, about thirty miles north of the town, on the east and west of which are deep channels leading into the harbour. The eastern, which is the most navigated, has on the east the great bank, or Coroa Grande, which extends between the northern shores of the island and the Ilha de S. Anna. The tide rises eighteen feet in the harbour, and twelve feet without it.

The mean annual temperature is 80° of Fahrenheit. The regular succession of the sea and land breezes, and the prevalence of northern winds, moderate the heat, and the climate of the town is considered healthy. The population, which amounts to about 30,000, contains a great number of negroes, the half-breeds being comparatively few in number.

The inhabitants are chiefly engaged in commerce: only the most common articles of domestic use are made in the town; the rest are imported from Europe. The trade is rapidly increasing. The number of vessels that annually entered the harbour amounted to more than 140 years ago; they came from Lisbon, Oporto, Viana, Liverpool, and New York. The imports consist of wine, brandy, oil, flour, fruits, silk, cotton and linen goods, hardware and metals, and articles brought from the East Indies, as spices, &c., and drugs. The exports are cotton, which is by far the most considerable article, rice, tanned and raw hides, &c. Sugar and coffee are imported from Pernambuco, Bahia, and other ports of Brazil. (Spix and Martinus, Reise in Brasilien.)

MARANON. [AMAZON.]

MARANS. [CHARRON ISOLATURBUR.]

MARANTA ARUNDINACEA CREE (Linn.). To this place is referred the arrow-root of commerce, but it is also procured in large quantities from a variety of closely-allied, and even many distinct, plants. Thus the Surinam and Burmuda arrow-root is the produce of the M. arundinacea, while the Jamaican arrow-root is obtained from the M. indica (Tussac); which plant, along with several Cucumis, yields also the East Indian arrow-root. The West Indian arrow-root has mostly a pure white colour, the East Indian a yellow tinge.

The tubers, root-stocks, or offsets are granted or bruised, and are soon washed with water, which is passed through a fine hair-sieve, so long as it runs off with a milky appearance. It is allowed to subside, the supernatant water drained off, and the powder dried: 100 parts of the fresh plant yield 10 parts of arrow-root; but Benzoin states he obtained 25 parts. According to an analysis of this chemist, it consists of volatile oil 0.07, starch 26, vegetable albumen 1:58, gummy extract 0.6, chloride of calcium, insoluble fibre 6, water 63.5. The volatile oil imparts a slight odour to the solution in warm water, which helps to distinguish the genuine article from several of the articles substituted for it. Arrow-root has scarcely any taste, being bland and insipid; the powder, when pressed in the hand, emits a cracking noise, and retains the impression of the fingers, which common starch from without does not. Cane sugar (palm, from Jatropha or Janicha Manihot) also retains the impression of the fingers, but it has more odour and a somewhat acid taste.

The meals of any cereal grain may easily be distinguished

1. A flower with the calyx and petals cut off, the petaloid, stamen, and style alone remaining.
2. A capsule.
With the exception of the genus Galanthus, and of Canna, which is commonly cultivated, under the name of Indian shot, because of its beautiful flowers, the species included in this order are of small size, and by no means attractive, but the Narcissus, among some of them abound in starchy matter, which renders them nutritious. Arrow-root of the finest quality is obtained from Maranta arundinacea, and a similar product is yielded by Canna edulis and others. The order is known from Zingiberaceae by the anther having but one instead of two cells.

All the species are found wild in tropical countries only.

MARASMSU (Emaciation) is a term often used by the older medical writers to designate those cases in which no particular cause for the atrophy of the body was discovered. It is not employed, however, for the condition known as scurvy was then known, and was thus named is known to be the result of some local disease, by which the complete nutrition of the body is prevented, or by which a quantity of its material is constantly abstracted; as disease of the mesenteric glands, pulmonary consumption, &c.

MARAT, JEAN PAUL, born near Neuchâtel in 1744, studied medicine at Paris. Although not deficient in intelligence and quickness, he wanted the application and perseverance which he knew to be essential to a scientific career, and he became an empiric. At the first symptoms of the Revolution in 1789, he showed himself a furious demagogue, addressing himself to the passions of the Paris populace, and preaching open insurrection and massacre. He was one of the founders of the club of the Jacobins, being elected by Danton in 1790. He then became editor of a journal entitled 'L'Ame du Peuple,' which was hawked about the streets, and became a favourite with the lower orders. In this periodical he urged the poor to rise against the rich, that the French people might have a new king, that the nobles should be guillotined, and that the nation should be made to obey the king. In 1792 he became a member of the first committee of public safety, and as such sent circulars all over France to recommend the massacre of the so-called aristocrats. He said in his paper that France would never be able to maintain its position, unless the nation adopted the constitution of the guillotine; and he actually published long lists of individuals whom he denounced as proper objects of public vengeance. And yet this man was returned by the department of Artois to the Convention at the election of 1792.

In the Convention Marat was the declared enemy of the Girondins: he attacked them in April, 1793; but Robespierre, who was more cautious, checked him then: things were not yet ripe for their proscription. Marat was even employed by the Jacobin club of the Charonne, as the chairman of the revolutionary tribunal, but was acquitted, and re-entered the convention in triumph. He saw the downfall of the Girondins, but did not long survive them. On the 13th of July, 1793, while taking a bath, a young woman entered the room and acctuated him with poison, and was immediately arrested and brought to him, under the pretext of having some pressing information to communicate. She showed him a list of declared aristocrats in his own district; and while Marat was reading it, she stabbed him to the heart, boasting that she had delivered France of a sanguinary monster. She was guillotined, and died with the greatest composure.

MARBECK, JOHN, who, as composer of the solenæ and now venerable notes set to the Psalms and Responsories, which are still in use, with some alterations, in all our cathedrals, is entitled to our notice, was organist of Winchester during the reigns of Henry VIII., and his successor. His zeal for religious reformation led him to join a society in furtherance of that object, among the members whereof were a priest, a singing-man of St. George's chapel, and a tradesman of the town. Their papers were seized, and he was in the hand-writing of them found noted down on the Bible, together with a Concordance, in English. He and his three colleagues were found guilty of heresy, condemned to the stake, and all were executed according to their sentence, except Marbeck, who, on account of his great talents, and being rather favoured by his Excellency, the bishop of Winchester, was pardoned, and lived to witness the triumph of his principles, and to publish his work which appeared under the title of 'The Book of Common Prayer, noted; the colophon being, 'Imprinted by Richard Grafton, in the king's work, ad imprimendum solum.' In the same year appeared his Concordance; and in 1574, 'The Lives of Holy Saints, Prophets, Patriarchs, and others,' and subsequently he published other books connected with religious history and ecclesiery. It is stated by Sir John Hawkins, his head-mast of honour of Marbeck, that, 'under the greatest of all temptations, he behaved (after his trial) with the utmost integrity and uprightness, refusing to make any discovery to the hurt of others.'
MARBLE. A strict definition of this term is perhaps impracticable, unless, with Da Costa, we limit it to the calcarceous rocks, ‘of very lively colours, and of a constitution so fine that they will readily take a good polish.’ In a vague sense other ornamental stones, as granite and porphyry, may be ranked among marbles; but the catalogue of the typical or calcarceous marbles is long enough without these somewhat inconvenient additions. A limestone which will admit of being worked easily and equally in all directions is properly called marble. At the middle of the eighteenth century, the middle part of the English country consisting of the English marbles, is costly, and their use limited.

Division I. Marbles of one plain colour.

Section 1. Black marbles. Most of these contain bitumen, and are feit when bruised.

Examples. The Namur marble, the marble of Ashford in Derbyshire, Dent in Yorkshire, near Crickhowell Town, Kilkenny, &c. The marble, antically called Marmor Luculellum, and now Nero Antico.

Section 2. White marbles. Examples. The marble of Paros, in which the Laocoön and Antinous are executed; the Carrara marble, of fine grain used in modern sculpture; the Skye marble, noticed by Dr. MacCulloch; that of Inverary, Assent, Blair Athol, &c.

Section 3. Ash and grey marbles. Examples. A beautiful marble, of compact oclusive texture, found near the Clee Hills in Shropshire, deservers mention.

Section 4. Brown and red marbles. Examples. The Rosso Antico; a rival to which, at least in colour, has been found on the estate of the Duke of Rutland, near Buxton. The mottled brown marble of Beethoven Full, near Milnthrop, is of good quality.

Section 5. Yellow marbles. Examples. The Gallo Antico. Siena marble, also dug at Mafra, near Lisbon. That used in ancient Rome is said to be from Numidia.


Section 7. Green marbles. Examples. The Marmor Lacedemonicum of Pliny. It is dug near Verona.

Division II. Marbles of two colours.

Section 1. Black marbles variegated with other colours. Examples. Near Ashburtun in Devonshire, Torbay in the same county, Bianco e Nero Antico, the African Brescia of the antients, Giallo e Nero Antico.

Section 2. White marbles variegated with other colours. Examples. Marble of Prato, used in modern sculpture; the marble of Calabria, of the same character as the Pietra Rossa, and much used in modern sculpture; the marble of Calamari in Italy, and Spain.

Marbles containing shells, corals, and other extraneous bodies.

In this division of marbles the British Islands are rich.

Some of the Plymouth, Ashburton, and other Devonian limestones are extremely beautiful, from the abundance of fine corals excellently preserved in them; the crinoidal marbles of Flintshire, Derbyshire, and Garsdale in Yorkshire, are elegant examples of the carboniferous limestone; the shell marbles of Rance (Normandy), Buckingham, Whichwood Forest, Stamford, Yeovil, may be noticed from the oolitic rocks; that of Petworth and Purbeck, from the Wealden strata, has been extensively used by the architects and stonecutters of the south. The delighting of the English marbles is costly, and their use limited.

MARBLEHEAD. [Massachusetts]

MARBURG, the capital of the province of Upper Hesse, in the electorate of Hesse Cassel, is situated in 50° 50' N. and 9° 32’ E., on the banks of the river Lahn, which divides the town from the suburb of Weidenhausen. The town is situated on the side of a hill, and the streets are very steep. On the top of the eminence overlooking the town there is a large castle, which was formerly well fortified and was called the castle of grave. The town is partly surrounded by a wall, in which there are five gates. Marburg has a university, which was founded in 1297, by the landgrave Philip the Generous. This university has very considerable revenues, and all the privileges appended to the German universities, and contains a library of 100,000 volumes, an anatomical theatre, a lying-in hospital, a chemical laboratory, a veterinary school, a botanical garden, a philosophical seminary, cabinets of mineralogy, &c.

The number of inhabitants in 1818 was only 225, was 359 in 1828, 432 in 1833, and at present is 800.

The town has one Calvinist, one Roman Catholic, a French Protestant, and two Lutheran churches, one hospital, two infirmaries, an orphan asylum, a school of industry, &c.

The church of St. George contains the monument of St. Elizabeth, which was however much damaged during the Westphalian government. Marburg being the seat of the provincial government, of the criminal tribunal, a board of trade, a commission of police, and a Lutheran superintendence, is the inhabitant of numerous inhabited innumerable in the town, and the town, with its numerous inhabitants, was not the seat of any considerable trade or manufactures, but the term was afterwards applied rather capriciously, and the term Marguises was multiplied in various parts of the revived Western empire. In the time of the Longhord the county, afterwards called Marca, was called Pentapolis, and its five principal towns, Ancona, Pania, Pisa, Aurum, and Sora, &c.

The name of Marchia Ancona is found in a diploma of the emperor Heliogabalus, 1, of 1162. His son Henry VI. united it to the duky of the Hesse. Un capsules of the Marchia of the former Roman library of Urbino, now the province of the Ugo, and from the Apennines to the Adriatic, along which sea it occupies a line of coast more than sixty miles in length. It has been called Lombardy ‘the March,’ from the time of the Carthaginian kings of the Inno, and from the time of the Roman empire, governed by marchiones, or marqueses, in the same manner as the Marche Tavignana, or province of the Treviso, in the province of the Venetian. [Treviso]. March (‘mark,’ in German) meant originally a frontier, but the term was afterwards applied rather capriciously, and the term Marguises was multiplied in various parts of the revived Western empire. In the time of the Longhords the county, afterwards called Marca, was called Pentapolis, and its five principal towns, Ancona, Pania, Pisa, Aurum, and Sora, &c.

The Picentes, or ancient inhabitants of Treton, are said to have been a colony of the Sabines. Their country extended along the Adriatic, from the Isus to the Truentum, which are also the limits of the modern Marche; but the Picentini, who lived south of the Truentum as far as the river Matrus (now Piomb), and formed the coun-
community, are included by Pliny and other ancient geographers within the boundaries of the Picenum. The Asis separated the Picentes from the country of the Senones; but some ancient writers have considered the Picenum to extend farther for Asinum, Fucum, Picenum, Picenum, Ricina (Dover to be Macroeta), Treia, and Tolentinum, were towns of the Picentes. The Picentes made alliance with Rome, b.c. 299. During the war of Pyrrhus they joined the Samnites, Lucanians, and others against Rome, were defeated, sold for peace and obtained it; and a Roman colony was settled at Ariminum on that occasion. (Livy, Epitome XV.) Picenum then became a Roman province, and was administered by a proconsul.

The Picentes were foremost in the league of the Italian nation, as they killed the praetor Servilius and defeated Cn. Pompeius Strabo, but were afterwards defeated by him. [Ascoli.] They however obtained the civitas, like the other Italian people.

The actual degeneration of Ancona, bounded on the east and south by the sea, on the west and north-west by the province of Pescaro e Urbino, and on the south by Macerata and Camerino, contains 155,000 inhabitants, distributed among six towns and thirty-four terre, having communal councils. The principal towns are, 1. Ancona; 2. Macerata (the ancient Asinum), with 14,000 inhabitants; 3. Camerino, with 3,000 inhabitants. (Calendrii, Saggio Storico.) The account of the other two provinces is given under Fermo ed Ascoli and Macerata e Camerino.

(Compagnoni, Reggia Picena; Colucci, Antichita Picene, 3 vol. 1829-37.)

MARCELLUS, ST. [Iserb.]

MARCELLUS. [Ammianus Marcellinus.] MARCELLUS was bishop of Rome in the reign of the emperor Diocletian. He has been represented by some as a rabble, but his. Our view of him is that he was a great favorite of the emperor, and that he is sufficient reason for his being denounced in the first place under that name, offered incense to the heathen deities, but is contested by others. He died ad 304.

MARCELLO, BENEDETTO, a patron of Venice, son of Agostino Marcello, a senator, was born in 1566. His father's death left him a youth of fifteen years. He had previously acquired a good education, and had gained a fair knowledge in natural philosophy and mathematics, as well as for his musical acquirements, he was a frequent visitor at the house of the nobility. He was received into the Church, and in 1579 he was appointed to a benefice at Ancona, where he lived for four years, and was made a priest. In 1581 he was consecrated Bishop of Ancona, and in 1582 he removed to Vicenza, where he died in 1602.

MARCELLUS, MARCELLUS. [Iserb.] Marcellus was a Roman consul, and rvived after passing through the offices of judge and questor, was made consul b.c. 274. The Transpadane Gauls having declared war against Rome, Marcellus marched against them with 6,000 men. The Romans, under the general of Addius, killed their king Viridomaros, and carried off his arms, the 'spolia opima,' which were exhibited in his triumph. At the beginning of the second Punic War, Marcellus was sent to Sicily as praeceptor to the Roman prince, and was detached from the expedition of the Syracusans firm to their alliance with Rome. After the battle of Cannae he was recalled to Italy, to oppose Hannibal. He took the command of the relics of the Roman forces in Apulia, kept Hannibal in check, and defeated the Carthaginians, b.c. 214 at the battle of Casimun by surprise. He was next sent to Italy, where he had joined against Rome. [Hann. vet.]

After a siege of nearly three years, the town was taken in the year 212 b.c., and Marcellus returned to Rome with the spoils of the enemy's country, for which he was rewarded with the highest distinction. He was also let the task of keeping the Carthaginians without any definite result. In the following year he continued in command of the army, and fought a battle against Hanno near Carussus, in which the Romans lost a great number of men. He then returned to Rome, and fight several parleys with the Carthaginians. He was also the last Roman commander during the second Punic War, and had the honor of capturating of a disinterested man.

MARCELLUS, EMPIRICUS, was born at Bordeaux, and was magister officiorum in the reign of Theodosius the Great. He was the first to carry on the war against Hanno, when, having been captured near Venusia, he rashly ventured out, fell into an ambush of advanced posts, and was killed. It caused him to body to be buried with honors. (Liv. xxv. 21.)

Though Marcellus does not appear to have belonged to the medical profession, he gives us much curious information respecting the manner in which medicine was studied at that time, as a Gaul.

MARCELLUS I. succeeded Marcellus as bishop of Rome, but we know little of him, except that he is said to have been in enforcing the discipline of the church.

He died ad 310.

MARCELLUS II. was elected after the death of Pope Julius III. in 1555, but died in less than a month after his election. He was succeeded by Paul IV.
MAR

March, the third month of the year according to modern computation, containing thirty-one days. The Roman year originally began with March [January], and was in fact so considered in England before the alteration of the style, the legal year commencing on the 25th of March. Our Anglo-Saxon ancestors called it most commonly Hild monath, loud or stormy month; and sometimes Hraet or 'heated monath', which some interpret Rheda's, others Rhede or Retha, the rugged or rough month. The name of the month is said to be derived from that of Mars, the god of war.

Before 1664 the computatio of the French year began from Easter, so that occasionally the same year might comprehend two months of March, Mars avanti, and Mars appresso. If Easter occurred in March itself, the month began in one year and ended in another. The change of computation from the first of January to Easter, in that country, was directed by an edict of Charles IX.

There is an old proverb, mentioned by various writers, which represents March as borrowing certain days from April. These are called, by the rusticus in many parts both of England and Scotland, the Borrowed Days. They are particularly noticed in the poem called 'The Complaynt of Scotland':

March said to April,
I see three hops upon a hill;
But lend your three first days to me,
And I'll be bound to pay them again.
The first shall be wind and cold,
The second shall be snow and sleet,
The third shall be a freezage,
But when the borrowed days were gone,
The three silly hops came spilling home.'

Dr. Jamieson, in his 'Etymological Dictionary,' says, 'These days being generally stormy, our forefathers have endeavour'd to account for this circumstance by pretending that March borrowed them from April, that he might extend his power so much longer. . . . These, he adds,' who are much addicted to superstition, will neither borrow nor lend on any of these days. If any one would propose to borrow of them, they would consider it as an evidence that the person wished to employ the article borrowed for the purposes of witchcraft against the lenders.'

Ray, in his Collection, has a different proverb relating to this month, viz. that 'A bushel of March dust is worth a king's ransom,' thereby expressing the importance of dry or dusty weather at this particular season of the year, in an agricultural point of view.

(Marsh's 'Cats Calendria,' 8vo. Lond., 1812, vol. i., p. 63; Furetière, 'Dictionnaire Universel'; Brand's 'Popular Antiquities.' 4to. edit. vol. i., pp. 86, 460.)

MARCH, in music, is properly speaking, an air in duple time, played by martial instruments—i.e. by infallible and palpable instruments—to mark the steps of the infantry, as well as to amuse and cheer troops of all kinds. It however has long since gained admission wherever music is heard, and consequently is written for every kind of musical instrument. Hence some of the most striking compositions by the greatest masters; as, for instance, the marches in Handel's oratorio; the religious marches (Marches religieuses) in Gluck's 'Alceste' and Mozart's 'Zauberflöte'; the two funeral marches (Marches funèbres) of Beethoven, &c.

The true March is always written in common time, or, in what is called a compound of that measure, and begins on a broken part of the bar, with an odd crotchet or a quaver. It is slow for grand or parade occasions, quick for ordinary marching. We are told by Rousseau, that Marshal Saxe used the march also for the purpose of accelerating or retarding the pace of his troops in battle. In his days there was more form, more ceremony used; something like etiquette was kept up in fighting: we doubt whether the movements of the battalions in the fields of Austerlitz and Waterloo were performed to musical movements, or even to the simple beat of drums.

MARCHANTIA C.E.E., a small natural order of Pteridophyta or Cryptogamic plants, forming part of the old group called Hepaticae. They are plants of a low organization, in most instances having no distinction of leaves and stem, but a thin, leathery, lobed thallus in their room, in which respect they resemble lichens, but are furnished with breathing pores and an approach to spiral vessels in the form of elaters, which latter circumstances elevate them to the level of Lycopsidaceae and Marsileaceae.

Marchantiaeae differ from Jungermanniaceae, with which they were formerly combined under the old name of Hepaticae, in not having a distinct stem, and in their fruit not being four-valved. Marchantia, a common plant under the north side of old walls and hedges, upon damp ground, forms deep green patches with a lobed leichnothallus, and has reproductive organs of two kinds arranged separately below mushroom-shaped heads; one of them appears to be male and the other female. None of the species are of any known use.

Marchantia polymorpha.

1. A vertical section of an involucreum, with the young capsules imbedded in the receptacle.

Endlicher separates the order into four, with the following distinctive characters:


little in history of the marches of Wales. But the term continued in use long after the conquest of that country. 

Marches is a word of French origin, as the French celebrate the marches of England, whose hereditary name was De Mortime Marie (of the Dead Sea), contracted and Gallicized into Mortimer, and whose chief residence was at Wigmore Castle in Herefordshire, had the chief management of the affairs of the West Marches. When the last Marcher, King Edward IV., their lineal descendant and heir apparent, was called Earl of March while his father was the Duke of York.

But Scotland remaining a distinct sovereignty for several centuries after the subjugation of Wales, the marches toward that country are frequently mentioned in history, and especially as being the scene of those precocious excursions in which the people of both countries were frequently engaged, or of conflicts arising out of national jealousies and disputes of interest. The maintenance of such territories, regions, lawless, or constantly liable to become so, was an object of great importance; and for this purpose the marches towards Scotland were divided into two portions, the western and the middle marches, each of which had had its line of defense, and each a kind of president or governor, who was called the warden.

MARCIANUS, born in Thrace, of obscure parentage, towards the end of the fourth century, entered the army, rose gradually by his merit to high rank, and was made a senator and governor of a province. He was the father of his sister Pulcheria, fifty-two years old, offered her hand to Marcellus, who was near sixty, because she thought him capable of bearing the crown with dignity and advantage to the state. Marcellus married her, and was proclaimed emperor in 355 by his soldiers under the influence of Pulcheria. For six years, he was peaceful, and his administration was equitable and firm. He refused to pay to Attilia the tribute to which Theodosius had submitted. In the year 453 Marcellus acknowledged Avitus as emperor of the West. Marcellus died in 457, and Pulcheria, who had lived a life on earth, died before him. He was succeeded by Leo I.

MARCHIEFNES. [Nord.] MARCHIONES, a religious sect of the second and the centuries of the Mar, so called from the teacher Marchion of Sinope. He was the creator of the old Oriental belief of two independent, eternal, co-existing principles, one evil and the other good. He endeavored to apply this doctrine to Christianity, asserting that our souls are emanations of the good principle, but our bodies and the whole world is the product of the evil genius, who strives to chain down our spiritual nature by corporeal fetters, so as to make the soul forget its pure and noble origin. He further maintained that the law of Moses and the promises of things terrestrial was a contrivance of the evil principle in order to lead men more to the earth; but that the good principle, in order to dissipate these delusions, sent Jesus Christ, a pure emanation of itself, giving him a corporeal appearance and semblance of a man, in order to remind men of their intellectual nature, and to enjoy happiness until they are reunited to the principle of good from which they are derived. Marcellus and his disciples condemned all pleasures which are not spiritual; they taught that it was necessary to combat every impulse that attaches us to the visible world; they condemned marriage, and some of them even regretted the necessity of eating the fruits of the earth, which they believed to have been created by the evil principle. The Marchionites spread their doctrine especially in Paphlagonia. The chief opponent of Marcellus was Tertullian, who wrote a book to contest his doctrines.

(Tertullianus Adaevus Marchiones; Pluquet, Descarnations des Heresies.)

MARCIUS, of Southern Mesopotamia, built on a steep hill which forms part of the chain that divides the basin of the Upper Tigris, or country of Diarbekir, from the plains of Sinjar, which are watered by the affluent of Euphrates. Marcius is a considerable town today, and is said to contain 20,000 inhabitants. Many of its people are Moslems, and the rest Christians, with some Jews. The Christians are divided between Syrians of the Greek Church, Nestorians, and Armenians. The Syriacs, who are the most numerous, have two churches in the town, which are built on the sides of the hill, and from these churches porticoes in the Syriac language, which few of
congregation understand, the vulgar tongue being the Arabic. Their patriarch showed to Mr. Buckingham a handsome copy of the Gospels in Syriac, written on parchment, richly illuminated, and bearing the date of 1150.

Mardin has eight mosques, several bazaars, and some public baths. The castle, which is built on the summit of the hill above the town, is strong by its situation. The town of Mardin is nearly half-way between Diarbekr and Moulki, and on the road from Constantinople to Bagdad.

**MAREMME**, the name given in Italy to the unwholesome lowlands which extend along the coast of the Mediterranean. The name is especially applied to the lowlands of Tuscany and of the Papal State, which are the most extensive. It is also applied by the people of Italy to the basin. The first basin begins north of Lucca, and extends along the sea-coast as far as Leghorn, south of which town the ridge of Montenero projects as far as the sea-coast. This basin extends inland from ten to twelve miles to the hills east of Pisa; it also includes the lowest part of the course both of the Serchio and the Arno, and is called Maremme Pisana. The next basin is that of the Cecina, a river which enters the sea about eighteen miles south of Leghorn. This basin, which is called Maremma, extends as far as Monte Argentario, a distance of about 60 miles in a direct line. It stretches from 10 to 12 miles inland, and he has its basin the rivers Corna, Bruna, Ombrone, and Albega, and the lakes or marshes of Castigliano and Orbetello. This large tract is called Maremma Senese, because it forms part of the province of Siena. It is also called the Maremma of Grosseto, from the town, that name which is situated in the southern part of it. A description of these tracts, which constitute the Tuscan Maremma, is given under Pisa and Siena (Provinces).

The Roman Maremma, which is a continuation of that of Siena, and there is no interruption of hills near the coast between one state and the other), begins at the river Pesca, which marks the boundary of the two countries, and extends as far as Terracina on the frontiers of Naples. The whole of this tract, of more than 120 miles in length, is low and marshy, and the soil is uniform, owing to various effects of the lower Apennines, and also to detached ridges which slope the sea without coming close to it, and which partly enclose the lowlands. The Roman Maremma may therefore be divided into three basins, and as their quality is that of small banks of that lake and the course of its outlet, the river Marta, as well as the rivers Fura, Arne, and Mignone. The mountains of Santa Fira, on the borders of Tuscany, bound this basin on the north-west; and Mount Cinello, which separates the basin of the Maremma from the basin of the Tiber. The lower steps of the ridge of Cimino approach the sea at La Toffa, near Civitavecchia. This basin, which is generally called the Maremma of Corneto, includes the district of Corneto, Montalto, Canino, Castro, and Civitavecchia. A description of it is given under Papal States.

The second basin, that of the lower Tiber, extends from Civitavecchia to Anzo. The volcanic ridge of the Alban Mountains, which extends from the bay of Pompitina to the Maremma is the boundary of small improvements in its Maremma; the marshes have been drained, the lakes embanked, the ground has been brought into tillage, and colonies established. The government has published an interesting account of the works executed for the improvement of the land, with the assistance of Mr. D. Corte, 1838.

**MARENGO**. [Alessandria; Bonaparte.]

**MARENNES**. [Charente Inferieure.]

**MARENZIO, LUCO**, certainly the most voluminous, and, in the opinion of many, the best of all the composers of madrigals, was born at Consaula in Brescia, about the middle of the sixteenth century. His parents were poor, but his fine voice recommended him to the protection of the principal ecclesiastic of the place, who had him instructed in music by Giovanni Contini, the author, we are told, of many sacred compositions. His first appearance was as maestro di Cappella to the cardinal Luigi d’Este, and at Rome, says Adami, he was beloved, and caressed by many great personages, and among the number by the king of Poland, on whose invitation he paid a visit to the dominions of that monarch. Peckham, in his Consueletum dissentiarum, tells us that he was "in displeasure with the pope, for overmuch familiarity with a kinswoman of his holiness," which was the cause of his quitting Italy for a time. He states other particulars relative to this, which are extraordinary at the least, and not supported by any other investigation. Subsequently, however, to the papal city, and was admitted into the pope’s chapel, but in what capacity does not appear; Peckham says as organist; Dr. Burney denies this, assigning as the reason of his disbelieve, that in the papal chapel there is no organist. flere, the former, who certainly was acquainted with Marenzio, describes him as a ‘little black man,’ and mentions the first, second, and third parts of his Thysdris, as ‘songs the Muses themselves might not have been ashamed to write.’ He died at Rome in 1540.

In relation to the style of composition the Italians described him as il piu dolce cigno (the sweetest swan), and the praise thus poetically expressed was perfectly just. Indeed as respects tenderness of air and gracefulness of harp, in which his music is admired, he is considered as having had superiors, among whom our own best English medi- dalists may be named without incurring the charge of national partiality. Even Peckham, his eulogist, mentions several English composers who, he says, ‘are inferior to none in the Italian manner of writing, which is in itself) for depth of skill and richness of concept.’ As he was one of the earliest composers of eminence, his works have been much imitated, and he has been more or less lessened by many writers of vocal music in parts. Handel and others, as Dr. Burney remarks, did not disdain to become his debtor.

**MAREOTIS**. [Alexandria; Egypt.]

**MARGARET, daughter of Waldemar III, king of Denmark, married in 1363 Haquin, king of Norway, on the death of Valdemar. In 1374 Valdemar’s son, Olaus, then a minor, succeeded to the crown of Denmark under the guardianship of his mother. Her father Haquin dying, Margaret was acknowledged queen of Norway. Olaus died in 1367, and the Danes also acknowledged Margaret as their queen. As they quarreled against Albert, the King of Sweden, who was not popular with his subjects, defeated him, and made him prisoner, and was then acknowledged queen of Sweden. After seven years’ confinement, she released Albert, on condition of being formally acknowledged as queen of Sweden. In 1366 the three kings of the three kingdoms assembled at Calmar, where it was agreed that in future they should all be ruled by one and the same sovereign. This act was called the ‘Calmar Union.’ On this occasion Margaret designated her nephew Eric as her successor. She died in November, 1411, being 59 years of age.

Margaret had many great qualities; but her political conduct, especially in her transactions with Sweden, was not free from duplicity and artifice. To the Danes however, she proved a good queen. She loved pomp and splendor, was brave and resolute, and had rather the qualities of the stronger sex than those of her own. [Eric XIII. of Sweden.]**

**MARGARET OF ANJOU. [Henry VI.]**

**MARGARET OF RICHMOND. [Henry VII.]**

**MARGARIC ACID, a fatty acid, so called by Chevreul, who discovered it, from 'margarites' (μαργαρίτης), a pearl, on account of its peculiar luster. It is prepared from soap made with olive oil, by boiling it for forty-eight hours, and then macerated for twenty-four hours in twice its weight of cold alcohol. The oleate of potash, which the soap also contains, is dissolved by the alcohol, while the margarate of potash remains unacted upon; this is to be well washed with cold alcohol, and then dissolved in 200 parts of boiling alcohol: on cooling, the margarate of potash crystallizes; and as it contains a little oleate, it is to be crystallized a second time: it is then to be decomposed, and the margaric acid precipitated by the addition of hydrochloric acid.**
The properties of this acid are, that on cooling, after fusion, the crystals in pearly needles; it is insoluble in water and hence its precipitation from its compounds and solution by the stronger acids. It has an acid reaction; and its salts, except those of the alkalis, are very sparingly soluble in water. Its saline compounds are termed margarites. Activity of Hope. A. Bonn. Thirty-three equivalents of hydrogen 33 or 12:59 Thirty-five equivalents of carbon . 210 78:38 Three equivalents of oxygen . 24 9:03 Equivalent . 267 100. The crystals contain 3-4 per cent. of water, which can be separated only by converting the acid into a margarate by combining it with a base.

Margarate of Potash is obtained as above stated by the action of alcohol on soap made of olive-oil and potash; it separates from its solution in boiling alcohol in brilliant scales: with ten times its weight of water, at about 158; it forms a limpid solution, which begins to become turbid at about 145, and at 60 it becomes gelatinous; a larger quantity of water partially decomposes it, and converts it into bimargarate; at 55, when exposed to a moist atmosphere, it absorbs its weight of water without becoming liquid; 100 parts of alcohol are capable of holding 121 part in solution when cold, 10 parts when hot. Either, when boilable the bimargarate.

Bimargarate of Potash is soluble in hot alcohol, 100 parts (of sp. gr. 0-934) dissolving 31-17 parts at 146 Fahr., of which however only 1-13 part remains dissolved at 68.

Margarates of Soda strongly resemble those of potash: they dissolve in 10 times its weight of water at 172, and the solution becomes gelatinous at 148, and contains a little acetic acid salt.

Margarate of Lead. Of those there are three, a sub-muriatic, and super-salt. The neutral is produced by double decomposition: it contains combined water, and fuses at about 176° boiling alcohol of sp. gr. 0-823 dissolves about 6 of its weight; it is less soluble in boiling ether. When fat is boiled with the alkalis, in preparing soap, it is estimated as fuel, and may be used either for burning anything or for absorbing anything from the air, are converted into one or more fatty acids and glycerin; to these changes the elements of the water however contribute; the new acids, combining with the alkali, form soap, which is necessary for the surface of the fluid, while the glycerin remains in solution.

Margarin, a peculiar fatty matter contained in vegetable oils, and also in animal fats, as mutton-suet and hog's-lard: when these have been treated with ether, for the purpose of extracting them from the rest, the oil, by spontaneous evaporation, deposit a portion of the solid matter which they contain, and this is to be collected on a linen cloth, strongly pressed, and then exposed for a long time to the heat of a salt-water bath. This substance is very well known to the chemist, who distinguishes it from stearin. It appears probable however that by boiling in alkaline solutions it is converted into stearic acid; but additional experiments are required to determine its nature with precision.

Margarita, Dr. Læus's name for the Concha Margarita or Matrix Pellucidus, Mytilus Margariferae of Linnaeus, Melagrina margarita of Lamarck. [AVICULA]

Margaritacea, M. de Blainville's name for his type, Margarita, which comprises the genera Valeria, Melanora, Perna, Crenulata, Incisula, Cauellia, Pulvinata, Gerovila, and Articula. [AVICULA: MALACALC]

Margaritic Acid. When eight parts of castor oil are heated with alkali, the crystals dissolved in four parts of water, by heating them together for some minutes the oil is rendered completely soluble in water. MM. Bussy and Lecanu have discovered in this soap three different fatty acids, the margaritic, ricinie, and elatodiace, which are obtained by settling them in boiling alcoholic hydrochloric acid. Those acids form a reddish yellow oil, which at the temperature of about 60 Fahr. deposits a small quantity of solid matter, which is the margaritic acid. This is to be pressed between folds of blotting-paper, then dissolved in boiled olive oil in which it separates in crystalline scales which reden litmus paper. This acid fuses at about 270 Fahr.; its saline compounds, which however are but little known, are called margarites. According to Bussy

and Lecanu hydrated margaritic acid is composed of Hydrogen 10-51; Carbon, 70-50; Oxygen 18-99. MARGARON, a solid white fatty matter which crystallizes in pearly scales, and is obtained by distilling margaric acid with excess of lime. It fuses at about 179 Fahr. in a meltile, soluble in fifty times its weight of hot alcohol, and five times its weight of water. It consists of a hydrochloric acid of heat in closed vessels it distills almost unchanged; it burns in the air with a brilliant flame. Nitric acid sets it slightly upon it; sulphuric acid chars it, and sulphurous acid is given out. The alkalis do not act upon margaric.

This acid is composed of—Hydrogen 12-47; Carbon, 83-37; Oxygen 3-21.

MARGATE, a seaport town on the coast of Kent, in the parish of St. John, hundred of Ringkaw, and Isle of Thanet, 40 miles east-north-east from Maidstone, and 15 miles from the direct road to London. It is derived from Meragata, signifying an opening or cave into the sea. Hasted, in his 'History of Kent,' published in 1799, says, 'The town of Margate was till of late years a poor incon siderable fishing-town, built for the most part in a hole, and the harbour asfor the most part in a hole, and the harbour as

and Squares, &c., are of a superior description. The spring water is excellent and the supply abundant. The shore is well adapted to sea-bathing, and to this circumstance, in addition to its gentle, healthful air, the vast extent of a spacious bathing beach, and the facility of communication with the metropolis, means of steam-vessels, must be attributed the rapid increase in the population of the parish of St. John, which in 1831 amounted to 10,359. A handsome new church has been built at Margate within these few years. There is an hospital, called Draper's Hospital, founded in 1778 by Michael Youkley, a member of the Society of Friends, for the housing and maintenance of decayed housekeepers.

The sea-bathing in western Kent is well adapted to sea-bathing, and to this circumstance, in addition to its gentle, healthful air, the vast extent of a spacious bathing beach, and the facility of communication with the metropolis, means of steam-vessels, must be attributed the rapid increase in the population of the parish of St. John, which in 1831 amounted to 10,359. A handsome new church has been built at Margate within these few years. There is an hospital, called Draper's Hospital, founded in 1778 by Michael Youkley, a member of the Society of Friends, for the housing and maintenance of decayed housekeepers.

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MOLKEX.

Gian Gastone died in July, 1737, and Tuscany became subject to Francis, who, in January, 1739, repaired to Florence with his consort. Upon the death of Charles VI, in 1740, the king of Prussia, the elector of Bavaria, the elector of Saxony, France, Spain, and the king of Sardinia, agreed to dismember the Austrian monarchy, to parts of which each of those powers laid claim. Maria Theresa, however, with a spirit and decision remarkable for her age, lost no time; 1: ‘new schools,’ one in each county to serve as a model for all the other schools in the province; 2: ‘principal schools,’ in the large towns; 3: ‘communal schools,’ in the small towns and villages. A director had the superintendence of the normal schools; those of the large towns the superintendence of the communal schools under the parish priest and an assessor of the communal council. A central commission of studies was also appointed to superintend the whole, which received annual reports, and examined candidates for the masterships. Maria Theresa made the whole state a school, and devoted all her energies to intellectual instruction in the communal schools. She promised an extra remuneration to those teachers whose wives taught the girls sewing, knitting, spinning, &c. This plan answered extremely well, especially among the peasantry on account of its economy, and it was found possible to earn as much as half a florin a day. This was the beginning of that system of popular education which has since been extended through the Austrian monarchy.

Maria Theresa was a pious woman; she was a sincere Roman Catholic, but not a blind devotee of Rome, and she knew how to discriminate between the temporal and spiritual jurisdictions. In her instructions to the Junta, or Board of Public Economy, dated June, 1768, she states the principle that ‘everything which is not of divine institution is subject to the supreme authority of the state.’ Agreeably to this principle she made several important reforms in the temporalities of the clergy: she suppressed the pensions charged at Rome upon benefices; she forbade the claims of the clergy on little villages and ecclesiastical bodies; she ordered all the property of the clergy to be registered; she placed the convents under the jurisdiction of the respective bishops, and in temporal matters under that of the civil magistrate. She put a check to the <ref>domination</ref>; she took away from her Italian dominions: she took out of its hands the consorship of books and gave it to a commission of civil magistrates appointed for the purpose. In Tuscany, which was administered by a council of regency in the name of her son and grandson Leopold, she ordered that it should be joined to the inquisitors in all suits for heresy. She also took away the stibiri, or armed force, which was before under the orders of the inquisitors. The Inquisition of Lombardy and Tuscany was finally abolished under the reign of her successors Joseph II.

Maria Theresa possessed the strong affection of her Belgian subjects, and it required all the subsequent rashness of Joseph II. to detach them from their loyalty to Austria. The Belgian capitalists eagerly supplied the loans which the court of Vienna was obliged to contract during the Seven Years' War.

In Lombardy the administration of Maria Theresa and of her minister Count Firmian was a period of returning happiness for that fine country, after the vicissitudes of the preceding wars and the preceding misrule of the Spanish governors. The empress ordered a new censimento, or valuation of estates, for the purpose of an equitable assessment of the land-tax; she caused the bilanismo, or regular bounties, to be made; she abolished the custom of farming the various branches of the indirect duties to the highest bidder, made regulations to protect the peasants against the oppression of their feudal superiors, and established representative councils over the communities. This was the period in which she began, in short, and effected to a considerable extent, that great legislative and administrative reform which was completed under her successor Joseph II. Firmian encouraged men of learning, and protected them against the cabals of their enemies. Pietro Veronesi succeeded him as minister-president, and president of the financial board; Boccaccio was appointed professor of political philosophy; Carli was made president of the council of commerce; and the advice and suggestions of these men were listened to, appreciated, and followed.

The Adda to the Marceless, was executed under Maria
Theresa. In 1749, soon after she obtained peaceful possession of Lombardy, the duchy of Milan contained 900,000 inhabitants; in 1761, the population had increased to 1,130,000. Theresa was a liberal writer of our times, 'had never enjoyed so much happiness and tranquillity as under her reign; it is recorded to her praise that she wished to be informed of every act of the administration, that she gave frequent audience to the ministers and politely entertained the nobility as to the noble and rich, that she listened benevolently to all, either granting their petitions, or, if she denied them, giving reasons for her refusal, without illusory promises or vague circumlocutions. She declared, just before her death, which happened on the 20th of October, 1780, that 'nothing reprehensible had been done in her name, it was certainly without her knowledge, as she had always wished the welfare of her subjects. During a forty years' reign she always showed a love of justice and truth, and she stated that the people, in her consciousness, found the surest of alleviating distress and doing good to the people that can render the weight of a crown supportable to the wearer.' (Bozzi, *Storia d'Italia*, b. vi., ch. 13.) Another merit of Maria Theresa is the propriety of her private character; her personal conduct was disapproved by that decency and self-respect, united with much simplicity of manners, which is become a distinctive characteristic of the Austrian imperial family. Maria Theresa will ever rank high among illustrious women, as one among others who have been benefactors of mankind. With her ended the house of Austria Habsburg, and at the same time began the present dynasty of Austria Lorraine.

Frederick II. appeared really affected when he heard of the death of Maria Theresa. Writing to D'Aheim, he said that 'although he had made war against her, he had never been her personal enemy; that he always respected her, and that she was an honour to her sex and the glory of her throne.'

F. BARONIA, J. U. AN, was born at Talavera in 1536. He early showed great talents, which were developed under the eminent teachers of the university of Alcalá, such as Father Cyprian of Huerga and others.

At the age of seventeen Mariana joined the Jesuits, who had a great reputation for learning, and was chosen by the college for his instruction and education. He was well prepared for the Jesuits, and was one of the oldest students. He had to pass two probationary years at Simancas, under Saint Francis of Borja, the hereditary duke of Gandía, and favourite of Charles V., who had pronounced the world to join the new order. After this probation Mariana returned to Alcalá to resume his studies. In 1565 he was appointed to a professorship by Laynez, the second general of his order, who framed the rules of the Jesuits, raised their aspirations, prepared them for the influence which they afterwards exercised, and opened their splendid gates to all the world.

In this college Mariana, at the age of twenty-four, taught scholastic philosophy and divinity. Among his pupils was the young Jesuit (afterwards cardinal) Bellarmine. Mariana was also professor of Oriental languages, and then came to Paris two years after on the same mission, in which he was still more successful. Seven years of unremitting application in an ungenial climate so greatly impaired Mariana's health, that he was permitted to retire to Toledo, near his birthplace. But his talents and moral worth were still put in requisition. He restored and edited the works of Saint Isidore, to which he added some valuable notes. When Leon de Castro questioned the orthodoxy of Arias Montano, for introducing Rabbinical readings and the 'Pseudo-Aristotian' in the 'Pseudo-Philo,' or 'Pseudo-Philo Polyglott,' a new edition of the 'Complutens,' which Montano had undertaken at the command of Philip II., Mariana silenced the noisy polemic by his historical, ecclesiastical, and biblical lore, as well as by the fair and candid form of his style.

In the mean time he proceeded during his leisure hours with the great work which he had long contemplated. He had observed that the sudden rise and ascendency of Spain excited a general interest and curiosity abroad, while its origin and causes were either unknown or misunderstood. The Spanish historians, though numerous, were at that time little read, and some of them were hardly known. His 'History of Spain' first appeared in twenty books, under the title 'Historia de rebus Hispaniae,' vol. I., Toledo, 1592, little esteemed even at that time, and not extensively read, in which form it appeared in the complete edition of 1605, published at Mainz. This compact and lucid exhibition of an unbroken chronological narrative, from the origin of the Spanish nation to the death of Ferdinand the Catholick, is a history of all the Spanish kingdoms, which had hitherto been treated separately. A subject so extensive, expressed in classical Latin, met with universal favour and acceptance. A Spanish translation soon became necessary, and carefully Mariana accomplished the task by the publication of the work through four successive Spanish editions in his lifetime.

Mariana has been charged with credulity; but traductioure held sacred in times past, although rejected in the present day. He has been called 'the historian of the day,' 'the great historian of Spain.' The modern critics admit that Mariana could not dismiss with the disdainful smile or the ready presumption of modern criticism, articles which will never obscure the brilliancy of his digressions on the most important events of the world, to which appear as great empires and dynasties, mingled with some other belonging to the history of Spain.

The many feelings of the historian, his noble indignation against crimes, his bold exposure of the misdeeds of princes and their subjects, deserved still higher commendation. He, as well as Ferrara and Masdeu more recently, has spread a gross instance of Queen Urana's licentious conduct; but on the other hand, the defence of Queen Blanca's honour might have been more creditable to Mariana. It is true also that Mariana did not use the license which his age and position might serve in the 'Kritik neuerer Geschichtsschreiber,' but to institute an inquiry into every minor detail, to comprehend a wide field of inquiry, and yet to open new and to discard old trodden paths, would have required the perseverance of his labours, and the sagacity of his judgement, to complete the undertakings. And if others had been invited to join in the labour of the investigation, a mortify composition might have been the only result of so much research, which it is almost impossible ever to combine into one entire and complete system. Mariana's works were found too original and faithful in their testimony: as in the case of the Condeable of Castile, Fernandez Velasco, at his worthy secretary Pedro Marmolino. The secretary, after having been a panegyrist of the new historian, tried to serve, and the art of writing history, to the honour of la Historia de Mariana.' He was discovered however, and roughly treated by Tamayo Vargas in 'La Defense de Mariana.' Probably to this criticism may be traced many improvements in Mariana's second Spanish edition of his history, which appeared at Madrid, 1696. It is on this edition and the various readings selected from the editions of 1617 and 1623, that the edition of Valencia is based, when contains ample notes and illustrations, 9 vols. 8vo., 1703. The edition also closes, like the original, with the death of Ferdinand and the Catholick Kings. It has subsequently been published at Madrid—1. The 'Compendium' by D. Miniana. translated from the Lati by Romero, fol. 1604. 2. A complete compilation of the Catholick Kings, from 1137 to 1728. 3. An alphabet of the same, brought down to the year 1608, 9 vols. 8vo., with portraits.

Mariana's little respect for potentates and great personages was denounced with greater asperity when his De Rege et Reginis Institutione was printed in 1599. He ends his 'book on the life of Henry IV.,' in 1594, Jean Chatelet, who has studied among the Jesuits, not only involved the whole body in the odium of his crime, but provoked a decree for their expulsion from France. Finally the assiduities of his enemies were increased by the Jesuits, excited such horror that the cardinal of Paris condemned the new tract of Mariana to the flames and his treasonable doctrines, as they were called, were declared during the whole of that age of loyalty and part of the Jesuits, not such a contemptible subject, but a chief ground of accusation against the Jesuits. The Jesuits have indeed occasionally supported the claims of people against their rulers, but always with a view to the interests of their own body only. Mariana, on the contrary, discussed this subject on better and higher grounds. Mariana's learned and a much stronger list on his affections than the interests and plans of his order. His defence of Arias Montano, already mentioned, he was a lover of his order, and exerted his influence in every sort of historical research. Mariana published also, in 1605, an imperfect work, 'De Ponderibus et Mensuris,' a subject...
which his countrymen Lebrija or Nebrija, Diego Covarrubias, Pedro Ambrosio Morales, and Arias Montano, had treated before, and which Eusebius, Freret, Paucoten, &c., have pursued much further since.

The noble character and the profound erudition of Mariana are also displayed in his 'Tractatus Septem,' Colonge, 1609. The second of these treatises, 'De Estudios eligiis,' is an epitome of his report on the fierce controversy between Gallicanism and Catholicism. The fourth, 'De Mutacione Monetis,' provoked the indignation of the Duke of Lerma and his partners in the system of general peculation and frauds which Mariana exposed. He foretold the action which threatened the Spanish nation; and his words, which have been himself has been remembered when the opportunity was gone. As a reward for proclaiming such unwelcome truths, at the age of 73 he suffered a whole year of judicial trickery, humiliations, and confinements. When he finally reached Madrid. In searching his papers another episode was found in the 'Del Gobierno de la Compania,' or on the defects of his order, in which he also pointed out the means of correcting them. Copies of this MS. had multiplied so alarmingly, that, at the request of the captors' death, the general of the Jesuits, Vitaleschi, issued a circular, dated Rome, July 29, 1624, enjoining the collection of such papers in order to be burnt. Still that measure did not prevent its being printed at Bordeaux in 1635, and reprinted elsewhere in so many editions, that a copy of it was found in the archives of the Jesuits of Valencia at the time of their sudden expulsion from the Spanish dominions in 1767; a blow which helped to complete that downfall against which Mariana had most earnestly warned his brethren so long before.

After his persecution he made an epitome of the 'Bibliotheca' of Photius, translated some homilies, revised his 'History of Spain,' and published a supplement, or rather a summary, or concise annals of Spain from 1315 to 1612. At this time he was at the place of execution, the general of the Jesuits, Vitaleschi, had saved the New Testament, availing himself of the best Hebrew commentaries, and some valuable and very early MSS. which dated from the age of the ancient Gothic dominion. This work secured for him a place among the best commentators in the 'Història de l'Evèque de Vaux' of the hypercritical Father Simon, who is usually unfavourable to Spaniards.

Bayle, in his 'Dictionary,' supposes Mariana to be also author of a work 'De Republica Christiana,' but neither the Alegambe nor Nicolas Antonio, both of whom mention it. Stevens, the English translator of Mariana's history, mistates some particulars of the author's life, and very uneasily compares him with Raleigh. He mentions twice the extent of all his publications. He ended a long life, almost entirely devoted to the service of his own and future generations, on the 6th of February, 1625, in the eighty-seventh year of his age and the forty-ninth of his retirement to Toledo. On hearing of his death, Francis Contreras, president of the council of Castile, said, 'To-day has the council lost its restraint.'

Besides the authorities quoted there may be added:—

MARIE ANTOINETTE, born at Vienna, in November, 1755, was the daughter of Francis I., grand-duke of Tuscany, and of the archduchess Jean of Austria, who was born at Florence in 1757, and was married in 1790 to Henri IV. of France. She was handsome, and Henri was for a time really attached to her; but she was violent, jealous, and obstinate, and seldom passed a week without quarrelling with her husband. The memoirs of her court are replete with these domestic bickerings. But the best historical critics acquit her of any more serious misconduct, and especially of the odious insinuation thrown out by some writers, that she was privy to the murder of her husband. Henri at that time was just going to set off to the throne, and he had some reason to leave her regent of the kingdom. Hérault only observes that she did not show sufficient grief for the death of her husband. Mary was weak rather than wicked; she had the aspirations of ambition without corresponding mental powers; and when she became regent, during her son's minority, she found herself incapable of bearing the weight of the adm.

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MARIENZELL, or MIAZELL, a small town in Upper Bavaria, the most celebrated place of pilgrimage in the Austrian dominions, is situated on a low bank of the river of an extensive valley. It consists of only three streets, with 120 houses, of which nearly 50 are inns and taverns, and the population does not exceed 1000. The most considerable edifice is the church, built in the Gothic style, in which is preserved the head of St. Wenceslas, the patron saint of the region. The church was burned by fire in 1297, when the whole town, except some houses, was reduced to ashes. The roof and the steeple of the church were destroyed, but the treasury and the statue of the Virgin Mary were saved. It was, however, necessary to use a great deal of money to repair the church, which is now more splendid than ever. The number of pilgrims that resort thither from all parts of the Austrian monarchy is estimated at 100,000 every summer. Under the reign of the emperor Joseph, the most notable event was a fire in 1819, consisting of about 12,000 pilgrims, who were handily dressed in the costume of the servile, in which they came, presented a striking and interesting appearance.}

MARIESTAD. [SWEDEN.]

MARIKINA. [MIDAS.]

MARINGONDA. [Aytes, vol. ii., p. 547.]

The most general principle upon which insurance are made, whether of property against the chance of fire, of human life against the accidents or contingencies of mortality, or of ships and their cargoes against the multiplied risks to which they are exposed, is the same, that of reducing each individual risk in every case, and as much as possible to a loss, to the average loss of a great number of individuals or cases. Marine insurances differ, however, from fire and life insurances in the mode of conducting the business, as well as in the diversified nature of the risks to which they are subject. The principle of fire insurance is, in a great part of the time of peace, the inclusion of the chance of fire, of piracy, or of barony of the master or crew, i.e., the running away with the vessel by these parties, as well as the more ordinary misfortunes resulting from storms, sunken rocks, caps, and the like. To these are superadded, in time of war, the chance of capture by an enemy, and all restraints of foreign powers or governments.

Until a recent period nearly all the marine insurances effected in London, which is the great emporium of such transactions, were undertaken by individuals who became answerable for comparatively small portions of the sums insured, differing thus from other kinds of insurances where the whole risk was taken by a joint-stock association. Until 1824 it was not lawful for any two or more individuals to enter into a contract of insurances which had the same condition that he must gather for taking upon themselves sea-risks, and all the business of this kind transacted in London was undertaken by a class of persons called underwriters, from the employment of binding themselves to the conditions of the contract by writing their names and the sums which they assured under the deed in which these conditions were set forth. The exceptions to the limitation of partnerships, just mentioned, were made in favour of two chartered companies, the Royal Exchange and the London Assurance companies. Each of these companies had its turn to alter the law in this respect, and were always, successfully resisted on the part of the underwriters since 1824, but since that time it has been lawful for any number of individuals to enter into a marine insurances, which may be either individual insurances, or marine insurances, and many joint-stock companies for the purpose have been formed and put in action with advantage to the public. Before the year 1824, several insurance edicts, which were in fact mutual insurance associations, were made of premium, and were considered legal. In these the premiums were periodically called upon to pay a proportion of the losses sustained by the members of the club generally, the rest of his contribution being made to depend upon the value of the property and the conditions of the contract. No such loss, that would have been made good to him. These clubs, which since then are, are still confined to persons engaged in trade, which are still confined to persons engaged in trade.
in particular branches of trade, such as the coal-trade of the North of England, where the risks incurred by the different members are generally equal in degree, a condition which is necessary in order to render the association equitable.

The policy, or contract of insurance, must contain the name of the ship, when known, and of the master, with the nature of the voyage, and must describe also in good faith any circumstances which are out of the ordinary or understood course in similar risks or voyages, such as any contemplated deviation from the route usually followed. The burden of proving insurances is sometimes done by the merchants or owners of the ships or goods insured, but more frequently through the agency of insurance-brokers, whose remuneration comes from the underwriters or insurance-offices, as the case may be. The premium in marine insurance consists in an allowance of 5 per cent. on the amount of the gross premium in each case, and in a further allowance of 12 per cent. upon the net amount of premiums paid by them to the underwriters or offices at the end of the year, on deducting all losses and averages recovered for the assured.

The policy of insurance, when underwritten by the assured, bears a declaration of the amount of premium having been paid, but in practice that payment is not made until some event takes place out of which the risks are taken, unless in the case of a total or partial loss, when all premiums outstanding upon the account of the merchant or broker, as the case may be, are allowed as part of the amount of the loss. When a broker is employed, the underwriters give credit to him, and not to his employers, for the amount of premiums, and they have recourse for the same only to the broker. As some compensation to the broker for the 12 per cent. allowance above mentioned, which he foresees in the event of a loss, he makes a charge against the merchant by whom he is employed of ten shillings for every hundred pounds upon the amount recovered.

The rate of premium varies with the nature of the ship and cargo, the length of her voyage, and the risks of the voyage. As regards this latter point the underwriters and managers of insurance companies are enabled to judge with great accuracy by means of a register kept under the superintendence of a committee of merchants and underwriters, in which every necessary particular concerning every merchant ship is inserted from the surveys of competent officers appointed for the purpose, who are paid certain fees for their trouble by the owners. This register is of as much importance to the shipowner as it is to the underwriter, and the insurance charge made for premium of insurance is less than where that quality is bad or doubtful; and in the event of loss it gives ready means for rebutting the charge of unaccountability which might otherwise be found, such a charge, when presented to the law, would no doubt be exonerated by the underwriter from payment of the loss.

The losses for which underwriters are liable are either total or partial. In some cases it may happen that the claim upon a underwriter exceeds the amount of his subscription, as when a ship meets with damage, and after quitting a port where she has been repaired or refitted, is wrecked or otherwise lost. The claim in such cases would not be only for the amount expended in repairs, but also for the value of the ship or goods, when lost. Partial loss or the ship is called an average loss, and averages again are divided into the two classes of general average and particular average. Under the first of these heads are included all losses of a part of the property voluntarily incurred for the preservation of the remainder, as for instance, the bank of a ship in a storm on her winds. And to right her the masts are cut away, this constitutes a general average, and the loss must be borne in shares proportionate to their value by the owners or insurers, as the case may be, of the ship and cargo. So if a ship lying at anchor should be blown on shore, the owner must be made responsible for the damages occasioned by the storm on shore, and the table should be cut, or if to lighten her in a storm part of her stores or cargo should be thrown overboard, this would constitute a general average, and must be met by the owners or insurers of the whole property as before noted. When a ship has been wrecked, the loss caused by the cargo meets with damage from any of the chances against which insurance is provided, but which is not incurred voluntarily and to prevent a greater loss. In these cases the damage must be made good by the insurer of the ship or of the goods which are damaged, and not by a general contribution from all. Where this partial damage happens to the ship it is usual for the underwriters to reinstate the same, paying two-thirds only of the cost, it being considered that the owners of the vessel will benefit to the extent of the remaining one-third by receiving new articles in place of those in use which have been lost, or by the better state in which the vessel will be placed by the repair. Goods which are peculiarly liable to damage, either from their nature or from the manner in which they are packed, are not entitled to claim particular average except the ship be stranded, or except the damage shall exceed a certain per centage of the value. Corn, seed, flour, fish, salt, and fruit are not liable to particular average, whatever be the amount of damage, except the ship be stranded; and underwriters, when they are insured by the assured free of particular average, unless the damage should amount to five per cent. or more of their value, with the like exception as regards stranding.

It is not possible to give within reasonable limits more than a very short view of the law and practice connected with marine insurances, concerning which many volumes have been published.

The policies of insurance on sea risks are liable to stamp duties, which vary with the nature of the voyage and the rate of the premium.

On coasting risks where the premium does not exceed 20s. per cent. the stamp duty is 1s. 3d. per cent.; and where the premium exceeds that rate it is 2s. 6d. per cent. On foreign and foreign coasting risks the rate is higher than 15s. per cent., the duty is 1s. 3d. per cent.; when the premium is between 15s. and 30s. per cent. the duty is 2s. 6d. per cent.; and when the premium exceeds 30s. the duty is 5s. per cent.

Vessels engaged in voyages of long duration, such as the South Sea whaling-ships, or vessels employed in a particular line where the risk is unvarying, are sometimes insured for a specific time. The stamp duty in such cases is 2s. 6d. per cent. for a period not exceeding three months, 4s. 0d. for six months, and 6s. 8d. for twelve months, but no time risk for a longer period than twelve months can be covered by the same stamp, and a new policy must then be taken out.

MARINER'S COMPASS, [COMPASS, MARINER'S."

MARINES, not remitted to serve as soldiers on board ships of war in naval engagements; and on shore, in the event of a descent being made upon an enemy's coast. In the British service, they also assist occasionally in performing some of the operations connected with the working of the ships; but, of course, they are not to be considered as a branch of the navy. In this country in France were men skilled in the practice of the useful trades, who, when unemployed by the government, lived on shore on half-pay; receiving only the full pay when called upon to serve at sea. This regulation did not then often induce the administration of Cardinal Richelieu, companies of marine soldiers have been constantly retained on full pay.

It is not precisely known at what period distinct corps were established; it is, however, certain that the number of persons in training to become good seamen; and, in Burchett's 'Naval History,' quoted by Grose ('Mil. Antiq.' vol. i.), it is said that they were discharged from the regiments and entered on the ship's books as foremast-men as soon as they became seamen.

In the beginning of Queen Anne's reign (1702), six regiments of maritime soldiers were raised; and among the regulations concerning their service it is stated that they were to be quartered, when on shore, near the principal ports. When on board ship, they were to be paid at the same rate as the land forces, and the same deductions were to be made for clothing. At sea they were to be allowed provisions equal in every respect to the shares of the seamen, without suffering any diminution of pay on that account.
Mar. 420

In 1749, the then existing regiments of marine soldiers, ten in number, were disbanded; and six years afterwards, on the recommendation of Lord Anson, there were raised 130 companies, consisting in all of above 5000 men, who were put under the immediate command of the lords of the admiralty, and whose head-quarters were appointed to be at Plymouth, Portsmouth, and Chatham. The corps of marines, as it was then called, has subsequently been considerably increased; in 1759 it numbered 18,000 men; and during the last war its strength amounted to about 20,000 men. An additional division was, by an order of council in 1805, established at Woolwich; and there are two companies of marine artillery, whose head-quarters are at Portsmouth.

The marines are now clothed and armed in the same manner as the infantry of the line, and, like all the other royal regiments, their scarlet uniform has blue facings. In an engagement at sea, they annoy the enemy by a fire of musketry from the tops and deck; and they repel with the bayonet in arquebuse nature and spirit. As the marines are familiarly called, have often distinguished themselves when acting on shore; and their meritorious services at the taking of Belleisle (1761), in the battle of Bunker's Hill (1775), in the defence of Acre (1799), and very recently at John-day Head, off the coast of India, have earned for themselves a lasting reputation.

The royal corps is commanded by a lieutenant-colonel and a major-general, who are naval officers holding, in addition to their rank as such, those military titles. There are also four lieutenant-colonels, two of whose and two of whose commandants are by commission of the admiralty.

No commissions in the corps are obtained by purchase; and the officers of marines rise in it by seniority, as high only however as the rank of colonel-commandant.

**MARITZA.**

**MAROTTE, EDMÉ.** Little is known of his life. He was a Burgundian born, a priest by profession, and resided in the earlier part of his philosophical career at Dijon. He was afterwards prior at St. Martin, near Beaune, and died May 12, 1684, having been one of the first members of the Academy of Sciences. See the cloje by Condorcet, vol. i., p. 74 of his collection.

Several of the writings of Mariotte were published by himself. In 1717, two volumes quarto, Leyden, were published under the title 'Œuvres de Mariotte,' in two volumes quarto, Leyden, 1717. Another edition (perhaps the same with a new title) was published at the hand of James Smith, in London, in 1748. His most important works relate to the motion of fluids, on evaporation, on vegetation, on the nature of the air, on heat and cold, on the nature of colours, on hydraulics, on some phenomena connected with light, on levelling, on the motion of the pendulum, and on the congelation of water, and on the combustion of gases.

Condorcet says of Mariotte, that he was the first Frenchman who carried with him into experimental philosophy a spirit of observation and doubt, and inspired others with that caution and timidity which are so necessary to those who are about to enter upon the search for truth by their own responses. His writings, though more connected with mathematical deduction than those of Robert Boyle, somewhat resemble them in the miscellaneous character of the experiments with which they are crowded. The name by which the name of Mariotte is known to a reader of modern works are the following:

1. He was the discoverer of that law of elastic fluids which now goes by his name; that is, of the elastic force being exactly in the inverse proportion of the space which a given column of fluid occupies. Subject to such alterations as difference of temperature may require, the formula derived from this law is now one of the fundamental parts of aeronautics.

2. He discovered that air, and air in a state of condensation, is rare in liquids.

3. He found that the part of the retina in which it meets the optic nerve is not capable of conveying the impression of sight.

Among minor matters, we may mention the common gravel and feather experiment, which he first made with the air-pump.

**MARITIME LAW. [ADMI Ralph EXECUrs; SHIPPING.]**

**MARITZA,** the modern name of the Hebrus, the principal river of Thrace. The basin of the Hebrus is enclosed between the chain of Hemus, or the Balkan, on the north, and Mount Rhodope, the modern Despot, on the south, the first divides it from the basin of the Danube, and the other from that of the Styrian. [AMBROSIUS.] The Hebrus is a channel of Meander, about 25° 18' lat. and 24° E. long., and flows in an easterly direction for about 100 miles, receiving numerous affluent streams from both chains of mountains: it passes by Tatar Bazirik, Philippopolis, and Chirimeni (the antient Ansus), where it diverges to the south-east until it reaches Adrianople, where it is joined by two large streams, the Tonja, or Tanicius, from the north, and the Arda, or Harpasous. After passing Adrianople the Hebrus turns to the south, receives the Erkenhe (the antient Agrias), coming from the direction of Constantinople, flows by the slope of a promontory, enters the gulf of Ènous by two mouths, opposite the island of Samothrace. The whole course of the Hebrus is above 300 miles. It is navigable for small craft as far as Adrianople, about one-third of its course.

**MARS, THE GOD OF WAR.** [SAY MARINE.] A god of war, of the fourth order of the gods, a son of Jupiter and Venus. His temple was at Alba Longa, on the banks of the river Anius, and the worship of Mars was of the greatest antiquity. He was represented under various shapes; as Mars with a lion's head, Mars with a club and spear, Mars with a sword, and Mars with a spear and shield. He was the god of war, of agriculture, and of husbandry. He was the patron of beggars and thieves, and was characterized by the Roman festival of the 19th of June, when the army was reviewed, and the worship of Mars was celebrated. The festival of Mars formed part of the festival of Quirinus. The festival of Mars was celebrated by the Romans from the 23rd of May to the 19th of June. The festival of Mars was celebrated by the Romans from the 23rd of May to the 19th of June. The festival of Mars was celebrated by the Romans from the 23rd of May to the 19th of June. The festival of Mars was celebrated by the Romans from the 23rd of May to the 19th of June. The festival of Mars was celebrated by the Romans from the 23rd of May to the 19th of June. The festival of Mars was celebrated by the Romans from the 23rd of May to the 19th of June. The festival of Mars was celebrated by the Romans from the 23rd of May to the 19th of June.

**MARIUS, MARcus.** A Roman general, born at Rome, the 21st of March, B.C. 163, died at Alexandria, B.C. 86. He was a friend of Cicero; was consul for the fourth time in B.C. 107; and when, on one occasion, Cicero was asked, where they should find so great a general when he was gone, he is said to have replied, placing his hand upon the shoulder of Marius, 'Here perhaps.'

He had been a member of the four-storied tribe of the plebs, through the influence of Cæcilius Metellus, according to Plutarch, but more probably in consequence of the fame he had acquired in the Nametian war. In this office he showed himself, as he did throughout the whole of his life, a most determined enemy to the partisans of Sulla, and when, on one occasion, Scipio was asked, where they should find so great a general when he was gone, he is said to have replied, placing his hand upon the shoulder of Marius, 'Here perhaps.'

Marius obtained the praetorship with great difficulty, in consequence of the violent opposition of the patrician order, who accused him of having obtained the office by means of bribery. At the expiration of his praetorship the province of Cilicia was given him, which he performed with great applause. On his return to Rome, he was anxious to obtain the consulship; but he did not venture to become a candidate for many years after. He continued however to rise in public opinion, and appears to have lived about this time to have married Junia, the daughter of a Roman family, who was aunt to the celebrated Julius Cæsar.

In B.C. 109 he accompanied Metellus into Africa as the legatus of Lucilius (second in command); and by his courage and conduct in the war with Jugurtha he added greatly to his popularity. On the expiration of his praetorship he was elected consul for the following year (B.C. 106) obtained possession of the person of Jugurtha, who was treacherously given up by Bocchus to his quaestor Sulla. [JUGURTHA.] Marius remained in Africa during the next year (B.C. 105) in which the consuls Manlius and Servilius discharged the business of the war. Marius was at first defeated by Cnaeus平衡, with the prodigious loss, according to Livy (Ep. 57), of 80,000 soldiers, besides 40,000 camp-followers. The news of their defeat caused the greatest consternation at Rome, especially to the Tatian Cornells and Tiberius threatened the success of Italy; and Marius was again elected consul in his absence, without any opposition from the parties in the state, as the only man in the state who was able to save it from impending ruin. Marius entered upon his second consulship B.C. 104, and
triumphed on account of his victories over Jugurtha; but in consequence of the threatened invasion of Italy having become a matter of the utmost importance, the consulship of the Cinibri into Spain, Marius was again chosen consul in the two following years (a.c. 103, 102). In the fourth consulship of Marius (b.c. 102) the Cinibri, having been defeated by the Celtiberi in Sabinia, fled to the Roman consul. Of his five terms of office he was divided into two divisions: the one, consisting of the Teutones and Ambrones (a Gallic people), through Gallia Narbonensis; and the other, comprising the Cinibri, by way of Noricum. Marius defeated the Teutones and Ambrones near Aquae Sextiae (Gallia Narbonensis) with Agrippa, who by prefacing precept the foot of the Alps to oppose the passage of the Cinibri, retreated first to the other side of the Athesis (Adige), and afterwards quitted this position also without waiting for the enemy's attack. In the following year, a.c. 101, Marius, who was again elected consul, for the fifth time, joined his forces with those of Catulus, and entirely defeated the Cinibri in the plain of Vercelli (Vercelli), situated to the north of the Po, near the Sesates (Sesia). In these two battles the Teutones and Ambrones are said to have lost an incredible number of men, and 80,000 taken prisoners; and the Cinibri 200,000 men (140,000 slain, and 60,000 taken prisoners). (Livy, Ep. 63.)

Marius again became candidate for the consulship for the following year; but now that the fear of the Gallic invasion was no longer a matter of the greatest importance, the spirit of the patrician party. He nevertheless obtained the consulship, in great part owing to the exertions of Saturninus, the tribune, who is described as a man who scribbled at the consulship to obtain for himself the command to lead the events of the sixth consulship of Marius, which are some of the most important in this period of Roman history, are imperfectly narrated by the historians. It appears that an Agrarian law, proposed by Saturninus and supported by Marius and one of the praetors, named Catulus, notwithstanding the most violent opposition of the patrician party; and that Metellus Numidicus was driven into exile in consequence of refusing to take the oath of conforming to the law. When the election of consuls for the ensuing year was on, his name was opposed to the consulship; the date for the office, was murdered by order of Saturninus; and the senate, perceiving the city to be in a state of anarchy, passed the usual decree, 'that the consuls should take care that the republic should receive no injury,' by which almost absolute power was vested in the consuls. Marius, unable or unwilling to protect his old friends, besieged Saturninus and Glaucia, who had seized upon the capitol. They surrendered themselves to Marius on the promise that their lives should be spared, but it appeared afterwards to be impossible that Marius, after the blow which had been given to the popular party by the surrender of Saturninus and Glaucia, would not have been able to save their lives, even if he had made the attempt.

At the expiration of his consulship, Marius left Rome to avoid avenging the triumph of the patrician party in the return of his old enemy Metellus, whose sentence of banishment was repeated after the death of Saturninus. According to Plutarch, Marius went to Cappadocia and Galatia, under the pretence of offering a sacrifice which he had vowed to Cybele; but with the real object of exciting Mithridates to war, in order that he might be again employed in military affairs, since he did not obtain much distinction in peace.

In 89 the Marian or Social war broke out; in which both Marius and Sulla were engaged as legati to the two consuls. Marius gained several victories over the enemy, but he no longer possessed that activity and energy which had distinguished him in his earlier years; and disgusted, it is said, with the reputation of Mithridates, he asked and received his command before the conclusion of the war. The Marian war had scarcely been brought to an end, before the civil war broke between Marius and Sulla. The command of the Mithridatic war had been assigned to Sulla, who was about to return, but Marius made every effort to wrest it from him, and is said by Plutarch to have gone every day to the Campus Martius, and to have performed his exercises with the young men, although he was now in his 70th year and very corpulent; in order to show that he was warmly supported by P. Sulpitius, the tribune, who possessed great property and influence; and a law was eventually passed that the command should be taken from Sulla and given to Marius. Sulla was with the army at the time besieging Nola; but as soon as he heard of the law which had been passed, he marched to Rome; and Marius and his adherents were obliged to quit the city. After wandering through many parts of Italy, Marius escaped with the greatest difficulty to Africa; but he could not get landed at Carthage, being hailed by the governor of the province, sent word to him, that unless he quitted Africa, he should treat him as a public enemy. "Go and tell him," replied Marius, "that you have seen the exile Marius sitting on the ruins of Carthage." In the following year, a.c. 81, the governor who had gone to Greece to oppose Archelaus, Marius returned to Italy in order to join the consul Cinna, who, in his attempts to abrogate the laws of Sulla, had been driven from Rome by his colleague Octavius, supported by the patrician party. Shortly after the death of Cinna at the head of a large army; and a general massacre of the opposite party ensued. Marius always appears to have been of a fierce and unremitting temper; and the sufferings he had lately undergone, together with the fact that he displayed in his seventh consulship, tended to exasperate him more than ever against the party which had opposed and thwarted him during the whole of his life. All the leaders of the patrician party who were unable to escape from Rome were put to death by order of Marius, on the strength of the decree made by the Ugrians of Marius in the year before the death of Cinna, put himself to death in order to avoid assassination; and among the numerous illustrious patricians who fell were C. and L. Julius Caesar, and the celebrated orator M. Antonius, is so frequently mentioned by Cicero as one of the principal speakers in the treatise 'On the Orator.'

Marius and Cinna declared themselves consuls for the ensuing year (a.c. 86), without even holding the comitia; but Marius died a year in the beginning of the year, on the 7th day of March, and was succeeded by Plutarch (c. 46), or the 13th, according to Livy (Ep. 80).

The character of Marius is chiefly known to us from his life by Plutarch, who appears to have taken his account from the 'Memoirs of Sulla,' the inestimable enemy of Marius. It cannot be denied that Marius, the first of those men who displayed in his seventh consulship, 'I have seen,' says Plutarch (c. 2), 'the statue of Marius at Ravenna in Gaul, which expresses in a remarkable manner his sternness and severity. Since he was naturally robust and warlike, and more acquainted with the life of a soldier than that of a minister, he was and haughty when in authority. It is said that he never learnt Greek, and that he would not make use of that language on any serious occasion; as if it were ridiculous to learn the language of a people who were subject to him. If his knowledge had been more acquainted with the Grecian muse and grace, he would not, after bearing so many honourable offices and performing so many glorious exploits, have crowed the whole by a most savage and infamous old age, in consequence of his yielding to anger, ill-tempered ambition, and innate vanity.'

(Plutarch's Life of Marius; Sallust's Jugurthine War; Epitomes of Livy; Velleius Paterculus; Cicero, De Oratore, ii. 2, 3; Clinton's Fasti Hellenici.)

MARIVAUX, PIERRE CARLE DE CHAMBLY

Marivaux, Pierre Carle de Chambly, was born at Paris, in 1684, one of the most popular romance writers of the eighteenth century, and one to whom that branch of literature is mainly indebted for the character and authority which it has acquired as a representation of actual life and manners, illustrated by the most polished and moralized theme and feelings. He began his career as a dramatic writer, and his pieces were for a long time the support of the Théâtre Italien. Yet although they display much ingenuity and talent, and procured for their author a seat in the Académie Francaise, they were not the subject of much interest, except as being productions of the same pen which gave the world 'La Vie de Marianne,' and the 'Paysan Parvenu.' Marivaux also wrote another romance, entitled 'Pharsamon,' every way inferior to the two on which his reputation rests, as 'Le Spectacle de la Gaieté' and 'Le Jeune Philosophe Indiscréte.' The inequality of his taste was also manifested by his 'Hommé Travesti,' which was published in 1716, was neglected from the very first, and has long been deservedly forgotten; while his two novels still charm by the master-touches with which they abound, by their
accurate and highly finished delineations of character, and by the intimate knowledge which they display of the human heart. Thus John, so far as lie is concerned, was not an author. He was not one of those who put on morality as a holiday suit when they show themselves in public; he did not, like Sterne, dip merely his pen in sentiment; nor was he, as too many others have been both before and since, a mere philosopher whose conduct belied. On the contrary, his life illustrated the lessons which he endeavoured to impress upon others. Benevolence to all, active sympathy for the unfortunate, and a philosophic indifference towards wealth and rank, are the dominant traits in his character.

He died at Paris in 1763.

MARJORAM, an aromatic potherb, used in cookery, especially among the French. It is the Originum Majornae of Linneus, or Majorana hortensis of Munch, a name that can hardly be applied to a herb, the garden type of which is little better than an annual; in a wild state it is a suffrutescent perennial.

MARK. [Money.]

MARK, ST., the Evangelist, is supposed by the greater number of modern writers to be the same person as John Mark, who is mentioned in the Acts of the Apostles (xii., 25; xiii., 5, 13; xv., 37). It is most probable that John was his Jewish name, and that he took the surname of Marcus when he went to preach among the Greeks. He was a cousin of Barnabas, one of the seven deacons chosen by the Apostles in Jerusalem, in whose house the disciples were wont to meet (Acts, xii., 12), and the nephew of Barnabas (Col. iv. 10). He left Jerusalem with Paul and Barnabas, about a.d. 44 (Acts, x., 19, 23), and accompanied them in their return journey to Antioch (Acts, xii., 25), as far as Perga in Pamphylia, where he parted from them and returned to Jerusalem (Acts, xiii., 15). About a.d. 53 we find him again at Antioch, when Paul proposed to Barnabas to visit the Asiatic churches. Barnabas wished to go alone, but Paul refusing on account of his having deserted them in their former journey, they separated from each other, and Mark accompanied Barnabas to Cyprus (Acts, x., 37-39). Paul appears to have been reconciled to him and had actually taken leave of Rome during his imprisonment, and is honourably mentioned in some of Paul's Epistles (Col. iv. 10; Phil., ver. 24; 2 Tim. iv. 11). We also find him with Peter in Asia (1 Pet. v. 13; see Stinger's Commentary on the First Epistle of Peter), but not accompanied by St. Paul, as he had been in the earlier part of their journey. According to Eusebius, Epiphanius, and Jerome, he afterwards went to Egypt, and founded a church at Alexandria, where he died and was buried, according to Jerome, in the eighth year of Nero's reign, 68, or any other year previous to the death of his master earlier than other circumstances in his history will warrant.

All the early writers affirm that Mark was intimately acquainted with St. Peter: Papias, Irenæus, and Tertullian call him 'Peter's interpreter.' It has been supposed that his Christianity, and indeed his entire mission, by the simple act of calling him 'my son' (see Kinoel's note on Matt. xii. 27). Some of the later Fathers mention him as one of the seventy evangelists; but there is no good authority for this tradition, and it is contradicted by Papias, who expressly says that he had heard from the presbyter John, who was contemporary with the apostles, that Mark was not a hearer nor a follower of Christ, but of Peter. (Eusebius, Ecc. Hist., iii. 39.)

MARK, ST. THE GOSPEL OF. The genuineness and authenticity of this Gospel are attested by the unanimous voice of ecclesiastical writers. Michaelis has indeed objected to its canonical authority, in common with that of Luke, but on no good ground. [Luke, Gospel of.] According to Papias, Irenæus, and other early writers, Mark committed to writing the gospel which was preached by Peter; and Clement of Alexandria states that he did so at the request of Peter's hearers at Rome. Other early writers add that in this work Mark had the approbation and assistance of Peter; and many passages of the gospel have been thought to bear traces of being written under Peter's direction. From the tradition mentioned above, and from Latinisms and explanations of Jewish phrases and customs contained in Mark's gospel, it appears to have been written at Rome for the benefit of the Latin Christians.

The time when it was written is uncertain. Irenæus says that it was composed μετὰ τῶν τοῦ ρώμην (Peter and Paul) but whether he means after the death of Peter and Paul, or after their departure from Rome, is a question. If the latter, then the gospel must have been published, the very time Mark appears to be about a.d. 64 or 66.

According to the unanimous testimony of the early ecclesiastical authors, the gospel of Mark was written in Cypre. The Latin MS. at Venice, said to be part of St. Mark's Notitia, has long since been proved to be of nothing of the kind.

The contents of St. Mark's gospel have been divided into the three following parts:

Part I. The baptism and temptation of Christ (i. 1-13).

Part II. The public ministry of Christ, up to his last journey to Jerusalem (i. 14-x. 16).

Part III. Transactions at Jerusalem, the death, resurrection, and ascension of Christ (xi.-xvi.).

In the view of the mark of the apostle Matthew's has been satisfactorily refuted by Michaelis: notwithstanding the coincidences between these two gospels, we find, on comparing them, that there are in Mark omissions and discrepancies with what is contained in Matthew, which it is difficult to account for on the supposition that he wrote with the gospel of Matthew before him. The true mode of explaining these coincidences and discrepancies belongs to the more general question respecting the origin of the first three gospels. [Gospel.] These facts, however, prove that the independent sources of information have no difficulty in proving Mark's qualifications for the task: for besides the assistance which he probably received from Peter, we know of his life proves that he must have had Peter's constant intercourse with the apostles and first Christians. (Lardner's Credibility and Lives of the Apostles and Evangelists; Cave's Lives of the Apostles and Evangelists; Kuinoel, Comment. in Lib. Hist. N. T. Prolegomen and Introductions of Michaelis, De Wetze, Heng., and Horne.)

MARKET (mercatum), a public place and fixed time for the meeting of buyers and sellers. A legal market exist only by virtue of a charter from the crown or by se: the market of Exeter was originally held, been vested in the charter once existed, although it can be no longer purchased. A market is usually granted to the owner of the soil which is appointed to be held, who, as such grantee, becomes the owner, or lord, of the market. In English towns that is, towns which, not having the dignity of boroughs, markets were frequently granted to lords of manors; but in walled towns or boroughs, particularly in such as were incorporated, the ownership of the site being usually, by grant from the crown, or other lords of whom the borough had been originally held, been vested in incorporated burgesses, the course has commonly been grant markets to the municipal body.

The prerogative of conferring a right to hold a market is however subject to this limitation, that the grant must be made in all, other than by charter, and that the person to whom it is granted must be an existing market. In order that the crown may not be surprised into the making of an improper grant, the first step is, to issue a writ ad quod damnum, under which the sheriff of the county is to summon a jury before him to ensure whether the proposed grant will be to the damage of the king or of any of his subjects. This writ must be executed in a fair and open manner, and the sheriff is bound to receive evidence tendered against, as well as in favour of the grant. But as the writ does not purport to affect the existing markets, the market of Exeter was a particular case, should be given of the time or place at which it is to be executed. Notwithstanding a finding by the jury that the proposed market will not be injurious, any party who conceives that his interests are affected by the grant want made, whether he appeared upon the inquiry under the writ ad quod damnum or not, may traverse the finding, or use a writ of scire facias, which, after rejecting the alleged writ calls upon the grantee, in the name of the crown, to show why the grant should not be cancelled. If a new market should be set up in the crown, the party is liable to be called upon by the crown to show by what warrant he exercises such a franchise [Liberty: Qvad Warranto]; and he is also liable to an action on the case for damages, at the suit of any person to whose market, or to whose property, the market is set up by the defendant, is a nuisance. A new market is presumed to be injurious
to another held within the distance of twenty miles, even though it be on a different day, but this presumption may be rebutted.

Formerly markets were held chiefly on Sundays and holidays, for the convenience of dealers and customers, brought together for the purpose of buying or selling the produce of the countryside. But in 1825, by 13 Edward I, c. 5, fairs and markets were forbidden to be held in churchyards; and in 1448, by 27 Henry VI, c. 5, all showing of goods and merchandise, except necessary victuals, in fairs and markets, was forbidden on the great festivals of the church, and on all Sundays, except the four Sundays in harvest. The holding of fairs and markets for any purpose on any Sunday was prohibited in 1677, by 29 Charles II, c. 7.

The grantee of a market has a court of record called a common law court, &c., such as is had for the purpose of prompt decision of matters arising in the market. [Primitive Court.] Such a court being considered necessary for the execution of justice and for the support of the market, the power of holding it is incident to a grant of a market, &c., and is made entirely silent on the subject.

Sales in markets may be of goods actually brought within the precincts of the market, or of goods not so brought. Goods not within the precincts of the market are sold under the same solicitation, sometimes without notice, especially when the goods are usually brought into the market for sale, it is incumbent on the lord of the market to take care that everything be sold by correct and legal weights and measures.

Dealing in markets, contracts were formerly required to be made in the presence of an officer appointed for that purpose by the lord of the market, for which service he received from the buyer a small remuneration called a market-toll. [Toll.]

It is a rule of the common law that every sale in market-over (open market) transfers to the buyer a complete property in the thing sold; so that however defective the title of the vendor may be, yet that acquired by the vendor is perfect, even where the property belongs to a person who is in the condition of a public officer, or in the hands of an idiot, or a person in prison or beyond sea. In London, every shop is market-over for goods usually sold there.

This rule is subject to certain exceptions and restrictions. A sale in market-over does not bind the rights of the crown; nor does it bind the rights of others, unless the sale be in an open place, as a shop, and not a warehouse or other private part of the house, so that those who go along cannot see what is doing, and not in a shop with the shop-door or windows shut, so that the goods cannot be seen. The buyer may sue for his money, &c., upon the title of the seller. The sale must be without fraud on the part of the buyer, and without any knowledge on his part of any want of title in the vendor. If the seller acquire the goods again, the effect of the sale in barring the true owner is defeated. There must be some change or alteration in the goods, not altered in market-over in goods given, or in goods pawned, or in goods sold to the real owner. The sale must be between sunrise and sunset, and must be completed and confirmed in the market.

By 5 Henry VIII, c. 2. If any felon rob or take away money, goods, or chattels, and be indicted and found guilty, or otherwise attained upon evidence given by the owner or party robbed, or by any other by their procurement, the owner or person robbed shall be restored to his money, goods, &c., and if any stolen goods are proved in the indictment, have, upon the conviction of the offender, been restored to the prosecutor, notwithstanding any sale in market-over.

It is to be observed that these can be easily conveyed to distant markets, the legislature has frequently interposed to protect the owner against the consequences of a sale in market-over. By 2 and 3 Philip and Mary, c. 7, 'No sale of a horse stolen binds the property, unless it stand or be ridden an hour after the sale.' Any person selling or offering for sale in part of the market, and all parties to the bargain come with the horse to the book-keeper and enter the colour, and one mark, at the least, of the horse sold, and pay the toll, if any due, else a penny.' And further, by 31 Elizabeth, c. 13, 'No leseman shall, in any fair or market sell, pawn, exchange, or put away any horse, mare, &c., unless the toll-taker, book-keeper, bailiff, or other chief officer will take upon him perfect knowledge of the person that shall so sell, give, or exchange any horse, &c., and of his true name, surname, and dwelling-place, and shall enter the same in a book there kept for sale of horses, or else that he so selling or offering to sell, &c. any horse, &c., shall bring unto the toll-taker or other officer aforesaid of the same fair or market, one sufficient and credible person, that can certify that such toll-taker, &c., that he know the party that so sells, &c., such horse, &c., and his true name, surname, mystery, and dwelling-place, and there enter in the book of the toll-taker or officer, as well the true name, surname, mystery, and place of dwelling of him that so sells, &c., such horse, &c., as of him that so shall testify his knowledge of the same person, and shall also enter the true price that he shall have for the same horse, &c., and that no toll-taker, &c., shall take toll or make entry of any sale, &c. of any horse, &c., unless he know the party that so sells, &c., such horse, &c., as of him that so shall testify his knowledge of the same person so selling, &c., any such horse, &c., and his true name, &c., and shall make a per foot entry in the book of such his knowledge and of the true price paid, &c., so far as he can understand the same; and then give to the buyer a note in writing of the full contents of the same, subscribed with his hand; on pain that every person that shall so sell, &c., any horse, &c., without being known to the person who bought the same, shall be punished with a fine of forty shillings, &c. The same fine shall be paid by every person making any untrue testimony, and every toll-taker, &c., offending in the premises, shall forfeit 3l., and that every person making any entry for any horse, &c., in market not used in all points as aforesaid shall be fined.' And the same penalty, &c., shall be paid by every person that shall make any entry in the premises, so as to make any person, &c., as of him that so sells, &c., such horse, &c., be stolen, and afterwards sold in open fair or market, and the sale shall be used in all points and circumstances as aforesaid, yet the sale of any such horse, &c., six months after the felon's, shall not take away the property of the owner, so as he be not the buyer, six months, before the mayor or other head officer of the town or parish, if the horse, &c., happen to be found in any town corporate or market-town, or else before any justice of the peace, &c., at the request of the owner, after such horse, &c., shall be found, if it be out of a town corporate or market-town, and so as proof be made within forty days, by two sufficient witnesses, before such head officer or justice, that the property of the horse, &c., so stolen, was in the place aforesaid, and now is lost, and was stolen within six months next before such claim, but that the party from whom the horse, &c., was stolen may at all times after, notwithstanding any sale in fair or market, have property and power to take again the said horse, &c., and to recover the same to the use of the owner, if the owner or party that shall have the possession and interest of the same horse, &c., if he will accept it, so much money as the party shall dispose and swear before such head officer or justice of peace, that he paid for the same horse, &c., without fraud or collusion. The statute extends to a horse taken by wrong, though it be not stolen.

By 1 James I, c. 21, 'No sale, exchange, pawn, or mortgage, of any jawela, plate, apparel, household stuff, or other goods, wrongfully purloined, taken, robbed, or stolen, and not uttered, delivered, or exchanged, &c., within London and its liberties, Westminster, or Southwark, or within two miles of London, to any broker or pawn-taker, shall work or make any change or alteration of the property or interest in such market in generally appointed to be held once, twice, or three times in a week, for the current supply of commodities, mostly of provisions. A large market held once or twice a year is called a fair; and, according to Lord Coke, a large fair held by the queen in her city of London, and kept within the usual market, that is, either within London and its liberties, Westminster, or Southwark, or within two miles of London, to any broker or pawn-taker, shall work or make any change or alteration of the property or interest in such market.'

Fairs have all the legal incidents of markets, and are subjected to further regulations by 2 Edward III, c. 15, one of which requires, that at the opening of the fair, proclamation be made of the time it is to continue.

"MARKET"

"MARKET"

More numerous markets, although their situation is on well cultivated country, provided they are at a sufficient distance from one another, and on different days of the week, the greater saving there is of time and labour of conveyance. Good roads, and navigable rivers are of greatest importance to a market-town; and if there be mills in the neighborhood, where corn can be ground, they will increase the advantage to the farmer by causing a regular demand above what the immediate consumption of the place may require."
The vicinity of a good market where every kind of agricultural produce will always find purchasers at a fair price, greatly adds to the value of a farm, especially if good roads lead to it; and the advantage is the greater if it be a populous town, which not only consumes much produce, but from which various kinds of manure may be brought by the teams which have carried the produce to market. It is this which so much enhances the rent of land near London and all great cities, and makes the agriculture there approach nearer to horticulture, which entirely depends on extra-acre produce.

Few things are so bulky as corn; a sack weighing 240 lbs., when brought to market may be worth a guinea or thirty shillings, but if it is carried 50 miles to a market, the net produce, after deducting the charge for land, labour in the field, and the interest on the capital required for the stock, will not be so much as 50 lbs. In a populous place, the demand for corn is more numerous and continuous, and the market has a more constant and ready sale than in the country; but, on this account, the price is lower. The nature and situation of the markets are consequent on a most intricate system of cultivation and a great agricultural enterprize. Where markets are very distant, the only profitable produce is live-stock, which can be driven a long way at a small expense. All countries, however fruitful the soil, which are thinly peopled, and have no ready market, the corn must remain in the country, or be uncultivated. An increase in the population and the establishment of manufactures give rise to an increased number of markets, and bring more land into a state of profitable cultivation as arable land. If a regular supply of foreign corn is in circulation, the manufacture is thrown upon the demand for corn to cause more to be produced. A regular supply to the markets keeps prices regular, fluctuating only according to the abundance or scantiness of the crops.

It is for the general advantage that the farmers should be enabled to dispose of their produce. In general, only a rise or fall of prices. As a general principle, a farmer should understand that his corn at a time when the work out of doors is less important, or when the weather is unfavourable for it. He must do so whenever the farmer's revenue diminishes, and the demand of the market is required; and as soon as the grain is in sufficient quantity to require a team to take it to market, it should be sold. But many circumstances may make this regular course inconvenient. There may not always be a demand for the article, and if the price is forced, a diminution in the price must be submitted to. In some situations purchasers cannot always be found, at any price, and a grainary to store corn in becomes indispensable. In commercial countries there are always speculators in corn, who, in the harvest season, purchase and store, in the expectation of one rise or fall of prices. As a general principle, a farmer should not thrust his corn at a time when the work out of doors is less important, or when the weather is unfavourable for it. He must do so whenever the farmer's revenue diminishes, and the demand of the market is required; and as soon as the grain is in sufficient quantity to require a team to take it to market, it should be sold. But many circumstances may make this regular course inconvenient. There may not always be a demand for the article, and if the price is forced, a diminution in the price must be submitted to. In some situations purchasers cannot always be found, at any price, and a grainary to store corn in becomes indispensable. In commercial countries there are always speculators in corn, who, in the harvest season, purchase and store, in the expectation of one rise or fall of prices. 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lands is called marl; in Worcestershire and Somersetshire red clays are termed marls. In geology we have the red marl, the black marl at the base of the lias, the chalk marl, the freshwater marls of Headon Hill in the Isle of Wight. The term is too vague for scientific descriptions.

Marl, an earthy mass of iron, or chalk, has useful soil and extensively used for the improvement of land. It consists of calcareous and argillaceous earth, in various proportions, and as the former or the latter prevails, so it is beneficially employed on clays or sands. There are several distinct sorts of marl—clay-marl, shell marl, slate marl, and stone marl. The clay marl has probably been formed by the slow deposition of clay suspended in water and mixed with the particles of decomposed shells. When these shells have retailed their form, or appear in fragments, or in excellent condition, the decomposed shells form slate marl and stone marl. The effect of marl is the same as that of clay and chalk upon sandy soils; on heavy soils its effect is proportioned to the quantity of calcareous earth which it contains. The peculiar advantage of marl is its readily crumbling to powder by the effect of air and moisture. If it is too compact to dissolve under these influences, it can only be made useful by burning, and in this case it is only a substitute for lime, its value depending on the intensity of the effect of heat. If the marl to ascertain this proportion, the marl is thoroughly dried over the fire and pulverised; a certain quantity is weighed and put into a cup; diluted nitric acid or strong vinegar is then poured, and the effervescence is calculated, and the amount of acid equal to that which has been used is placed in a cup, and fine marble dust is gradually put into this, from a certain quantity which has been weighed, as long as an effervescence takes place. The quantity of the acid is calculated when the distance of the marl and the depth from which it is raised are known; when it lies in a stratum under the land, it is generally the cheapest plan to open a pit in each field; but if the marl is thrown out at a distance of two hundred yards from the pit, it is found by experience that the cheapest way of putting on the land is by means of men wheeling it in barrows with the help of planks, as is done in digging canals and other similar public works. The weight of the marl is about 400 lbs.

Marl is often found very near the surface, so as to mix with the upper portion of the ground; under these circumstances, its presence does not indicate great fertility. It is generally best when found at a moderate depth, so as to be readily dug out and carted on the adjacent lands. In Norfolk, where a marl containing a large proportion of iron is found, it is frequently spread over the surface at the rate of two or three hundred cart-loads per acre. This dressing, joined to underdraining, makes a wonderful improvement on soils which before were scarcely worth cultivating; owing to the excessive loss of the barytes in winter. The chalk marl makes them retain sufficient moisture, while the superfluous water is carried off by the drains.

Marl being often found with blue veins through it, a marl that is too rich in iron, or chalk, is sometimes mistaken for it; but this, far from being useful, is quite the reverse; for sulphate of iron in any quantities will produce absolute sterility in a soil. The nature of marl can always be detected by pouring a little vinegar on it; if it does not effervesce, it is only clay, and probably contains iron, which is readily discovered by the red colour on burning a portion in the fire, or by mixing it with water and then adding an infusion of gallnuts in the strained liquor: the black colour immediately detests the sulphate of iron. But when the marl has been used for some years, the marl may not always be identified by its effect on the soil, nor from the nature of the soil itself, as marl and chalk may have an equal and even a larger effect on the soil. There is no greater mistake than to imagine that marl is a substitute for dung. Light land which has been marled becomes less hungry, and will make dung go further, but it will not act well on a poor soil without dung; and if the land is severely cropped after marling, and not sufficiently recruited with enriching manures, it will soon be exhausted than if it had not been marled; for marl, like lime, renders soluble the natural humus in the soil. It is very easy to judge of the value of any marl on a given soil when the question is between a calcareous earth and clay, its composition has been ascertained. We have only to consider what improvement will be produced in the texture by the addition of so much lime and so much clay. The advantage of marl over pure chalk is only that it is more readily pulverised; but whenever the cost is at all equal expense, it is far more effectual and of longer duration on clay soil than the best marl. On sands it may be different, and the fat marls containing much unctuous clay are preferable from their binding nature.

Marl is often formed in forming compounds with dung and peat earth. It is laid in layers with the dung and peat, and if the heap is well soaked with urine or the washings of stable-yards, it will in a short time become a most valuable manure for all kinds of soils. Many peat heaps are flooded in a more bottom; where this is the case, and it can be drained, or the water got rid of in any way, the marl, when laid on the surface, consolidates the peat by its pressure, and soon makes it capable of producing good herbage by converting it into a rich vegetable mould. The effect of marl in improving marshy land is sometimes calculated when the distance of the marl and the depth from which it is raised are known; but where it lies in a stratum under the land, it is generally the cheapest plan to open a pit in each field; but if the marl is thrown out at a distance of two hundred yards from the pit, it is found by experience that the cheapest way of applying it is by means of men wheeling it in barrows with the help of planks, as is done in digging canals and other similar public works. The weight of the marl is about 400 lbs.

Marlborough, John Churchill, Duke of, the eldest general and most consummate statesman of his times, was born at Ashby in Devonshire, on the 24th of April, 1650. He was the son of John Churchill, a gentleman of ancient family, whose fortunes had suffered severely in the civil war, through his devotion to the royal cause; and whose loyalty, after the Restoration, was rewarded with sundry small offices under the crown for himself, and with more important ones for his sons and other relatives. He was appointed to the provost-mayor for his children in the provost court of Charles II. Arabella Churchill, his daughter, became first maid of honour to the Duchess of York, and next mistress to her daughter, the future queen. He was succeeded by his eldest son, also called John Churchill, who was appointed page to the same prince, doubtless owed his early advancement to this disgraceful connection. It is remarkable that one of its fruits, James FitzJames, Duke of Berwick, proved a commander of renown on less illustrious service.

The natural talents and merits of Churchill however were of too high an order to be solely dependent on the patronage which had sufficed the honour of his house. Notwithstanding the disadvantages of a neglected education, which seems to have been confined to a short stay at St. Paul's school, he gave early indications of spirit and intelligence; and his desire for a military life having been gratified by his patron with a commission, he invariably distinguished himself in each of his early campaigns; in the defence of Tangier against the English, under Charles II.; and then in 1661, in the situations in which the English troops shared as auxiliaries to the French armies under Louis XIV., during the unprincipled alliance of Charles II. with that monarch against the Dutch. On the great breach of continental warfare, in which the English troops continued to serve from 1672 to 1677, his brilliant courage and ability, no less than the singular graces of his person, attracted the notice of the illustrious Turenne, who pronounced, with prophetic sagacity, that his hand, his fame, his English, would one day prove himself a master of the art of war.

On the conclusion of the peace of Nimweuge, Churchill, now a colonel, returned to England, and was happily rescued from too licentious a career of dissipation by an ardent attachment for the character of a prevailing young lady of birth, genius, and beauty, whose irreproachable purity in a vicious age might have rendered her worthy of the uxorious love of the hero, if her imperious "Sir John," Marq. of Puncher, P. C., No. 904.

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had not disgraced his submission to its tyranny, alienated his political friends, and embittered his domestic peace. She had been placed, like himself, at an early age, in the household of the Duke and Duchess of York, where she became the favourite of their daughter the Princess Anne, and had acquired over the spirit of the future queen that commanding influence which it belongs to the stronger to exercise over the weaker mind. Her marriage separated neither her husband nor herself from the courts of their parents; and Marlborough was confidentially employed by the Duke of York on many political occasions; and when the Princess Anne was married, his wife, by her express desire, made a lady of her beldam. Churchill had previously been employed by the Prince of Orange, the Elector of a Sacred body; and when that prince succeeded his brother on the throne, he was further promoted to an English peerage by the style of Baron Churchill of Sandridge. Under this title he contributed by very effectual military service to the suppression of Monmouth's rebellion, and was rewarded with his master's unbounded reliance on his fidelity.

This confidence he basely betrayed, before and after the landing of William of Orange, with a deliberate treachery, which all the solemnity of political and religious party has vainly been able to justify, and the insanity of which no excuse, even in the difficult circumstances of the times, can be found to palliate. After offering his services to the Prince of Orange, he accepted the command of a large body of James's troops, assuming to himself, as Marlborough, the command of the army, and the conduct throughout the reign of William with the perfidy and treachery which he has since betrayed to this day. But, while and when William became king, he received at his hands the title of earl of Marlborough, and the offices of privy-councillor and lord of the bedchamber, as the reward of his ingratitude. His subsequent conduct throughout the reign of William was perfectly consistent to this outset: for he corresponded and intrigued with the exiled king. By this double treason and perfidy, he for ever took from the former desertion of his declared sovereign all extenuation of a conscientious principle; he broke his allegiance to the new king whose favours he had accepted; and he branded his own inconsistency with the meanest motives of self-interest and self-preservation.

William III, who knew equally well how to estimate the capacity and sincerity of Marlborough, alternately imputed his treachery and dismissed him as an ill-tempered man whom he is said on his death-bed to have recommended to his successor as the fittest person to "lead her armies and direct her councils." The favour of Marlborough's wife with Queen Anne was probably a more powerful, though less rational, inducement to his renewed commission under the Prince of Orange, who now sent him to the command of the allied forces in the war of the Spanish succession; and he immediately entered on a course of glorious achievement which since the days of Henry V. had never been equalled, and which until our own eventful times was never surpassed by any British commander or army.

When Marlborough landed at the Hague, in June, 1702, to take the command of the allied army, the French under the skilful Boufflers, by the superior force and vigour of their preparations, had been able everywhere to assume the offensive; the very frontiers of the Seven Provinces were threatened; and it was feared that the efforts of the English general must be restricted to the defence of the republican territory. Moreover, he had to encounter the defection of the Dutch allies, and the opposition of the Dutch deputies, whom the states-general sent into the field to control the movements of their troops, and whose ignorance of war and dread of responsibility were great obstacles to every bold enterprise. Yet, notwithstanding these obstacles, which shackled all his operations and heavily taxed his forbearance, he succeeded, by a series of masterly movements, in compelling the French armies to retreat in all quarters. The French commander, the Duke of Villers, retired to the island of Oudenarde, which terminated in the utter rout of the French under the dukes of Burgundy and Vendome, with a loss of 14,000 men. The fording of the Scheldt and reduction of the great fortress of Lisse, a great part of which was occupied by a garrison of 1,500 men under Boufflers, were the chief victories of the year. The following year (1709) was distinguished by the sagacity and boldness of Marshal Soubise, the most illustrious of Marlborough's exploiters; since, though he was undoubtedly victorious, the assault of an immense army under Villeneuve in its march to the south.
position of tremendous strength, has exposed him and his colleague Eugene to the charge of reckless temerity; and the result produced no advantages equivalent to the frightful carnage by which it was purchased. The next campaign (of 1746) opened with another signal victory, which the enemy's lines by Marlborough, which was followed by the reduction of Douay, Bethune, and other posts. Villars employed the autumn and winter in constructing a series of strong lines on the Flemish frontiers, to cover the interior of France, and frustrate her hopes of an attack on her allies; and so confident was he in the impregnable character of these works, that he openly boasted of having "at last brought Marlborough to his ne plus ultra." The futility of this vain wish was finally determined by Marlborough, who broke forth with more splendour than in this, which was destined to be his final campaign; even while his mind was distracted, and his energies were crippled by the malignant intrigues of his personal enemies, and the machinations of a fat, by a wise and unexpected manœuvre, he burst through the lines of his able though gasconading antagonist near Bouchain, formed the siege of that strong fortress, and effected its capture—his last achievement—under the eyes of a statesman, he was unrivalled in personal address and diplomatic skill, in the art of persuasion, and in the powers of combination of his irritation. The arrangement of the grand alliance which arrested the ambitious career of Marlborough, and preserved the liberties of Europe; his influence pervaded every continental court; and by his energetic hand was set in motion every spring of that vast confederacy which he was the principal personage of his country and times. As a statesman, he was unrivalled in personal address and diplomatic skill, in the art of persuasion, and in the powers of combination.
Hesians, Danes, Jutes, Angles, Saxons, and others, in almost every enterprise marred by the timidity or obstinacy of the Dutch deputies, the moral triumphs of victory with such heterogeneous materials, and under such heavy disadvantages and discouragements, must very much raise our estimate of the men by which they were conducted, and of Coningsby, a man of whom the wise and avarde which degraded his private habits, he might justly be numbered among the greatest and meanest of mankind. Nor is there any weight in the extenuation which has been attempted for his political faults, as it was not worse than contemporaries; since it is the test of true greatness to rise above, not to sink to, the level of a common corruption. Yet with all his faults, it would be easy to prove that there were not wanting in Marlborough many of the qualities of a good patriot and a good man. His friends the lord treasurer Godolphin and himself appear, of all their contemporaries, to have been most free from the virulent spirit of faction and most sincerely devoted to the true honour and interests of their country. The attachment of Marlborough to the Whig party and principles of the Church of England was sincere and pure; he was unaffectedly a person of strong religious feeling and practice; and in these respects the example which, as a commander, he held out to his troops, and enforced in his camp, of a piety without fanatics, was of great value. He was not courageous as it is possible that he was not so courageous too, which the inconceivable baseness of faction affected to doubt, and which in his youth had been fiery and impetuous, displayed in his later years the calm and collected spirit of the Christian hero. In public action he was never answerable to the demands of personal enemies. He was placable and magnanimous. In private life, if we except the stain of parsimony, his conduct, at least after his marriage, was a pattern of moral virtue; his temper was easy and sweet, his affections, and he was but too fond a husband, too confiding a friend, and too indulgent a master.


MARLOWE, CHRISTOPHER, a dramatist, was born, according to Malone, in 1524, but the exact date is unknown. All that is known of his life may be given in a very few lines. He was educated at Corpus Christi College, Cambridge, took his degree in 1543, and that of arts in 1547. On leaving the university he became a playwright, and perhaps an actor. His moral character appears to have been bad. He was killed in a quarrel of a disgraceful nature. June 30th, 1593, he was indicted for murder before the council at Deptford, from Anthony Wood, and others.

The following plays are ascribed to him:—Dr Faustus, 'Edward the Second,' 'The Jew of Malat,' 'Tamburlaine the Great,' 'Lust's Dominion,' 'The Masque at Paris,' 'Don Quixote,' 'Dido, Queen of Carthage,' 'The Isle of Saints,' 'Tamburlaine,' etc. There is, however, that the three first only are his sole productions.

Both the matter and the style of 'Tamburlaine' are asserted to differ materially from Marlowe's other compositions, and there is reason to believe that 'Lust's Dominion,' 'Don Quixote,' and 'The Isle of Saints' are by another hand. 'Tamburlaine' is one of those extraordinary imitations which imply in the chief character a villain more than human; such, in fact, as were backgrounded in the tragic romances of Shakespeare, and these, however, have not been shown by a comparison of the recent version with one of a contemporary MS.

'The Jew of Malta' is one of those extraordinary imitations which imply in the chief character a villain more than human; such, in fact, as were backgrounded in the tragic romances of Shakespeare, and these, however, have not been shown by a comparison of the recent version with one of a contemporary MS.

Faustus, which succeeded 'The Jew of Malta,' as a play to which greater interest is attached at present than sixty essays, owing to the celebrity of Goethe's Faust.

Those who are interested in the subject of 'Faust' of Goethe, and the greatest conception of human invention—who believe that a deep meaning lies hid behind all the apparent absurdities, and that the moral influence of the work is of a high and impressively kind—will of course laugh at any attempt at comparing the German with his English predecessor. On the same time they must allow that Marlowe's play is one of the first, if not the very first attempt at portraying the struggles of a man whose faith is wavering, the first exhibition in a dramatic shape of that doubting spirit which has been on the ascendant for the last four centuries. Moreover the solitary horror of Faust's death far surpasses the stage-effects which tell so strongly in the last scene of the first part of the German poem: and it would not be unkind to add that Goethe has borrowed not a little from his English rival.

Perhaps, on the whole, we must assign the first place among Marlowe's works to 'Edward the Second.' It is the prelude to the Shakesperian 'History,' and contains many passages which were doubtless taken from Shakespeare's 'Henry IV.' Those who wish to pursue the subject at greater length may consult an interesting article in the 'Quarterly Review,' which adds much to our information on the subject of the English drama of the sixteenth century.

Owing to the carelessness of the printers, many lines have been confused in Marlowe's plays, to the gravest injury of various passages, which now appear to be prose, though they are in reality verse.

Marlowe has been compared to Aeschylus: there is some
thing spectacular in comparison, but it can only be very
very great. To be well enabled for the first regular form of
the English drama cleared of rhymes; and he may
be considered as the link between Shakspere and the Mora-
lights. "Feastus" is nearly a "morality"; "Edward the Sec-
cond" is a regularly formed "history."

taken from the translated Ovid's "Art of Love" and some other classical works.

(Collotier's History of Dramatic Poetry: Preface to Mar-
lowe's Works, ed. 1526; and Quarterly Review.)

MARLSTONE. Sandy, calcareous, and iron strata,
which divide the upper strata of Pliocene system and are
thus designated. (Geology.) This mass of rocks is nowhere
so well developed as in Yorkshire and Leicestershire.

MARLY. [Silk or Oze.]

MARMALADE, a sort of preserve, made with sugar
and the whole of the juice of Citrus bigaradia, a variety of the fruit of
the Citrus bigaradia. It is more wholesome when properly
made, i.e., when the rind is soft, than most other sweet pre-
serves, as the bitter communicates tonic and stomachic prop-
erties.

MARMANDE. [Lot et Garonne.]

MARMONTEL, JEAN FRANCOIS, was born at Bort
in Limousin, in 1723. His parents were of very humble con-
dition, and he owed his instruction in the Latin tongue to the
gratuitous tuition which he received in a college under the
patronage of a gentleman who had been a fellow-tradesman at Clermont, but a love for literature interfered with
all commercial pursuits. At an early age he became
professor of philosophy at a seminary of the Bernardins at
Dijon, and he married a girl of the name of Contes, and the
death of his father. An acquaintance with Voltaire, to
whom he had sent some poems, and who encouraged his
attempts, brought him to Paris in 1745. Voltaire intro-
duced him to several persons of distinction, and the success
of his romances, "Belisare," "Les Ines," and his

drama

poem

Owing to the patronage of Madame Pompa-
dour he was made historiographer of the royal build-
ings (Historiographe des Bâtiments du Roi), with a pension of
1500 livres, and he obtained the right of publishing,
which he exercised in his book "Belisare," and he was
falsey suspected of satirizing a person of distinction, and in
consequence lost the "Mercure," and was confined in the
Bastille. His celebrated Contes Moraux—which, however
dubious as to their moral character, are exquisite specimens of
the lighter kind of French writing—followed his release,
and gained him great reputation. On the death of Duclos
he became Historiographer of France; and in 1753 he was
made secretary to the Académie in the place of D'Alembert.
He lost his appointments and his property on the
revolutionary measures of 1792, and he was sent into
exile from Paris in a state of destitution. In 1796 he be-
came member of the National Institute, and in 1797 was
elected into the council of the ants, but this election
having been declared null on the 17th of January of the same
year, he retired to Abbeville, where he died in
obscenity in 1799, and was buried in his own garden by
Catholic priests.

The works by which Marmontel is chiefly known are his
Contes Moraux; his romances "Belisare" and "Les Ines,
and his "Mémoires." The "Contes Moraux" and "Belisare"
are so familiar in an English shape, that they are almost
British classics.

MARMOR, or MARMARA, SEA OF, the Propontis
or the Propontis, is a sea which separates the continental
and the Black Sea, communicating with the former by the
Dardanelles, the antient Hellespont, and with the latter by
the strait of Constantinople, the antient Bosphorus. Towards
the east it terminates in the long and narrow gulf of Ismid, and
on the west, in the Gulf of Nicomedea, and the Cician Sinus
of the

The early Greek geographers, more especially those before
the time of Plomer, appear to have been very much mistaken
respecting the general position of this sea. They represent
its greatest length in a direction nearly north and south,
instead of east and west, placing the Thracian Bosphorus and the
Hellespont on the same meridian. Eratosthenes how-
however, having sought to have possessed the requisite data for deter-
mining its great inclination from the west towards the east,
having described the parallel of Amisos as passing through the
Propontis and the Hellespont; and the reason assigned for
his making no use of this knowledge is his unwillingness
to depart from the prevailing opinion of the age in which
he lived. Polybius, however, had been aware of the
inclination of the Propontis to the east.

Herodotus gives the length of the Propontis at 1400 sta-
dia, and its breadth at 500 (iv, 85), he allows 400 sta-
dia as the length of the Hellespont (Dardanelles). Strabo (p.
123; Cisaub.) gives the length of the Propontis from Byzantium to the Troad, and reckons
its breadth nearly the same. He also adopts the opinion of Pytheas as to its direction, placing the Hellespont and the
Bosphorus under the same meridian, and it is not until the
advent of the Propontis by the Propontis and the Bosphorus
assumes an inclination from west to east, and even then
the error in its position received but a slight correction.

Turning to our modern maps, the Sea of Marmora is
comprehended between the parallels of 40° 18' and 41° 5'
N. lat., and the meridians of 26° 40' and 30° 5' E. long.
Its extreme length, from west to east, including the gulf of
Ismid, is about 160 geographic miles; from strait to strait, in
a west-south-west and east-north-east direction, 110 miles;
and its greatest breadth is 7 miles.

It is a source of great interest to modern travellers as highly
cultivated and picturesque, with a greaterboldness of cha-
racter on the Asiatic than on the European side.

The depth of this sea is in many parts very considerable.
The Admiralty Chart published in 1835 we find 133 fathoms about the mouth of the Propontis and 243 fathoms
about the same distance due north of it no bottom at 355 fathoms;
from which we may infer that the depth is very much greater midway between the two shores.

On the other hand, since there is no current in this basin of the Mediterranean nor in the Black Sea, they are much
less to be expected in the Sea of Marmora. We accor-
dingly find that there is no periodical ebb and flow of its
waters, but a current sets through it from the Bosphorus,
varying with the season and the prevailing winds, and continues its course through the Darda-
nelles to the Archipelago. Its navigation is by no means
difficult: it is generally free from dangers, and good anchorages
may be found all along its northern shore, under its various
islands, and ten miles south east of Constantinople. The Princes Islands are nine in number,
between two of which, Oxia and Rata, are uninhabited. Of
the others, Prinkipo (the antient Pitaya) and Kalki (the
antient Chale) are distinguished by their copper
mines. Their scenery is described as being very beautiful
and the Frank merchants of Pera and others have their
summer residences on them.

The remarkable peninsula of Artaki was formerly an
island, separated from the continent of Asia Minor by the
ruins of which are still to be seen, and which confirm the
historical testimony of its opulence. The modern town of
Artaki, which gives its name to the peninsula, and which is
thought to occupy the site of the antient Artace, is not a
town of much note. It is said to contain about 4000 in-
habitants, and has some trade in wine, oil, and silk.

In addition to Constantinople, at the entrance of the
Bosporus, and Gallipoli, at the entrance of the Dardanelles, the
principal towns of the Sea of Marmora are Rodosto,
Rosti, and Serez, near the mouth of the Propontis; Soun-
dou, Panorma, and Modanech, on the southern shore.
There is also Ismid at the head of the gulf of that name,
and Gumelieh, at the head of the gulf of Modanech. The
chief rivers which enter this sea are the Thedu and the Tech.
The latter enters, in European Asia, the Gulf of Usula (the
antient Ozula), the Bolai, or Satalide (the antient Aseus), and the
Mussaph (the antient Rhynaeus), in Asia. There are two other
rivers on the European side which appear to be of some
importance, they have been called Kasandrida in the large
map of European Turkey. Vienna, 1829.

MARMORA, or MARMARA (the antient Procon-
sus), is an island in the sea above described. It was only
celebrated for its marble quarries, from which Cicus and
other neighbouring cities were supplied with materials for
their edifices. (Strabo, p. 586.) More recently Constanti-
ople has been indebted to these quarries for the embel-
ishment of its mosques, fountains, and other public build-
ings; but the marble is now principally used for the
sepulchral monuments of the Turks and Armenians. It
MAR

MARMARA, a town of Asia Minor, in the province of Anatolia, in 28° 43' N. lat. and 29° 5' E. long.

MARMOT. [MURIDAE.]

MARS, a region of France belonging to the system of the Seine, which it joins just above Paris. [SEINE.]

MARNE, a department of France, bounded on the north by the department of Ardennes, on the east by that of Meuse, on the south-east by that of Haute Marne, on the south by that of Aisne, on the south-west by that of Seine et Marne, and on the west and north-west by that of Aisne. Its form is irregular. The greatest length is from north-west to south-east, from the neighbourhood of Frépans on the Vesle to the neighbourhood of St. Dizier (Haute Marne). The department is divided by the Rhine into two banks of the Rhine, by right angles to the length, is from the village of Petit St. Hilaire on the Sûpre to the bank of the Seine, near the junction of the Aube, 62 miles; the area is estimated at 3158 square miles, an area exceeding that of any English county except Glamorgan, and which is increased by about 250 square miles of that of the two counties of Essex and Suffolk. The population, in 1831, was 337,076; in 1836, 342,420, showing an increase in five years of 8169, or about 2.5 per cent, and giving 109 inhabitants to a square mile. In ancient times it was very different, and included the two English counties with which we have compared it, not very much in fact surpassing the single county of Essex, the more populous of the two. In density of population it is far below the average of France, and below every English county except Westmorland. Château-Chinon, Marne, the capital, is in 48° 57' N. lat. and 4° 21' E. long., 69 miles in a direct line east of Paris, or 102 miles by the road through Meaux, Château-Thierry, and Epernay.

MARNE, a river in the department of Château-Chinon, which is a tributary of the Seine. The basin is extensive, or undulating or hilly tracts, in which the greatest elevations do not exceed 1200 feet above the level of the sea. The general inclination of the surface is toward the west and north-west, in which directions the waters flow. The western side of the basin is occupied by the meanders of the Seine, which discharges the basin to the Seine itself, except along the eastern border, where the formations underlie the chalk crop out. The mineral treasures consist in quarries of freestone for building, dressed stone, and chalk. The best marls of France are made, fine sand in much request for glassworks, and potters' earth. Pest is dug in considerable quantity, especially in the valley of the Vesle; about 1000 tons of potters' earth are sent yearly to Paris, or into the department of Meuse, or Thionville. About 4000 tons of potters' earth are sent yearly to Paris, or into Lorraine, Aisne, and Meuse. Near Vitry is a bed of coal, and in the Calais basin, which are, however, not worked, at least to any extent. There are several mineral springs: those of Sermesin on the Saulx, near the eastern boundary of the department, are in the highest repute. There is a small stream to the bottom of the Seine, in the basin of which the whole department is bounded by the valley of the Seine, called the 'Canal Sauvage,' and the main stream of the river itself, just touch the southern border of the department, which they separate for seven or eight miles from the mouth of the Aube. The Aube has a small part of its course in this department, on the border of which it joins the Seine. The Auges joins the Aube. The Marne enters this department in the south-east, from the department of Haute Marne, and flows through it in a channel which it follows gradually from north-west to south-east. It receives on its right the river Ormion, and the river Oranin, into which fall the Saulx and the Chézé, and several other smaller streams. The More, the Petit Morin, and the Morin or Sumerin rise in this department, but join the Seine before its mouth. The rivers in the north and north-east are the Aisne, a principal feeder of the Oise, and the Somme, and the Vesle, feeders of the Aube. The main navigation of the department is thus stated in the government returns:—Seine, 3 miles; Aube, 9 miles; Marne, 10 miles total, 114. None of the other rivers are navigable, and there are no canals.

The number of government roads is eight: they had (in Jan., 1837) an aggregate length of 364 miles, viz. 221 miles in repair, 99 out of repair, and 27 unfinished. The principal road is that from Paris, by Dormans and Epernay, passing through Conflans, Meaux, Château-Thierry, and Vertus, to Reims, and thence to Verdun et Metz, and from thence to Metz and Frankfort in Germany; the other to Vitry le Duc, Nancy, and Strasbourg. The great road from Paris to Mezières, and so to Namur and Liège in Belgium, passes through Château-Thierry and Reims, and branches off from the great road at La Ferrières-Jourdain (Seine et Marne), and passes through Mort-sur-Saulx, and a road from Paris to Vitry passes through Conflans (Seine et Marne) and Seine-et-Marne. Roads from Châtillon to Reims, and from Reims to Troyes (Aube); and a road from Reims leads by Epernay and Seine-et-Marne to Nogent-sur-Seine (Aube). The departmental roads were fifteen in number (Jan., 1837), and had an aggregate length of 289 miles, viz. 113 in repair, 50 out of repair, and 136 unfinished. The by-roads and paths amounted to about five thousand.

The soil of the department varies greatly: nearly two-thirds consist of chalky plains covered with a thin layer of vegetable, often sandy, soil, producing good crops of grain, and other cereals, as well as wheat, barley, and oats, and other trees of similar kind, which have lately been planted to a great extent. In the southern parts of the department these chalky plains are so extensive as to have incurred in former times the reproachful epithet of 'cham.' Chateau-Chinon, which is the principal town of the department: it is distinguished by the river Mame (wine of the river), and vin de montagne (wine of the hill), the first growing on or near the banks of the Marne and being chiefly white—the second at a distance from that river, and being chiefly red. The vineyard extends over an extent of from 40,000 to 50,000 acres; the wines are sparkling or creamy, and still. The proper mineral sparkling or creamy wine has much increased in recent years. The best growths of the vin de rivière are from the right bank of the Marne, from Thionville and Epernay. Of these the wines of A. Marne, and Havilliers have the highest reputation. The best vin de montagne are the white wines of Sillery, and the red wines of Ambonnay, Verzy, Verzenay, and other places in the arrondissement of Celles, the red wines of the arrondissement of Sillery, and the red wines of the arrondissemcnt of Champagne are exported to Italy, Switzerland, Germany, Poland, Russia, and England. The red wines are sent to Paris, and into the departments of Somme, Aisne, Ardennes, and Nord. The wines are expensive; the chief articles are the oak, the birch, and the various species of pine and fir. Charcoal is made near Sainte Ménihould, and sent to Paris.

The meadow and pasture lands occupy 95,000 to 100,000 acres. A great number of horses are bred, but the quantity of horned cattle is below the average of France. There are numerous flocks of sheep of various breeds, more English and native; and the Tibet goat has been introduced of late years. The quantity of wool grown is about the average of the department of France. Bees are numerous; and the streams and ponds of the department abound with fish.

The department is divided into five arrondissements as follows:—

<table>
<thead>
<tr>
<th>Name of Arrondissement</th>
<th>Population in 1841</th>
<th>Area in square miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Châlons Central</td>
<td>627,648</td>
<td>398,963</td>
</tr>
<tr>
<td>Dormans</td>
<td>68,987</td>
<td>14,983</td>
</tr>
<tr>
<td>Epernay</td>
<td>75,027</td>
<td>14,876</td>
</tr>
<tr>
<td>Reims</td>
<td>75,027</td>
<td>14,876</td>
</tr>
<tr>
<td>Ste. Ménihould</td>
<td>42,976</td>
<td>14,876</td>
</tr>
</tbody>
</table>

There are thirty-two cantons or districts, each under a justice of the peace.
In the arrondissement of Châlons are Châlons-sur-Marne (pop. in 1831, 12,413; in 1836, 12,922), [Chalons], on the Marne; and Suippes or Suippe (pop. 2324), on the Suippe. The long village of Courtoisie, or Courtoise, on the road from Châlons to Ste. Ménéhould, consists in fact of three villages, one on each side of the road, and extending in all about five or six miles. They have about 2000 inhabitants, distinguished from the surrounding population by their peculiar dialect, customs, and agricultural skills, circumstances which have been the subject of much anti-anglomania. Near the villages are the traces of a Roman road and of the camp of Attitia.

In the arrondissement of Epernay are Epernay (pop. in 1831, 5318; in 1836, 5457), [Epernay]; Damery and Dormans, on the Marne; Orbais, on the Sumerin; Monmasson, near Dormans; Courrières, on the Sermers; Courguins, near the Morin; Anglure, on the Aube; Fère Champenoise (pop. 2049), on a branch of the Auges; Barbonne, Vertus, Avize, and St. Martin d'Ablois. Dormans is in a district producing excellent wine. The inhabitants carry it down the Marne to Paris, and Mepsy is brought up that river from Château-Thierry. Spinning and weaving are carried on, and tiles and pottery of good quality are made near Dormans, which is also the mart for linens and woollen goods. The manufacture of a common kind of Bonaparte's victories over the allies in the hard-sought campaign of 1814. Millstones are quarried in the neighborhood. Sézanne (pop. above 4000 in 1827) was once a place of greater consequence. It was taken by the English under Sir John Elsing in 1814 and 1817. The Independents, or Catholics, of the eighteenth century, were put to death at the end of the war, and consumed by fire in 1812. It is now the seat of considerable trade in agricultural produce. At St. Martin d'Ablois millstones of inferior quality are produced, and paper and cardboard are pasted and manufactured. Vertus and Avize are the most celebrated for the making of wine, which overflows the market.

Fère Champenoise suffered much in the campaign of 1814.

In the arrondissement of Reims are Reims (pop. in 1831, 32,971; in 1836, 33,155), [Reims], on or near Dormans; and Èglise (pop. 1700), on or near the Orbais near Dormans. It is a royal town, 2110 white churches, on the Vesle; Cormicy, in the country north of that river; and Marie, Ay (pop. about 2300), Avenay, and Châtillon-sur-Marne, on or near the Marne. Fismes was the birth-place of Velly, one of the best of the French historians; his inhabitants manufacture coarse woollens. Ay and Marie are surrounded by vineyards, producing some of the best wine in the department.

In the arrondissement of Ste. Ménéhould are Ste. Ménéhould (pop. in 1836, 3953 for the commune, and Vienne le Château, pop. 755). It is a fortified town near the road from Paris to Reims, with houses of brick and stone, and a town-hall of elegant architecture. The manufactures of the town, pottery, glass, and leather, are considerable; but a good deal of fruit is grown in the country round. Ste. Ménéhould was taken by the English under Sir John Elsing, on the 20th of July, 1814, who entered it through the breach. Louis XVI. was recognised here in attempting to escape from France.

In the arrondissement of Vitry are Vitry (pop. in 1831, 6976; in 1836, 6822), on the Marne; and Heiniz-le-Maurup and Sermaise (pop. 1700), on or near the Orbais near Dormans. Vitry arose from the ruins of another town of the same name in the immediate neighborhood, now a village distinguished as Vitry-le-Brûlit. This antient Vitry was taken by Louis VII. de Leune, from Thibaud, count of Champagne, and granted to Eudes de Lusignan. In the year 1313, thirteen hundred people who had taken refuge in it, he ordered the edifice to be set on fire, and the unhappy fugitives to be burnt alive. From this detestable act the place acquired its surnames of parallel, or the burning. The little town was subsequently burnt by Jean of Luxembourg, and entirely ruined by the army of the emperor Charles V. After this last catastrophe Francis I. determined to rebuild it, but not on the same site. The new town, distinguished by the title of Vitry-sur-Marne, rose on the bank of the Marne. It has broad and straight streets; and the houses, though built of wood, are respectable. It was intended to fortify the town, but it has never had any better defence than an earthen ramp; and the town is little more than a place of manufactures of hats, cotton yarn, and cotton hose. There are also some oil-presses. There are extensive nurserygrounds round the town; and in the arrondissement strong hemp is grown, which is sent to Paris and the department of Seine Inferieure by the Aube and Marne. Sermaise has mineral springs, which are in tolerable repute.

The population, when not otherwise specified, is that of the commune, and is chiefly taken from the returns of 1831.

The manufacturing industry of the department is considerable. We work flax, flax-seed, wool, wool-dyeing, and the other processes connected with the manufacture of woolen cloths, kerseymers, flannels, blankets, merinos, shawls, and other woolen goods; and some cotton goods, are carried on to a considerable extent in the districts in which Reims and its environs are the centre. Many of these products are carried on by the workmen and their families on their own account. It is not many years since the factory system was introduced at Reims; before that, the same room served for the dwelling-place and workshop of the manufacturer, his wife, and their children; and he made his candles, his soap, his flax-seeds, his shoes, his cotton, his wood, his wax candles, soap, cutlery, hats, and paper. The exports, both of agricultural produce, especially corn, wine, and oil, and of manufactured goods, are considerable. They are sent down the Marne from Vitry, Châlons, Epernay, and Dormans.

The department of Marne is divided between the diocese of Châlons, which comprehends the arrondissements of Châlons, Epernay, Vitry, and Ste. Ménéhould; and the archdiocese of Reims, which comprehends the arrondissements of Reims and Dormans. The bishop of Châlons is a suffragan of the archbishop of Reims. The department is included in the jurisdiction of the Cour Royale and the circuit of the Académie Universitaire, established in the second military division, of which the head-quarters are at Châlons. It returns six members to the Chamber of Deputies.

The state of education in this department is considerably above the average of France; it ranks as the tenth department in this respect. The number of those pupils in the military census of 1828--9 who could read and write, was sixty-three in every hundred, the average of France being thirty-nine.

This department was comprehended at the time of Caesar's invasion of Gaul in 58 B.C. It belonged to the tribes of the Sueves (Suesésforus and Suesésfors), the Remi (Erimoi, Potau and Strabo), and the Caenaldian, confederated Belge tribes; and of the Tricassae, a Celtic people. In the Roman division of the country the Belge tribes were comprehended in the province of Belges Sequana; the Tricassae in that of Lugdunensis Quarta or Senonis. Several Gallic or Roman towns were included in its limits; as Durcorcorum, capital of the Remi, afterwards called Remi, now Reims; Basilia, perhaps Bacoume, between Reims and Vesle; and Rechic, or Rechic, on the Vesle, in the Roman province of Remi and the Samoens; Fismes, now Fismes, on the frontier between the Remi and the Suevenes; Duro Caulainum, capital of the Caenaldian, afterwards called Caenaldian, and now Châlons; Parnum Minervae, near Le Cheppe, on a feeder of the Vesle, in the Roman province of Remi and Sequana; Viroconium, in the Roman province of Sequana; and Bibe, perhaps St. Martin d'Ablois, in the territory either of the Caenaldian or the Suevenes. In the downfall of the Roman empire this department was the scene of contest between Atila, the Roman general, with his allies, the Franks, Burgundians, and Visigoths; and Atila, king of the Huns, with his allies, the Alans, the Gepidae, and the Ostrogoths. The defeat of Atila at Châlons led to the evacuation of Gaul by him. Subsequently the department was subject to the Belgian tribes, and in the feudal ages formed part of the county of Champagne, which came, in 1335, into the hands of Philippe VI. de Valois, and in a.d. 1361 was formally united to the French crown by Jean 11. In the campaign of 1792 this part of France was invaded by Russian and Prussian forces under the duke of Brunswick, and the French under Dumourier and Kellerman; and in the campaign of 1814, between the Russian and Prussian forces under Blucher, and the French under Napoleon and his generals.

MARNE, HAUTE, a department in the north-eastern part of France. It is bounded on the north-east by the department of Meuse, on the east by that of Vosges, on the south-east by that of Haute Saone, on the south-west by that of Côte d'Or, and on the west by that of Aube, and on the north-west by that of Marne. Its form approximates to an oval, having its greatest length from north-north-west, near St. Didier, to south-south-east in the neighbourhood of Fay- le-Billot, 80 miles; and its greatest breadth, at right angles
to the length, from the neighbourhood of La Ferté-sur-Aube to that of Bourmont, on the Meuse, 48 miles. Its area is estimated at 2420 square miles, which is rather less than that of the English county of Devon, or rather more than the conjoint area of the two counties of Wilt and Dorset, of Lapland, in 1836 it was 255,969, showing an increase in five years of 6142, or about 2·2 per cent., and giving about 106 inhabitants to a square mile. In amount of population and in density of population it is to the average of the French departments to provide a population of 31 inhabitants, falls by far below the English counties with which we have compared it. Chaumont, the capital, is in 48° 17′ N. lat. and 5° 9′ E. long., 135 miles in a direct line east-south-east of Paris, or 148 miles by the road through Provins, Troyes, and Bar-sur-Aube.

The department is hilly, and even mountainous in the southern and eastern parts. The heights of Langres and the Fauquiers mountains, which constitute a continuous range, and form part of the chain that the Vosges, cross the department in a north-eastern direction near the south-eastern boundary. Lateral branches from this main range run to the north-west, separating the valleys watered by small streams belonging to the system of the Seine. The basin of the basin of the Seine is more important than those of the Semois, the Meuse, and the Saône, which separate, between the Rock and the Sambre, the northern and the southern parts. The mineral treasures are, in iron abundance in the centre and northern parts; freestone, which bears a fine polish, whetstones, gypsum, brick earth, fullers' earth, and marl. There are considerable deposits of several kinds of coal-slate, and those of Bourbouin and Bains are in the highest repute. The height of Langres with the Fauquiers, and the principal lateral branch from them, divide the department between the three great slopes, the Western or Osimo, the Rhenish, and the Rhenish slope above the basin of the Seine. These three slopes, the northern, central, and western parts belong to the oceanic slope, and are included in the basin of the Seine. Most of the streams which water this part rise to the north-western slope of the heights of Langres, and have a north-western course. The Seine, which, from the south-western part of the department, but does not join the Meuse within the boundary. The Vire, a tributary of the Aube, waters the north-western parts. The eastern side of the department belongs to the Rhenish slope, and is comprehended in the basin of the Meuse, which has its source and a small part of its course within the department. The south-western part belongs to the Mediterranean slope, and is comprehended in the basin of the Rhône. It is watered by the Vienne, the Saône, and the Amance, feeders of the Saône, which rise in the north-western slope of the Rhenish slopes. There are few lakes or pools: the only marshes are in some parts of the valleys of the Meuse and the Amance. The only inland navigation is that of the Meuse, about six or eight miles long; and in the six Routes Royales, or government roads, having an aggregate length of 253 miles; viz. 174 in repair, 78 miles out of repair, and 1 mile unfinished. The principal road is that from Paris to Bâle, which enters the department on the west and passes south-east through Châtillon, which separates the basin of the Meuse from that of the Semois. From Bâle to Paris, via Briscourt and Strasbourg, is one of the northern corner of the department from St. Dizier, from whence a road follows the valley of the Meuse through Joinville and Vignory to Chaumont. A road from Langres leads to Dijon (Haute Saône and Basançon), and a road from Troyes (Aube) to Touy and Nancy (Meurthe) crosses the department through Dolevant and Joinville. There are several departmental roads, of which about 136 miles are in repair. There is a great number of by-roads and paths, with an aggregate length of above 4000 miles.

The population of the department varies much, but is on the whole fertile: the vegetable soil rests chiefly on a calcarious subsoil. There are fertile plains, beautiful valleys, and well wooded hills; with here and there naked and barren rocks. Agriculture has undergone considerable improvement; the number of persons engaged in agriculture has increased with the demand for food, has increased with the number of parents occupied in agriculture; it has increased with the demand for food, and this is increased with the amount of potatoes, is far below the average, however regarded; that of barley and oats nearly twice the average. Pulses, rape, and mustard are grown; together with a considerable quantity of gentian and other medical herbs. Walnuts and cherry-trees are numerous. The cultivation of vines is an object of considerable attention: the vineyards cover 32,000 or 33,000 acres, and are remarkably productive. The wine of Aubigny and Montsaucou, on the south-eastern slope of the heights of Langres, are the wines of the first class; those of Vaux, Riveux, Pauillac, and Prashey, and are among the best of the second class. The grass lands constitute about one-tenth of the department; more than half of them are meadows, the rest are heaths or commons, or cultivated for maize or other mixed crops. The coarse grass is of great. They are of small size and middle quality. The number of horned cattle is about equal to that in the average of the departments; but relatively to the population it is above the average. Cows predominate and are considered excellent milch cows; but the quantity of wool grown is not considerable. Goats are numerous; but pigs not so. Bees are very generally kept, and in some places a great number of turkeys are reared. The rivers and pools yield fish and crayfish; small games are numerous. The department has a large number of boars, a few wolves, the wild bear, the fox, the roebuck, and the stag are abundant.

The woodlands are extensive, and their produce forms an important article of export. The chief timber is oak and beech. It was estimated ten years ago that about 3000 tons of timber and 12,000,000 deals, of the weight of 12,000,000 deals, of 2500 tons of flire poles with the bark on, were also exported yearly from these forests. The exportation of timber and faggots from the department has probably increased since that period, with the growth of the population of Paris.

The division is divided into three arrondissements, as follows:

<table>
<thead>
<tr>
<th>Name</th>
<th>Situation</th>
<th>Area in sq. miles</th>
<th>Population in 1831</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chaumont</td>
<td>Central</td>
<td>967</td>
<td>65,965</td>
<td>1 N.O.</td>
</tr>
<tr>
<td>Langres</td>
<td>S.E.</td>
<td>638</td>
<td>49,492</td>
<td>1 2 N.O.</td>
</tr>
<tr>
<td>Vassy</td>
<td>N.W.</td>
<td>615</td>
<td>66,440</td>
<td>1 4 N.</td>
</tr>
</tbody>
</table>

The number of cantons or districts, each under a justice of the peace.

In the arrondissement of Chaumont, distinguished as Chaumont et Bassigny: (pop. in 1831, 610; town, 3618 whole commune; in 1836, 6318 for the commune) [Chaumont], and Vignory, or near the Marne. La Ferté-sur-Aube on the Aube; Arc-en-Barrois and Cha-ren-Villain on the Anjou; Neufchâteau and Andelot on the Rognon; Bourmont on the Meuse; and Neufchâtel and Saint Blain between the Rognon and the Meuse. There are iron-works at La Ferté, Château Villiers (with a population amounting probably to nearly 3000) and some iron-works on the road between Chaumont and Neufchâteau. The town is comfortably situated, and commands an extensive view of the Meuse: it has a public library.

In the arrondissement of Langres, the town in 1831, 5969 town, 7460 whole commune; in 1836, 7767 whole.
commune [Languedoc] near the source of the Garonne; Fayel-le-Bilout (pop. 2321 town, 2411 whole commune), near the source of the Salou; and Bouronne-les-Bains [Bourbonnes-les-Bains] on a feeder of the Saône. Fayel-le-Bilout has bleaching grounds; the inhabitants carry on trade in basket-work and leather. In the arrondissement of Vassy are Vassy (pop. in 1831, 2333 town, 2583 whole commune; in 1836, 2694 commune). Doulevant and Éciron on the Blaise; Sonneville and Montereau on the Voivre; and St Urbain. Joinville (pop. 3919 town, 4071 whole commune; in 1836, 5597 town, 6197 whole commune), on or near the Marne. Vassy, or Wassy, is known in history for the collision which took place between the retinue of the duke of Guise and a Hotot congregation in 1567, the thousands of men of the latter being the immediate cause of the religious wars of the sixteenth century in France. The manufactures of the town are yarn, druggists, woollen cloths, nails, and leather. The neighbourhood abounds with iron-works. Sonneville has a boundary of 10 miles, or about 50,000 square miles more than that of France.

Surface and Soil; Coast.—The surface of this extensive country is extremely diversified by mountains, hills, plains, and small valleys. It is in its greatest length, running, at some distance from the sea, and to the north of the boundary, from Cape Nun on the Atlantic Ocean, to Cape dell' Acqua, west of the mouth of the river Mulvina, on the Mediterranean. The general direction of the Atlas is from west to northeast, while the Lesser Atlas, though with the Great Atlas, and north of the Lesser Atlas. [Atlas.] The Greater Atlas, towards its southern extremity, consists of two ranges, both beginning near the Atlantic; the southern, commencing at Cape Nun (south of 28°), is called Mount Adrar, and Mount Rebat; the northern, called the Ras Alifern, bears the name of Mount Bebuan. The two ranges unite about 31° N. lat., and about 100 miles from the shore. Between these two ranges is the plain of Tarudant, or Sus-el-acas. Both the ranges, as well as the rest of the country, is called the Gebel. The north extremity of the range consists of ridges and valleys, and sometimes also mountain-plains: it is well cultivated in some parts, and in others it serves as pasture-ground: towards the southern coastal part, the range is nearly parallel, between 31° and 32° N. lat., and near 5° W. long., where the range turns more to the north, and takes the name of the Lesser Atlas, the width of the range increases considerably, and as most of the large rivers rise in this part of the country, it is the highest summith of the range here; some were said to rise to 13,000 feet and upwards, but Caillet, who seems to have traversed this tract in an oblique direction, on his return from Timbuctoo, does not mention any elevated summits, nor does he speak of having seen a snow on the mountains. He gives the following according to appearances, much less elevated than the Greater Atlas, probably occupies a greater width, sending lateral branches to the east and west, between which there are fertile valleys. Near 3° N. lat. and 4° W. long., the Lesser Atlas descends to the desert, and with the east coast runs north-east and terminates at Cape dell' Acqua; the other, called Er Riff, turns first north-west, then west, and again north-west, until it terminates in the high and mountainous coast which forms the eastern shores of the Straits of Gibraltar, between the L 'd Alge, the east, and Cape Spartel on the west. The country which is included between these two lateral ranges of the Lesser Atlas and the Mediterranean Sea is the most extensive of the two; it becomes more elevated and forms a high ridge to a great elevation, the whole tract is covered with masses of bare rock, with narrow valleys between them. The whole coast-line along the Mediterranean, which from Twint, or Tunant, to Cape Spartel is about 320 miles, is so ill adapted for navigation, that, except at the mouths of the small rivers only, Mount Abya, or the Monkeys' Hill, opposite the rock of Gibraltar, rises to a considerable height.

The elevated and rocky coast continues along the Atlantic nearly as far south as the mouth of the river El Kos, or Lucross. The country adjacent to the coast is rather hilly than mountainous, though a few rocky masses rise to 2500 feet; the soil is mostly gravelly, and sustains only a scanty vegetation, with a few trees. The river (wadi) El Kos traverses an immense plain called M'sharif-Suq, in the central

MARROCq, called by the natives Moghrib-el-acas (the farthest west), or briefly Moghrib, whence the inhabitants are called Moghrabinns, is an empire in Northern Africa, which extends from south to north between 27° and 36° N. lat., the most northern districts forming the southern coast of the Straits of Gibraltar, and from east to west between 1° 20' and 1° 30' W. long. On the north it borders on the Mediterranean, on the north-west and west on the Atlantic Ocean, on the south on the Sahara, and on the east on Algiers. Its surface is estimated by Gruberg at 274,000 square miles, or about 50,000 square miles more than that of France.

In respect of education this department is one of the most advanced. It is exceeded only by the three departments of Meuse, Doubs, and Jura. Of every hundred young men enlisting in the army, 79 are able to read and write; while on the average of the whole of France the number was only about thirty-nine.

This department originally constituted part of the territories of the Ligones, a Celtic people; and of the Catajatae of Gaul, the Ligones were included in the province of Lugdunensis Prima; the Luni in that of Belgica Prima; and the Catalaunii in that of Belgica Secunda. The limits of the present department were fixed by the emperor Julian, the capital of the Ligones, afterward called Ligones, now Langres; and of Agus Borvons, now Bouronne-les-Bains, also in the territory of the Ligones. On the downfall of the Roman empire this district came into the hands of the Franks and rock of Flavigny, which comprehended in the county, afterwards duky, of Langres in Champagne, united to the crown a.d. 1179. Another part formed a detached portion of Le Barrois.

MARNES RISES.—The French geologists inundate this term to designate the upper party-coloured marls, or clayey strata of the new red formation. In Germany these are the Keuper marls, and in England the gypseous and saliferous marls of Cheshire, Worcestershire, Nottinghamshire, &c. [See Sedgwick on "Magnesian Limestone," in Geol. Trans.; Murchison on "Silurian System," &c.] P. C. No. 905

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eastward to the ranges of the Lesser Atlas, and southward to the banks of the river Sebbo. Its surface is partly level, and partly traversed by low ridges, from which the gradient appears to be gradual, as the rivers make numerous bends in the plain and have a gentle course. On its western border the sea has formed a range of sand-hills, by which several small rivers are prevented from reaching the ocean, and, following the shore of the coast northward of the town of Essaouira, is 5 miles long, and the larger, Muzra Ras el Doula (the lake with the winding head), 20 miles long by one and a half broad. The range of sand-hills which separates these lakes from the sea is about 25 feet high. All along the coast near the ocean its slopes are filled up with sand, and can only be entered by small vessels. The plain of M'shara-er-Rumla, though the soil is light, is very productive in corn, and contains excellent pasture-grounds. It is also connected on the east with the fertile district of the east of the town of Fez, between the offsets of the Lesser Atlas.

The plains continue south of the Sebbo river to the banks of the Oum-er-begh, or Morbey, and still farther south, but they gradually change their character, and their fertility and the ranges of the Bebuan and Adrassines. Its shore, which in many places is rocky and inaccessible, and extends in wide plains ascending like terraces one above the other, the eastern being always some hundred feet higher than that immediately west of it, until at the foot of 4000 feet. The inferior fertility of these plains seems to depend more on the climate than the soil, which chiefly consists of a light loam. Water is found only at the depth of from 100 to 200 feet. There are nowhere more than a few wells in the plains. Only isolated spots are cultivated, and there are no trees except stunted pines. The range of hills, rising between 500 and 1200 feet above the plains, divides them from the southern plain, which extends along the base of the Greater Atlas. Where the town of Marocco is situated, from which it obtains the name of the Plain of Marocco, it is about 25 miles wide, but it grows still wider as it advances westward. This plain, which is drained by the river Tensift, is about 1500 feet high near the town; but it is lower towards the sea, as much as between Cape Canton and Mogador, in a low shingle, sometimes sandy, and sometimes rocky. In fertility it is much superior to the central plains.

The plain of Taroudant, which is the most southern, lies between the ranges of the Bebuan and Adrassines. It appears to be traversed nearly in the middle by a range of hills which divide it into two wide valleys. The northern, which alone has been visited by Europeans, is level, and of great fertility, as the extensive woods and plantations of olive-trees prove; but the greater part is a stony desert.

The countries east of Mount Adrass and south of the Greater Atlas are known under the names of Draha or Dara, Taralt, and Segelmess, and are parts of the Biud-Clul-Gerid, or the country of the plains. They have not been visited by Europeans, but these plains are good pasture-grounds, and the northern districts are said to be occupied by two sterile regions, the deserts of Alitania and Angad.

The coast of Mulisia, or Muluya, which rises at near the southern extremity of the Lesser Atlas, and runs northward into the Mediterranean Sea, has a course of about 400 miles; but as it traverses a country which has not been visited by Europeans, its peculiarities are not known. It is the only considerable river in Morocco which falls into the Mediterranean. Seven rivers fall into the Atlantic Ocean. The most northern, the El Kos, or Lucocco, rises in the range of Er-Riff, and in its course of nearly 100 miles is used to fertilize the adjacent country by irrigation. Farther south is the only considerable river in Morocco which falls into the western declivity of the Lesser Atlas, and is joined by several affluents which descend from the southern declivity of the range of Er-Riff. After a course of about 230 miles it enters the Atlantic, near the town of Melalia. Though a considerable river, it is rather a large volume of water, compared with other rivers of this country, its mouth does not afford a harbour; a bar of sand, a quarter of a mile from its outlet, extends almost across, and is nearly dry at low-water of spring-tides. Inside the bar there are from 200 to 250 feet of water, and even at high-water, from the entrance, runs almost across in a west-south-western direction, with three or four feet of water. The channel at each end. The north-western channel is that which is used. The tide rises from a few inches to considerable heights, and the harbour is sheltered, and has sufficient water for a frigate.

The Oum-er-begh, or Morbey, the largest of the rivers which fall into the Atlantic, likewise rises in several branches in the western declivity of the Lesser Atlas, and probably comprises about 300 miles of coast. It is called the river of Marocco, as it fertilizes several valleys; but its course through the plains it flows between high banks of sandy clay, and cannot be used for the purpose of irrigation. At the mouth of this river, about 40 miles due west of the town of Safi, the sea is about 200 feet deep, and has a large basin, on which the town of Safi is built, to which commerce a bar of sand and which, when the moon of the new crescent is almost dry at low-water, and boats alone can enter it.

The Tensift, which waters the plains of Marocco, rises in a subordinate range of high hills, about 40 miles east of the town of Fez, and runs nearly 150 miles with a winding course. It is very probable that the mouth of this river is also closed by a bar.

Through the plain of Taroudant, or Sus-et-saca, flows the river Sus, which rises in Mount Bebuan, north-east of Taroudant, and flows westward to the sea, which it enters at some distance south of the harbour of S. Cruz, or Agadir. It may be considered as the southern boundary of the empire, the Arabian chiefs who govern the country south of it being only nominally subject to the emperor of Morocco. It is said the river rises in the mountains east of the Drâa, or Darad. Until lately it was supposed that this river was lost in the moving sands of the Sahara; but according to the statement of Wilkinson (London Geographical Journal, vii.), it reaches the sea 32 miles south-west of Cape Canton, near Essaouira. In our maps of Africa, if this statement is true, the Draa, which rises on the southern declivity of the Greater Atlas, southeast of the town of Marocco, must have a course of more than 500 miles but nearly the whole of it is unknown. It is however said that the river rises in the mountains east of the Drâa, or Darad. Until lately it was supposed that this river was lost in the moving sands of the Sahara; but according to the statement of Wilkinson (London Geographical Journal, vii.), it reaches the sea 32 miles south-west of Cape Canton, near Essaouira. In our maps of Africa, it is said that the river rises in the mountains east of the Drâa, or Darad. Until lately it was supposed that this river was lost in the moving sands of the Sahara; but according to the statement of Wilkinson (London Geographical Journal, vii.), it reaches the sea 32 miles south-west of Cape Canton, near Essaouira.

The southern declivity of Mount Atlas descends three other rivers, the Fielz Zir, and Gibr. We are not yet able to trace them, with them than they run southwards, and are lost in the sands of the Sahara.

Climate. The climate is not so hot as might be expected from the position of this country. A great part of the empire is subject to the alternation of the sea and land breezes, and in the districts which lie beyond their reach is cooled to some extent by the winds which blow from the mountains. Frost and snow only occur on the mountains. Along the sea the thermometer never falls below 36° or 40°, and even in the hottest places, at S. Cruz, the thermometer never rises higher than 102° or 103°, rarely to 96°. The seasons are divided into the dry and wet. The wet season happens in our winter. Aba- rant rains fall towards the end of October, and last about three weeks: these rains are followed by very dry weather, and we have not yet been able to set in August or September, and showers are frequent till the month of March, when the dry season begins, which is rarely interrupted by showers. The rains are less general and frequent south of the river Sebbo, and also less certain, which is probably the cause of the inferior fertility of these districts, as they are subject to frequent drought. Little is known of the climate south of Mount Bebuan, except that it is very great, and that the southern declivity of Mount Atlas rises no low hills, being exposed to the dry and hot winds which blow from the Sahara and dispense the few vapours which occasionally rise.
Productions.—Besides wheat and barley, which are extensively raised in most of the districts of the plains, rice, Indian corn, and holcus sorghum, or dhurra, are cultivated, especially the last-mentioned species of grain, which is very prolific, and constitutes the principal food of the lower classes. Other objects of cultivation are cotton, tobacco, sesamum, hemp, saffron, and different kinds of beans and peas. The plantations of olive-trees and almond-trees are very extensive. The fruit-trees of southern Europe are also common, especially the fig and the pomegranate. The date-tree is only cultivated on the southern declivity of Mount Atlas, and the best come from Draha and Taflet.

In the districts south of the Oum-er-begh there are large plantations of henna (Lawsonia inermis). The silvers of Mount Atlas are bare, but on the northern there are extensive forests, consisting of the olive, carob (Ceratonia siliquea), walnut, acacia, cedar, stunted palms, and rose-trees, and also cork-trees. The timber is fine, but not large.

The names of every kind are numerous. The horses are distinguished by their beauty, those of the native breed as well as those of Arab origin; the sheep, which are considered as indigenous, and are supposed to have spread from the declivities of the Atlas over all the world, produce a wool inferior to any for softness, fineness, and whiteness; sheep and goats are more numerous than any other domestic animals. Goat-skins constitute one of the most important articles of export. Cows, asses, mules, and camels are also reared in considerable numbers. In the lower valleys, hares; those of the Atlas, wolves, fallow deer, panthers, hyenas, wolves, and several species of antelopes and deer, as well as monkeys and wild boars. Wild boars are abundant in all parts, but most of the other ferocious animals are limited to the southern regions. Ostriches are found in the desert bordering on the southern and eastern districts, and their feathers constitute an article of export. Cranes and storks abound. The locusts sometimes lay waste the provinces bordering on the deserts. Bees are common, and wax is exported.

The coast of Morocco is very imperfectly known. Metals seem to occur in the greatest abundance on the southern declivity of Mount Atlas, especially in those parts which surround the plain of Sus-el-acad, where gold and silver occur, but not in abundance; the latter occurs in the river Draha or Akassa (Assaka). Copper, which in Smrobo’s (p. 530, Casab.) time was worked in these countries, is still abundant; the richest mine which is worked is near Tesleghit, in Sus-el-acad, but there are others in the neighbourhood. Lead is found in Mount Adrar and in the Lesser Atlas. Iron is worked in several places; and there is also antimony. Rock-salt is also said to be abundant, but is not worked. The several small lakes which lie along the sea-shore are natural salt-pans, which produce sea-salt with animal kinds of bees, which is considered not inferior to the English, occurs in several places.

Inhabitants.—The population of this empire is differently estimated. Jackson thought that it amounted to fourteen millions, which number is reduced by Captain Washington to five or six millions. Granger assigns to it 8,500,000 inhabitants, and states that the population is composed of the following nations, in this proportion:—

<table>
<thead>
<tr>
<th>Nation</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amazighis,</td>
<td>3,500,000</td>
</tr>
<tr>
<td>Berbers</td>
<td>3,000,000</td>
</tr>
<tr>
<td>Shehilis</td>
<td>1,500,000</td>
</tr>
<tr>
<td>Arabs,</td>
<td></td>
</tr>
<tr>
<td>Moors, Ludayas, and other mixed tribes</td>
<td>3,550,000</td>
</tr>
<tr>
<td>Beduins, and others of pure blood</td>
<td>740,000</td>
</tr>
<tr>
<td>Jews</td>
<td>339,500</td>
</tr>
<tr>
<td>Negroes, slaves and freemen from Soudan, Calabas, Manises, Moors</td>
<td>120,000</td>
</tr>
<tr>
<td>Europeans, Christians</td>
<td>300</td>
</tr>
<tr>
<td>Renegades</td>
<td>200</td>
</tr>
<tr>
<td>Total</td>
<td>8,500,000</td>
</tr>
</tbody>
</table>

The Amazighis, or Mazirghis [Berbers], are the most antient inhabitants of Northern Africa, and one of the most widely spread nations of that continent, as is proved by the language, the different dialects of which are spoken by the tribes which extend from the banks of the Nile to the Atlantic, as the Tiboos and Tuarecks of the desert, the Fillolus in Seglemesia and Taflet, and the different Shelhli tribes on the Atlas and Mount Bebuan. Most of the tribes occupying the southern districts of Tunis and Algiers also speak the same language. The Amazirghis in Marocco are divided into Berbers and Shehilus. The Berbers occupy exclusively the mountain-region which extends along the mountain-barriers where their flocks and herds graze, and inhabit the mountains of Er-Riff, and are divided into several tribes. Other tribes are spread over the mountains of the Lesser Atlas and the basin of the river Mulwa as far north as the source of that river. The Shehilus occupy the Greater Atlas, and many of the greater valleys and branches of Mount Bebuan and Mount Adrar. It is now the general opinion that their languages are only dialects of one language; but the tribes differ somewhat in their physical character and in their habits and customs. Some are large, well formed, and rather robust and athletic; these have their hair frequently fair, resembling that of the northern people of Europe rather than any nation of Africa, and they have very little hair on their chins. They live generally under tents, in caves situated on steep and nearly inaccessible mountains. They pay little regard to the orders of the sultan, and obey only their hereditary princes or chosen magistrates. In the plains they build houses of stone or wood, but always enclose them with walls. Their chief occupation is that of shepherds and farmers, yet they cultivate some patches of ground and rear bees. The Beduins are chiefly agriculturists, and exercise several trades; their houses are always built of stone, and covered with tiles or slates. They are less robust than the Berbers, and their language is not so pure, yet they measure the Portuguese, from whom some authors think they are descended. They are much more advanced in civilization than the Berbers.

The Moors are the most numerous of the nations that inhabit Marocco. Their language, which is called Maghreb, or Occidental, is a dialect of the Arabic; but it is intermixed with many words from the language of the Amazirghis, and still more with Spanish words. The latter circumstance may be ascribed to the emigration of their ancestors from Spain after the conquest of Granada. These emigrants settled in the towns and plains along the Atlantic.

The Moors of Marocco are of middling size, and rather slimmer when young, but grow stout as they advance in years. Their colour varies from yellow and black, which is principally to be ascribed to their frequently marrying black women from Sudan. They are the only nation of Marocco with which the Europeans have an immediate intercourse. They are the principal inhabitants of the towns; they fill the high offices of government, and form the military class. [Moors.]

The Berbers are the descendants of those who emigrated at the time when the Mohammedan religion was diffused throughout the Hejaz, and who, having been banished from their homes, live in the towns, but the Beduins are dispersed over the plains, where they adhere to their wandering life, living in tents, and following the pastoral occupation. They are a hardy race, slightly made, and under the middle size. Their colour is the same yellow and black, which is preferred to speak in its purity.

The Jews are intermixed among all these nations: their condition is best among the Berbers, where they follow different trades; but among the Shelhli and Moors they are more open to their enemies, and exposed to the most ignominious treatment. They are very numerous in the seaports and commercial towns.

The negroes, who are imported as slaves, frequently obtain their liberty; and as they are distinguished by abilities and industry, they are employed in the public offices and manufactories on a large scale, which supply articles of export. In the town of Fez the red caps are made which are used in all the countries that border on the Mediterranean, besides several kinds of silk goods, especially scarfs, which are used like girdis, and sometimes similar goods are woven with gold thread. The best kinds of silk stuffs, called Culaam, are made of silk imported from Syria; the more common material is got from the Beduins, whose wives rear
ailkeworms. The inhabitants of Fez are also distinguished as goldsmiths, jewellers, and cutters of precious stones; many of them are also occupied in making marocoo leather and other articles of the same kind.

Tanning is well understood. Very good leather is made in the neighbourhood of the towns of El Kasar and Medjez. The tan-yards in the capital are very extensive, and the leather produced is superior to any made in Europe. It possesses the softness and strength of lions and panthers, and giving them a snow-white colour, with the softness of silk. The marocoo leather of the capital is yellow, made in Taflet green, and in Fez it is dyed red. Their bright colours are considered insiniable in Morocco. Very good sole-leather is made in Rabatt and Tetuan.

Carpeti are chiefly made in the province of Douchlia, south of the river Oum-er-beh, and are known in Europe by the names of Tindoufe carpets. They are known for their colours and the great variety of the pattern; the better kinds are very dear.

**Political Division and Towns.**—The empire of Morocco is composed of two kingdoms of Fez and Marocoo, of which the former is the capital of the country.

The streets are not occupied; the capital, north of the river Oom-er-beh and the basin of the river Muliva; the kingdom of Marocoo comprehends the remainder, with the exception of the countries south of the Greater Atlas and Mount Beubaun, which are considered as a separate kingdom called Beubaun. At the capital is divided into thirty governments, of which fifteen belong to Fez and fifteen to Marocoo. In the latter the country between Mount Beubaun and Mount Adrar is included. The countries of Draha, Taflet and Segemsela are divided into the same number of provinces.

Along the coast of the Mediterranean the Spanishi possess Melilla, near Ras-ul-dir, or Cape Tris Forcas, and farther westward Alhucemas and Peñon de Velez, three small fortresses, which have no communication with the interior.

Not far from the Straits of Gibraltar is Tetuan, built on the declivity of a hill, about half a mile from a small river (Martil) which falls into the Mediterranean about five miles from the town, the mouth of the river forms a harbour for vessels of moderate size. It carries on a considerable commerce with Spain, France, and Italy, exporting wool, barley, wax, leather, hides, cattle, mules, and fruits, of which the valley of Tetuan produces abundance of the finest quality. The population is 12,000 (Grabberg), or 40,000 (Semple).

Near the eastern entrance of the Straits of Gibraltar is the Spanish town of Ceuta [Ceuta], and near the western the town of Tangier, where the European consuls-general reside. The town is built on a hill, near a spacious bay, 14 miles west of Cape Sparteel, and its harbour is defended by three small fortresses. The streets are wider and straighter than in other towns of the empire; but except the houses of the European consuls, and a few belonging to rich persons, there are no houses of good appearance here, and the town is defended by only several synagogues, and the Roman Catholics have a church, the only Christian establishment of this kind in the empire. The commerce of this place is limited to some trade with Gibraltar and the opposite coast of Spain. The population is 2,000 (Grabberg), or 6,000 (Washington).

Along the Atlantic, from north to south, are the following towns: El Arish, or Lasrah, at the mouth of the river El Regreg, has a good harbour; the bar at the mouth of the river has 16 feet of water at spring-tides, and spacious anchoring ground within, with water enough for frigates. Sisa, or Safi, and Rabatt, are separated from each other by a促进 El Regreg, which forms a portion of its harbour; they contain together 50,000 (Grabberg) or 31,000 inhabitants (Washington). Safi, formerly noted for the boldness of its pirates, is badly built and partly in ruins; but Rabatt is a thriving town, and has some good streets. Its commerce is still considerable, though a portion of it has been transferred to Mogadore, and its trade with Genoa and Marsa-elle is extensive. The principal articles of exportation are wool, corn, and wax, and the manufactured goods of Fez and Mekinez. The European and English India goods, destined for Fez and the northern provinces, are imported through this town. Safi, or Asaf, farther south, not far from Cape Cantin, is between two hills in a valley, and is subject to inundations. It formerly exported many products of its country, as its roadstead affords excellent anchorage, but the rise of the sea has injured its trade.

The population is 12,000, including 3,000 Jews. Mogadore, or Saura, as the Moghrebins call it, is the part of the town of Marocoo, lies on the sea-shore between Cape Cantin and Cape Gher. It was founded in 1760. Mogadore, or Saura, is the chief city of the country, and is near the mouth of a large river, called the Fortess, and contains the custom-house, the palace of the Pasha, the other public buildings, and the houses of Europeans; the latter part is only inhabited by Jews. The harbour is formed by a small island, lying south of Mogadore, and extends about 2½ miles, and from low tides there are only 10 or 12 feet of water in the harbour, and large vessels are obliged to anchor without, at a distance of about two miles. The commerce of this place with London, Amsterdam, Cadiz, Leghorn, Genoa, the United States of America, is considerable. The population is 10,000 (Jackson), or 17,000 (Grabberg).

Agadir, or S. Cruz, farther south, has a good harbour, and formerly carried on a considerable trade, which has been transferred to Mogadore by order of the government.

In the interior there are several populous towns, of which the following are the principal: Taza, or Taza, on one of the upper branches of the Sebbo river, in a very fertile country, where 20,000 inhabitants are employed in the manufacture of tanning materials, and a considerable trade with Tlemman in Algiers (being situated near one of the most frequented passes of the Lesser Atlas), and with Fez, El Kasar, or Karen, on the lower branch of the Sebbo river, is well built, and has some manufactures, with 8,000 (Washington) or 5,000 (Grabberg) inhabitants. Fez, or Fas, the most industrious and commercial town of the empire, is situated in a valley which is drained by one of the upper branches of the Sebbo river. It contains upwards of 40,000 inhabitants, which are employed in weaving, and numerous pupils. The mosque called El Karoub is a magnificent building, and that of Mula Dross, the founder of the town (807), is the object of many pilgrimages and an asylum for thieves and murderers. The imperial palace, with the buildings and gardens annexed to it, occupies a large space. The number of persons employed in manufactures is considerable. Every trade is carried on in a separate street; generally only one kind of goods is sold in each shop. The commerce of this town with the seaports, especially with Tangier, is very great, and its produce is sent to Fez, El Kasar, and Sudan, is very great. The streets are narrow, and, owing to the great height of the houses, also dark; there are numerous extensive caravansaries, or public inns, where the travelling merchants find lodging. The population is 90,000 (Jackson), or 100,000 (Grabberg).

Mekinez, or Mekinas, west of Fas, a large town built on a hill in a wide and fertile plain, has also narrow crooked streets. It has many manufactures, especially of leather. The imperial palace is more than two miles in circuit, and has large orchards and gardens annexed to it. The population is 50,000 (Grabberg).

Taza is situated in one of those fine valleys which are watered by the numerous branches of the Oum-er-beh, and is the scene of much trade with the base of the Atlas. It has large manufactories of woolen cloths, which are sold in Italy and elsewhere. The population is 10,000 (Grabberg).

Demnet, or Dimmit, a considerable place east of the town of Marocoo, near the base of a branch of Mount Atlas, is the seat of a powerful family. The caravans which go from Marocoo to Draha and Sudan here begin to ascend the mountain-pass which leads to Tatta.

Marocoo, the capital of the empire and the residence of the sultan, is situated on level ground, four miles south of the river Tensif, and is surrounded by four walls, which are kept high, with square turrets at every fifty paces. The walls are near six miles in circuit, but the area enclosed is far from being covered with buildings, there being several large gardens and open spaces. The streets are narrow and irregular, and in many cases, as in Fez and Mekinez, are intersected by arches and gates. Several open places, where cattle cannot be called squares, are used as market-places. The
houses, which are only of one story, have flat roofs and terraces, like those of Spain, and the rooms open into a court, which is sometimes surrounded by arcades and embellished by a fountain. The houses have no windows, no fice-place, and no furniture, except a cushion or two. Large aqueducts, which convey the water of the river Tescit to the city, surround it, and some of them are ten or twelve feet deep. They are continued southward towards the Atlas, in some place to a distance of 20 miles. These aqueducts supply the fountains with water : the fountains are numerous, the most of which have traces of destruction.

On the south of the town, but without the walls, is the imperial palace: a wall of a quadrangular form, enclosing a space about 1000 yards long by 600 wide, is equal in strength and height to the walls of the town. The enclosure is divided into squares, laid out in gardens, round which are detached pavilions, forming the imperial residences. The floors of the rooms are tessellated with various coloured tiles, but otherwise they are plain, the furniture consisting of a mat, a small carpet at one end, and some cushions.

There are nineteen mosques, two colleges or madrasas, and one hospital in this town. The principal mosque, El Kontubia, is distinguished by a lofty tower, 220 feet high, a master-piece of Arabic architecture. The bazaar, or market-place, is a long range of shops, covered in and divided into compartments, in which the productions of the agricultural and manufacturing industry of the country, as well as goods from China, India, and England, are exposed for sale. There are some manufactures; the tanneries of Maroc are among the most celebrated in the world ; and leather is exported. The country is also celebrated for its dates, its lavender oil, and its honey; and it produces large quantities of olive oil, which are exported to the Mediterranean and to the Indian Ocean. It is a rich and fertile country, and is divided into three kingdoms, Tlemcen, Mekri, and Taffiliet.

Tlemcen, the capital of a separate kingdom, about 60 miles from the port of Agadir or S. Cruz. It is built in the middle of an extensive plain, and its walls, which are now in a ruinous state, are very extensive. The houses are low and built of earth, and are surrounded by a wall, so that the place rather resembles a well-peopled country, than a town. The inhabitants are industrious, and the woollen dresses and morocco leather made here are much used in the interior of the country. The goods are sold in the neighbourhood, and a considerable quantity of the copper is made into domestic utensils in this town. The population is 22,000 (Graber).

In this province are also the towns of Teda, with 15,000 inhabitants, and Noguir, a town of 20,000 inhabitants, on the road from Algiers to Tiflis. This road is said to be more populous. Farther to the south-west, near the banks of the river Draa, is the village of Nun, 50 miles from the sea, with 2,000 inhabitants. It is one of the points from which the caravans depart for Sudan.

Tetouan, at the mouth of the river Tafilalet and Tatta, two other places from which the caravans start on their way to Sudan. The former is said to be a considerable place, with 10,000 inhabitants (Graber), but Caillé in traversing this country neither saw nor heard of any town of that name.

Education.—The Moors send their children to school at the age of six years. The elementary schools, which are very numerous, both in the towns and in the country, are either private or public establishments. The former are called the "elmadra", and the latter, the "almadra". At the latter schools reading, writing, and correct pronunciation are taught; the children also learn by heart some passages of the Koran. The method of teaching resembles in some respect that of the children of Berber; they are sent when very young to the East from a very early time. In a few schools, established for girls, they teach reading and writing, and some things which are connected with domestic economy. Boys sometimes remain in these schools, until they know the Koran by heart. Then they are sent back, and after some further education into the higher schools, called in the singular madressa, and in the plural maderras, where they are prepared for the university of Fez, called Dar-el-Im (or the House of Science), or other colleges. In the colleges they are instructed in grammar, theology, logic, the sciences, poetry, arithmetic, geometry, astronomy, and medicine.

The commentaries and traditions relating to the Koran, the laws, legal procedure, and all the formalities to be observed in the courts, are also explained. There are three degrees; students called tabeb, doctors called faik, and wise men altem, in the plural olama. As there are no printing establishments, calligraphy, called gedelo, is enumerated among the sciences.

Commerce.—The Moghrebins carry on a very active commerce with Sudan, or the interior of Africa, and with Egypt and Arabia by caravans, and with several parts of Europe by sea. The caravans, when they set out from the commercial towns of Tetuan, Fez, Marocco, and Taffilet, generally consist of about 150 persons and 1000 or 1500 camels, and are led by a chief called a mule, or akka, on the Draa river, the point where they enter the desert, they consist of about 500 or 600 persons, with 16,000 and even 20,000 camels. Towards the southern border of the desert they come to the oases of Toualauni and El Haouari, and are sometimes composed of 6000 camels, by which they buy large quantities for the market of Sudan. From Timbuctoo, as a central point, the merchants traverse the adjacent countries, exchanging their goods for those of Sudan. They import into these countries rock-salt, wool, and cloth and dresses, scurf, tobacco, Turkish hangers, and blue cloth, and take in return ivory, rhinoceros' horns, incense, gold in bars and powder, ostrich feathers, gum-arabic, cotton, sassafras, indigo, and slaves. Graber estimates the annual value of the exported goods at one million pounds, and that of the returns at ten times that sum ; two-thirds of the imports are again exported to Algieria and Tunis.

The caravans which go to Mecca are chiefly composed of pilgrims, and are much more numerous. They depart only once in the year. They pass from Fez through Taza over the Lesser Atlas, traversing the northern districts of Algiers and Tripoli, in latter country it may be said to terminate at Kairouan. Hence it proceeds southward to Bougie, by the towns of Constantine, Algeria, and Kairouan, and ultimately to Mecca. The southern road passes from Marocco to Taza, and thence through the southern districts of Algiers and Tunis to Cadiz and Fez, whence it leads to Alexandria and Mecca. Indigo, cotton, silver, copper, olive-oil, tobacco, cotton, and woollen articles manufactured in Fez, Taza, and Taffilet, are exported by these caravans, and they import the cotton and silk goods of India, some Persian silk-stuffs, rose-oil, amber, musk, balasam, and spices, but particularly cotton, wool, and raw cotton. The goods of the English merchants, such as the black cloaks of Toulkandar, and the shawls of Fez and Taza.

European vessels visit the harbours of Tetuan, Rabat, Salon, and Macalder, and export the produce of the empire to Italy, France, Spain, England, and Holland. The principal goods exported are:—wool of good quality, which goes principally to Genoa, Marseille, and Holland; wax, to Leghorn, Marseille, and Lisbon; sheep's wool, to Leghorn, Marseille, and London; cotton, to Portugal and Holland; gums, especially those brought from the Sudan, to England; and silk, in the form of rolls, which is exported to India, Japan, China, and the East Indies. The exportation is permitted. Among the less important articles are some manufactured in the empire, as scurf of wool and silk, red or yellow morocco leather slippers and shoes, the black cloaks of Toulkandar, and the shawls of Fez and Taza.

Among the goods which are imported, the cotton-cloths brought from the East Indies and from England constitute by far the most important articles. There are also imported different kinds of woolen stuffs; raw silk and silk stuffs; colonial merchandise, especially sugar, pepper, and ginger; wine, and various kinds of spirits; cloth, cotton, flax, and damask, cochineal, alum, bar-iron from England; steel from England and Trieste; iron-wire, tin and nails, corals, looking-glasses, knives, cotton, brimstone, earthenware, and glass. In 1808 the number of vessels was sixty-four, and the tonnage 3870 tons. In the same year ninety-four vessels left the ports, with a tonnage of 5894 tons. The imports were valued as 172,000l., and the exports at somewhat more than 131,000l.

Government.—The government is despotic, more even more so than in the Turkish empire; the people are much
oppressed, and the Christian merchants exposed to great losses by capricious ordinances.

[Note: The text contains a series of names and places, likely references to historical events or figures.]

MARONITES, the name of a community of Christians belonging to the Western or Roman church, and living on Mount Lebanon. They are neighbours of, and allied to, and in some places mixed with the Druses, and, like them, independent, in Egypt, in so far as foreign influence and the power of the Mamluks are concerned. The Maronites occupy the valleys and fastnesses of the principal ridge of Lebanon east of Beyrouth and Tripoli, and they extend inland as far as the Bekaa, or plain between the Libanus and Anti-Libanus, where they are in a state of nature, and not intermixed with them. The town of Zghîkî, in the valley of Bekaa, contains between ten and twelve thousand inhabitants, chiefly Maronites. There are also many Maronites at Beyrouth and Tripoli; but the tract of country in which the great bulk of the Maronite church, but the regular clergy, extends along the ridge of Lebanon from the Nahr el Kebîl, a stream which enters the sea 12 miles north of Beyrouth, to the Nahr el Kebîr, which enters the north coast of Tripoli, near the island of Rodos. The Maronite church, on which the Mamluks have a right to levy tribute, is on both sides of the Mahrût frontier on the Norasîr, or Anshîrî, who extend to the northward towards Latakiah, and the Ismaelians, who live further inland near the banks of the Orange. [Ismaelites.]

To the eastward the Maronites have for neighbours the Mahometan independents of Barattieh, of the Bey, of the Ali, who live under their own emir, and occupy the border or district of Bâlabk and part of the Anti-Libanus; and on the south they border on the territory of the Druses, with whom they form one political body, being subject to the Emir Bechar [Dawbei], in so far as foreign influence and the power of the Mamluks are concerned. The Maronites are not so numerous as the Moslems, and it is not one to every large village. The Maronite men are not idle; they cultivate the land belonging to their convenants, and live by agriculture. Many of the Maronite ecclesiastics are under the jurisdiction of bishops, of whom there is one in every large village. The bishops are under the obligation of celibacy. Some of them are secular, and some have an interest in the affairs of Tripoli, where there is a printing-press, which furnishes the elementary books for the use of the Maronite schools.

Not far from Kanîn is the large village of Eden, ten miles above which, and high up the Libanus, is the famed cliff of old cedars, called the Cedars of Solomon, of large dimensions, but now reduced to seven in number (Lamarine, Voyage en Orient; Richardson), not including the younger and smaller ones. Dr. Richardson measured the trunk of the great cedars and found them to be in proportion. The whole cliff of old and young trees may be walked round in about half an hour. Old cedars are not found in any other part of Libanus.

At the opposite or southern extremity of the Kessrouan is the convent of Maroûn, and near it the cloister of Antouine is the residence of the papal legate and of some European missionaries. Near it is a convent of Maronite nuns.

The Maronites derive their name from a monk of the name of Maro, who, in the fifth century, collected a number of followers, and founded several convents in these mountains. When the Monothelite heresy prevailed in the East in the seventh century, and was favoured by the court of Constantinople, many Christians who did not embrace its tenets took refuge in the fastnesses of Libanus, around the convent of Maro. From the name of Maro the population of the mountains. This is the account of the Maronites themselves: others pretend that the Maronites were Monothelites, who took refuge in the Libanus after the emperor Anastasius II. had condemned and proscribed their sect, in the beginning of the eighth century. [Eutychians.]

Joseph Simonus Assamani, and his friend Ambacar, better known as Father Benedetti, have defended the Maronites from the charge of Monothelites. Amurath, the Othoman, after his victory over the Arabe Christians of Libanus, made a solemn promise to the patriarch of Antioch, concerning the origin and the lineage of the Maronites. In 1736, at a great synod held at Marâna, the Maronite church formally acknowledged the canons of the Council of Trent, but they retained the use of the Syriac language, as compared to the Arabic, which is the vulgar tongue. The number of Maronites is said to be about 200,000 individuals, and to contain between thirty and forty thousand men fit for military service. Every Maronite is armed, and they are all soldiers in case of need. Volney reckons them, in 1784, at 120,000, but the population has been rapidly increasing since that time. Their language is Arabic, and by their appearance and habits they belong to the Arabian race. They are a fine-looking people, high-spirited, civil and hospitable, especially towards European travelers, and perfectly honest. Robbery and other acts of violence are unknown among them, except among the Moors, altogether an interesting race, full of vigour, and perhaps destined with the Druses to act an important part in the future vicissitudes of Syria. (Jowett, Light. Littazuz, and other travellers in Syria.)

The Maronite is a member of the Quirinal Mount, a convent of Maronite monks, who perform the service of the mass in the Syriac language, according to the liturgy of their country. This church was founded by Pope Gregory XIII. and is dedicated to St. John. The monastery serves as a college for the education of the young Maronite princes, who are sent, upon orders, after which they return to their own country. It is one of those exotic colonies which give a peculiar interest to the city of Rome.

The ceremonies of these Maronites of Rome on great festivals, and during their banishing in Syria, and their curious musical instruments, are described by the Abbé Richard, in his Voyage en Italie.]

MARONS. [Jamaica.]

MAROT, CLEMENT, born at Cahors in 1491, entered the service of the Duke of Alençon as page. He afterwards followed Francis I. to Italy, and was wounded and taken prisoner at the battle of Pavia. On his return to France he wrote poetry for Diane de Poitiers, the king's mistress, who showed him favour; but having presumed to express a disrespectful opinion of the Pope, he was ordered to be delivered up to the Inquisition. In 1532 he was sent to the Bishop of Paris, and then to Tours, where he was examined and imprisoned. In the summer of 1533 he was released on his oath to be a good and obedient subject of the King of France. In 1537, however, he was imprisoned again for his adherence to the Roman de la Rose. While Francis I. returned from his Spanish campaign to the court of Milan, and the King of France left Paris for the court of Bologna, Marot, with a number of others, was taken to the court of Mantua, where he was examined and imprisoned. He then lived at Savoy. In 1539 he wrote in verse, elegies, sonnets, ballads, canzoni, and epigrams. His style has the simplicity of his age, united with grace and poetical fancy. He left a natural son, Michel Marot, who was also a poet. The works of both father and son were published together at Lyons in 4 vols. 4to., 1731.

MARPURG. [Marburg.]

MARPURG, FRIEDRICH WILHELM, a very eminent writer on the theory of music, was born in 1716, at Seehausen in Prussia. According to M. Fawkes, his counsellor of war to Frederick II. of Prussia, but his friend Gerbor says that he was secretary to one of that king's ministers; both however agree that he latter held the office of tutor. The last mentioned was author of several treatises on the subject of music: the next is more a history of his personal history than that early in life, he passed a considerable time in Paris—which probably led to his death.
paya). The inhabitants also cultivate bananas, plantains, and potatoes, and sweet-bread (Caladium sagittifolium). From the roots of the mulberry-tree (Morus alba) they make their garments. The wild cotton is inferior to that which is cultivated in some other islands, and the sugar-cane is abundant, large in growth, and of excellent quality. Tobacco is extensively cultivated. There are no animals except hogs and domestic birds, and constitutes one of the most common articles of food.

The inhabitants belong to the same race that people the Society and Sandwich Islands, of which their language and bodily conformation offer undoubted proof. Their complexion is dark brown, but the dark coarser hair is much longer than the men. Many of the navigators speak of their figure in terms of admiration, and consider them as perfect models of symmetry. Langsdorff states that the measures taken on the body of one of their chiefs agreed exactly with those of the standard measures of the Ancient Egyptians, and he attributes such statements, and it seems that the difference between individuals is greater here than in most other countries, and that the men vary in height between four feet ten inches and six feet. They have carried the art of tatooing the body to a greater extent than in any nation, the bodies of distinguished persons being covered all over with regular figures of a very tasteful pattern. The people are cannibals. They eat both the bodies of their enemies, who are killed in battle, and also other persons, at the instigation of the priests, of whom there are several hundred. This unlamented practice occasionally happens, women and children are killed for food. They have chiefs, but they are without authority. Their sorcerers have acquired a great influence over them, as they are credited with spirits, and punish those who transgress what has been determined by them. They have always shown themselves very friendly towards Europeans, but the missionaries who have been among them have not been successful in their labours.


MARQUIS, a title of honour used in England and on the continent. Persons who have held this title in England are the second in the five orders of English nobility. The dukes only are above them. In parliament all peers have the same privileges, by whatever title they are known. Marquises in England have this privilege above earls, that their younger sons are addressed as 'my lord,' as Lord Henry Petty, Lord John Thynne.

All titles of honour seem to have been originally the names of important offices, or to have denoted persons invested with a peculiar political character. Marquis is generally used, as we have already said, for persons who have been suggested, to have designated originally persons who had the care of the marches of a country. [Marches.]

In Germany the corresponding term is markgraf (margrave), which seems to be 'lord of the marches.'

Villiers made Henry Courtney, earl of Devon, no sooner the reign of Richard II. In the reign of Edward III. a foreign marquis, the marquis of Juliers, was made an English peer with the title of earl of Cambridge, and this circumstance probably suggested to King Richard the introduction of this new order of nobility. The person on whom it was conferred was his great favourite Robert de Vere, earl of Oxford, who was created duke of Ireland and marquis of Dublin in 1385. But the title had no long continuance in him, for three years after he attained it he was beheaded, and the title, as far as we know, came to an end. In 1397 one of the illegitimate sons of John of Gaunt was created marquis of Dorset, but he was soon deprived of the title, and his son had only the earldom of Somerset. The title of marquis of Dorset was however revived in the male branch in 1691. His son John was created Duke of Richmond, and was afterwards made marquis of Suffolk.

In 1470 John Nevill, earl of Northumberland, brother to Richard Nevill, earl of Warwick, the king-maker, was made marquis Montacute, but he was so soon after slain at the battle of Barnet, and the title became lost of fame, and was not revived,

In 1475 Thomas Grey, earl of Huntingdon, son to the queen of King Edward IV. by her former husband, was made marquis of Dorset; and in 1489 Maurice Berkeley, earl of Nottingham, was made marquis of Berkeley. Henry Nevill, earl of Kent, was made marquis of Exeter; and he made Anne Boleyn, a little before his marriage with her, Marchioness of Pembroke. William
Marriage is a contract by which a man and a woman enter into a mutual engagement, in the form prescribed by the law, upon which they reside, to live together as husband and wife during the remainder of their lives. Marriage is treated as a civil contract even by those Christians who regard it as a sacrament, and as typical of the union between Christ and the church. The religious character of marriage does not attach until there has been a complete civil contract, binding according to the laws of the country in which the marriage is contracted. The authority of the sovereign power in regulating and prohibiting marriages is therefore not affected by the superincumbent church. Among Protestants marriage has ceased to be regarded as a sacrament, yet in most Protestant countries the entrance into the marriage state has continued to be accompanied by religious observances which are not hortatory but essential to the institution of a valid marriage, any further than the sovereign power may have chosen to annex them to, and incorporate them with, the civil contract.

After the establishment of Christianity, in order to avoid the scandal of persons living together who were not known to be married, and also to secure and perpetuate the evidence of marriage, where really contracted, it became usual to make the marriage promise in the presence of the assembled people, and to obtain at a time the blessing of the law. As the Christian religion is not a faith of the Catholics, the party who had been married before, in which case no nuptial benediction was antiently pronounced, the benediction once received by one party being considered sufficient to hallow the union as to both, unless by the distinction it was intended to intimate the sanctity of the marriage, through toleration, though tolerated, not sanctioned by the church. So late however as the twelfth century, in a decretal epistle of Alexander III. to the bishop of Norwich, the pope says, "We understand from your letter that a man and his wife mutually accepted one another with the presence of any priest, and without the observance of those solemnities which the Anglican church is wont to observe, and that before consummation of this marriage he had contracted marriage with another woman, and consequently, that marrying in the same manner, if the man and the first woman accepted one another de praenti, saying one to another, "I accept thee as mine, and I accept thee as mine," although the wanted solemnities were not observed, and although the first marriage was not consummated, yet the woman ought to be restored to her husband; since after such consent he neither should nor could marry another.

Private marriages, designated clandestine marriages by the clergy, continued to be valid till the Council of Trent, which, after solemnizing those who should say that they were married, declared that the former acts of the parties were void, decreed, contrary to the opinion of 56 prelates, that thenceforward all marriages not contracted in the presence of a priest and two or three witnesses should be void. This decree, being considered as a usurpation upon the rights of the sovereign power, did not extend to the laity, whether any and what formalities shall be required to be added to the consent of the parties in order to constitute a valid marriage, has never been received in France and some other Catholic countries.

A marriage was clandestine if contracted otherwise than in public, that is, in ecclesiastical; and it was called an irregu- lar marriage if it was clandestine, or if, though not clandestine, it was contracted without the benediction of a priest in the form prescribed by the rubric, the intervention of the register being considered as unnecessary. Clandestinity and irregularity subjected the parties to ecclesiastical censures, but did not affect the validity of the marriage.

The decrees of the council of Trent had no force in England. A marriage by mere consent of parties, until the passing of the Marriage Act in 1753, constituted a binding engagement; though if application were made to the ecclesiastical authority, letters of administration of the marriage title derived through such irregular marriage, those courts sometimes showed their resentment of the irregularity by refusing their assistance, more especially where the non-compliance with the usual formalities could be traced to disinterest on the part of the wife. While celibates are not required by the Church before the Marriage Acts were, it is now immaterial to consider. Such of them as are not incorporated into any of the Marriage Acts, are now of no force for any purpose.

A valid marriage, as well as before since the Marriage Acts, it is necessary, 1st, that there should be two persons capable of standing in the relation of husband and wife to each other; 2dly, that they should be willing to stand in that relation; and 3dly, that they should have contracted marriage with each other.

1. The capacity of standing in the relation of husband and wife implies that at the time of the contract there should be no natural or legal disability. Total and permanent dis- ability on either side to consummate marriage will render the contract void. Temporary inability, as for instance, a seaman being at sea, not affect the validity of a marriage. Temporary disability from defect of age does not invalidate the marriage, but it leaves the party or parties at liberty to avoid or to confirm the marriage union on attaining the age of 14, for males, or 12, for females. Before the abo- lition of feudal tenures, when the lords were entitled to sell the marriages of their male and female wards, infanticide marriages were very common, fathers being anxious to prevent widows and husbands from being left with their children after their death, and lords being eager, either to secure the price for their own family, or to realise the profit resulting from a sale. A person who is already married under a legal disability to contract a second marriage when the first wife or husband was dead, the children of the second marriage would not in England derive any benefit from the absence of moral guilt in their parents, though in France and some other countries, where such disabilities have existed, bonds, or certificates, are treated with greater indulgence.

Near consanguinity or relationship in blood is a legal im- pediment to marriage. The degree of nearness which shall bar marriage varies in different countries, and has varied at different times. This impediment is founded not only upon the moral but upon the physical constitution of man. The purity of domestic intercourse, the sanctity of affection with which a family circle is comprised, would be at an end if monon-
and even with the present restrictions intermarriages in families are frequently productive of the most injurious consequences, as the examples of pollution are to be duly heeded. But if this impediment has been carried as far as it can be, or the nature of the conjugal relation, is incapable of contracting marriage. So is a lunatic, except during a lucid interval. But however absurd it may appear, children are presumed to be lunatics, in cases of consent to the marriage engagement at seven; and though the contract is not absolutely binding upon them until they reach the age of consent, still the marriage of a child above the age of seven, while the time during which they have dwelt there, is to be delivered to the minister seven days before the first publication (s. 7). Banns are to be re-published on three Sundays, if marriage do not take place within three months after publication completed (s. 9). No licence of marriage (that is, the licence, on which it is essential that the minister of the parish or chapel be granted to solemnize marriage in any church or chapel not belonging to the parish or chapel within which the usual place of abode of one of the parties has been for fifteen days immediately before the granting of the licence (s. 10). The minister, according to the form set out in the act, to the superintendent registrar of the district, or of twenty-one to seventy-four, if without licence, the superintendent registrar, upon request, is to issue a certificate, provided no lawful impediment be shown, stating the particular fact in the notice, that the marriage is by a man and woman, not less than seven days, or of twenty-one days has elapsed since the entry of such notice, and that the issue of such certificate has not been forbidden by any authorised person (s. 7). This provision does not apply to marriages by licence celebrated in a church within the jurisdiction of the Anglican Church (s. 7). The act of 1837 provides that a marriage may be granted by a superintendent registrar, on the ground that it was for the duration of the marriage, the grant of the licence (or the right of the maker of the oath, &c.), had his or her usual place of abode within the district in which such marriage is to be solemnized; the person being of lawful age, and no widow, is under twenty-one, that the consent of the person or persons whose consent is required to a marriage solemnized by licence, as would have been required to marriages by licence before the passing of the act (that is, by 4 Geo. IV. c. 76, s. 16 & 17); and every person whose consent to a marriage by licence is required by law is authorised to forbid the act of the superintendent registrar's certificate (s. 10). Every superintendent registrar may grant licences for marriage in any building registered within any district under his superintendence (s. 11). The making of the marriage may be granted by a superintendent registrar, on the ground that it was for the duration of the marriage, the grant of the licence (or the right of the maker of the oath, &c.), had his or her usual place of abode within the district, in which such marriage is to be solemnized; not being of lawful age, and no widow, is under twenty-one, that the consent of the person or persons whose consent to such marriage is required by law has been obtained thereto, or that there is no person having authority to give such consent (s. 12). Marriage after notice,
unless by virtue of a licence by the superintendent registrar, is to be solemnized or registered until after the expiration of twenty-one days after entry of notice, and no marriage is to be solemnized by the licence of any superintendent registrar, or registered, until after the expiration of seven days after the day of the entry of notice, unless it is to be solemnized or registered within three calendar months after notice entered by the superintendent registrar, the notice and certificate; and all other proceeding, become utterly void; and no person can procure a marriage thereto by any registrar to register the same, until new notice, entry, and certificate (s. 15). The certificate of the superintendent or (superintendents) is to be delivered to the officiating minister, if the marriage is to be solemnized according to the rites of the Church of England and such certificate is to be delivered to the registering officer of Quakers for the place where the marriage is solemnized, if the same shall be solemnized according to their usages; or to the officer of a synagogue by whom the marriage is registered, if to be solemnized according to their usages; or to the registrar general, who is to register such building according to their usages, and to the registrar or by whom the marriage is to be solemnized, if the marriage is to be solemnized according to their usages, to send both certificates to the registrar of the district in which the marriage is to be solemnized, and to give public notice of the marriage, as required in the 'London Gazette' (s. 18).

After the expiration of the twenty-one days, or of seven days after the day of the entry of notice (that is, from the surrogates), it may be solemnized in the registered building stating in the notice, between and by the parties described in the notice and certificate according to such form and ceremony as they may see fit to adopt; every such marriage to be solemnized shall be entered between the parties thereon, in the presence of some registrar of the district in which the marriage is solemnized, and of two witnesses.

Some in part of the ceremony, and in the presence of the registrar and witnesses, each of the parties is to declare:

'I do solemnly declare that I, A. B., have no lawful impediment why I, A. B., may not be joined in matrimony with C. D.'

And each of the parties is to say to the other:

'I, A. B., do promise to C. D., to be my lawful wedded wife (or husband)'

Provided also, that there be no lawful impediment to the marriage of such parties (s. 20). Persons who object to marrying after due notice and certificate issued, contract and solemnize marriage at the office of the superintendent registrar, and in his presence and in that of some registrar of the district, and of two witnesses, open doors, and between the hours aforesaid, may appear and use the forms and usages above (s. 21). After any marriage solemnized, it is not necessary, in support of such marriage, to give proof of the actual dwelling of either of the parties previous to the marriage within the district for the time required by the act, or of the contract entered into before whom the last marriage was solemnized; nor is evidence admissible to prove the contrary in any suit touching the validity of such marriage (s. 23). The registrar before whom any marriage is solemnized according to the provisions of this act may ask of the parties to be married, the several particulars required to be registered touching such marriage (s. 36). Every person knowingly and wilfully making any false declaration, or signing any false notice or certificate required by this act, for the purpose of procuring any marriage, and every person forbidding the publication of such certificate, by himself or by any other person, representing himself or herself to be a person whose consent to such marriage is required by law, knowing such representation to be false, is to suffer the penalties of perjury (s. 38). If any person knowingly and wilfully intermarries, to marry with any person, pretending to be a married person, or a clergyman, or a registrar or superintendent registrar, necessary, the marriage of such persons, except in certain excepted cases, mull and void (s. 42); as under 4 Geo IV. c. 75, § 22, a marriage would not be void unless both parties knowingly conspired and acted; and both parties were members within the definitions of the 42nd section. If any valid marriage be had under the provisions of this act by means of any wilful false notice, certificate, or declaration made by either party to such marriage, as to any matter, person, or thing, the attorney-general or solicitor-general may sue for a forfeiture of all estate and interest in any property accruing to the offended party by such marriage (s. 43). Consent to marriage may be given upon good cause shown, and that this cause be done merely because the parent or guardian has changed his mind. The question of consent is not however of such vital importance as under the first Marriage Act (26 Geo II. c. 33, s. 11), which made marriages without consent of parents, &c., absolutely null. Under 4 Geo IV. c. 76, § 23, and 6 & 7 Wm IV. c. 43, a false statement as to consent subjects the fraudulently party to the penalties of perjury, and to a forfeiture of any estate and interest in any property accruing to the complainant by such marriage.

These statutes do not extend to marriages contracted out of England, or to marriages of the royal family, which are regulated by a particular statute, 12 Geo III. c. 11.

Before 1835 marriages within the prohibited degrees of consanguinity or affinity were void by declaration of the ecclesiastical court, after which they became void ab initio, and the issue of such marriages were, by such sentence, rendered illegitimate; and the law is still, with respect to personal incapacity, as before. But it is now contended, that a case of undue influence could, professedly, only proceed pro eulate amasse, and to superior authority to annul an incestuous marriage was founded upon the duty of putting a stop to the incestuous intercourse, the power of annuling the marriage ceased upon the discovery of the facts. The marriage voided was not founded upon the age of the parties, the marriage, and the legitimacy of the issue, depended therefore upon the contingency of a suit being instituted as a sentence pronounced, during the joint lives of the husband and wife. But now, by 5 and 6 Wll IV. c. 34, a marriage contracted while there is a wife without a husband alive is ipso facto void, without any declaratory sentence.

Generally speaking, a marriage, valid according to the law of the country in which it was contracted, is valid in every other country. This rule is however subject to some exceptions, as where marriages, contracted according to the law of the country, (see above), in which their validity happens to be contested, are so contested in violation of some principle of national religion, or morality, or as where, in Persia or Turkey, a marriage contracted by the king or prince of women is considered as illegal. A constitution of the emperor Constantine the Great in 476 by the emperor Zeno (Cod. lib. 5. tit. 27, l. 5), made the husband of a concubine who had children by her, without having had any child ex justa nuptiis, to pass them to the daughter of the woman's father, unless the marriage was required by the father himself, or by those children the privilege of children born ex justa nuptiis, though actually born ex concubinitate. Dari Constantinorum fide Romanae, et imperii, super impertere concubinas deferatum.
broad on the occasion, appears to have been of the nature of a religious ceremony, and it existed in the time of Gaius. It appears that certain offices, such as that of Flamen Dialis, could be held only by those who were born of legitimate parents and married in the form of Confinatio. (Gaïus, i. 112; Tacit., Ann. iv. 16.)

The Coempiot was, in form, a sale (manepatro) before five witnesses. [Mancipium.] The Coempiot might be made either between a woman and her intended husband, provided that the case did not fall under any of those which case law or custom excluded, such as a daughter, or between a woman and a stranger (hudicum causa), which was a necessary legal process in case a woman wished to change one guardian for another, or to annul the marriage. This form of marriage, known as the manepatro, worked a legal change of status (Dig., iv., tit. 5, s. 1.), or dimnuto capitis; and it was the least of the kinds of dimnuto capitis, or by which a person underwent no change in his civil capacity, except the being transferred into amsenae (sponsae), or Parag., iv., tit. 5. This explanation will render intelligible the passage of Cicero on the testamentary power of women (Tusc., i., taken in connection with Gaïus (ii., s. 115, &c.). The essays of Hoffmann and Savigny in the Zeitschrift für Geschichtliche Rechtswissenschaft, vol. iii., p. 309, &c., may also be read with advantage.

A gift from husband to wife, or from wife to husband, was void (with some few exceptions). The transaction was the same as if nothing had been done. The Donatio mortis causa, or divorce, was a common form of death, or in consideration of divorce, was a valid gift.

There could be no dos (marriage portion), unless there was justum matrimonium. The term dos comprehended all that the wife brought to the husband on her own account, and what was willed or conveyed to her by any other person, in consideration and for the purposes of the marriage. (Dig., xxiii., tit. 3, s. 76.) When the dos came from the wife's father, it was called profecticia, but when it came from any other person, it was a general rule that the dos admontica remained with the husband, unless there was some agreement to the contrary, in which case it was called dos recepticia. What came into the husband's possession, not as dos, was included in the term inginia (spouses), or Parag., iv., tit. 5. and did become the property of the husband. All kinds of property could be the subject of dos. If they were things that could be estimated by number, weight, and measure (res fungibiles), the husband took them, subject to the liability, in case of a dissolution of the marriage, to the same number, weight, and measure. Things given as dos might be valued or not valued: in case they were valued, the complete ownership of them passed to the husband, inasmuch as the value was not created from the nature of a sale, of the marriage, it was, in later times the subject only to the liability of restoring their value, in case of a dissolution of the marriage. If the things were not valued, and any loss ensued, without the fault or culpable neglect of the husband, the loss fell on the wife. In the case of things not valued, of which the husband had the complete ownership during the marriage might be considered as in the husband, and as returning to the wife on the dissolution of the marriage. In such a case the husband could not be considered as his wife's tenant or lessee, but enjoyed the profits of it during the marriage, and could sell it. With some exceptions however he could not sell or dispose of the wife's immovable property which was included in the dos (dotal praedium). (Gaïus, ii., s. 63; Inst., ii., tit. 6.) The husband, in his capacity of husband and holder of marriage, and he had the profits of it during the marriage. In the case of divorce the portion, or a part of it, according to circumstances, was restored. In case the wife died during the subsistence of a marriage, part returned to her father, and part remained to the children of the marriage, if any. But it might, by the terms of the marriage contract, become the husband's, even if there were no children of the marriage. As to the portion of the wife, whatever might have been originally the rights of the husband over it by virtue of the marriage, it was in later times the subject only of express stipulations of the marriage settlement. The ques-
tions of law which arose on the subject of the dos were numerous and sometimes difficult.

In enumerating the modes by which a man may acquire property *per universitatem*, Gauls mention marriage, by which a Roman comes in *manuum*, and he observes that all things pass to the husband. The meaning of this passage is perhaps not quite certain; but it is partly explained by what has already been said.

(Dig. 25. tit. 3; De Jure Domiti; tit. 5; De Fundo domiti; Ulp. Digest. 25; De Deditis et Tranmitis; Thibaut, System des Fundeben-Rechts.)

**MARROW, or MEDULLA,** is the fat contained in the osseous tubes and cells of the bones. [Bone.] It consists of an oily fluid, contained in the capitate vessels, which are usually collected into bunches and enclosed in spaces surrounded by bony walls. It is most abundant in the cavities of the long bones, and in the spongy tissue of their articular extremities, and of the short rounded bones.

Spinal marrow and tundine epulis are names sometimes applied to the spinal chord. [Nerves.]

**MARRUBIUM VULGARE** (White Horehound), a biennial or perennial herbaceous plant, common by roadsides, the official part of which is the leaves; these are to be collected in late August and early September, when the plant is at its maximum growth. It has a grey woolly appearance, possessed of a faint odour, which becomes less by drying, and a bitter sharp taste. Ten pounds of leaves yield four pounds of extract. Their chief constituents are a bitter extractive, with a volatile oil, and phlobaphene. [Marrubium vulgare.]

White horehound, when young, is apt to be confounded with many other labiate plants, particularly the Ballota nigra, or black horehound, which possesses a disagreeable odour. The medicinal properties of horehound are innumerable: it is antispasmodic, slightly tonic, and astrigent. As a popular remedy, it enjoys great favour in many pulmonary complaints; but the preparations vended under the name of horehound often contain more efficient ingredients, to which the latter owe their success.

**MARS,** the planet which comes next to the earth, in order of distance from the sun, is a brilliant star of a slightly red tinge. On examination in a telescope, this colour is found to belong to parts of the surface of the planet which have been obscured by dry lands; the rest appears somewhat green, being supposed to be sea. Certain white spots, which appear at each pole after the winter of its hemisphere, and disappear during its summer, have been conjectured to be snow. The apparent diameter of Mars varies from 5'4" to 18'2", but 6' when the planet is at its mean distance from the earth. The real diameter is 5'17 of that of the earth, or about 4100 miles. Its bulk is '1386 of that of the earth, and its mass is '0000003927 of that of the sun, or about the 254600th part.

Mars has its axis in 24h 39m 21s, and the axis is inclined to the ecliptic 30° 16' 10". Its light and heat are 43 per cent. of those of the earth.

**Elements of the Orbit of Mars.**

Epoch 1799, December 31, 12th mean astronomical time at Seeburg.

Semi-major axis 1'236923, that of the earth being assumed as the unit.

Excentricity 0'033070; its secular increase (or increase in 100 years) 0'00090176.

Inclination of the orbit to the ecliptic 1° 51' 6"; its secular alteration invariable.

Longitudes from the mean equinox of the epoch (1.) of the Sun 26° 26' 26"; (2.) its secular increase (combined with the precession) 2507"; (3.) of the perihelion 33° 22' 51"; its secular increase (combined with the precession) 6582"; (3.) of the planet (mean) 232° 33' 23".

Mean sidereal motion in one mean solar day, 31° 26' 55"; in sidereal time 50° 50' 739; sidereal revolution 866 27166483 mean solar days.

Mars, or Mavors (called Modares in the Oscan language), the god of war among the Romans, generally considered as corresponding to the Greek Anti, or Ares. He was also called Marsper, or Marsper (Gell. v. 12), and was worshipped in peace under the name of Quirinus, and in war under that of Gradivus. There was a temple in Rome sacred to Quirinus, and another outside the city, in which he was supposed to be the name of the same god, worshipped on the same festival, near the gate Capena (Servius on Aen. i. 296). According to tradition, Romulus was the son of Mars, by Rea Silvia; and it was perhaps owing to his using the tutelary god of the Romans that the husbandmen were accustomed, according to Cato (De Re Rust., c. 141), to present their prayers to that deity in public. Mars was also represented by performing the sacrifice called *enomasticon*, which consisted of a pig, a sheep, and a bull. He is also called by Cato, Mars Silvanus (c. 83). According to a principle in Roman mythology, by which a male and a female deity are united to preserve order, the Son of Mars and the daughter of the Sun were united to create the gods of the Sabines, or the Sabines of Rome. They were united in the most sacred mysteries, to which only the Roman priests had access. Each, by a voluntary sacrifice of life or desire, the Romans had a goddess of war called Bellona.

A round shield (unguiculata), which was supposed to have been the shield of Mars, is said to have fallen from heaven, bearing the name of Quirinus, into the presence of the king of the Samnites, the priest of Mars. Eleven other shields were made like it, in order that it might not be stolen.

The first month (Martius) of the old Roman year, which consisted of ten months only, derived its name from this god.

Mars is generally represented with a beard, but in other respects like the Greek Ares, and is frequently placed in the same group with Rea Silvia. (Müller, Archäologie der Kunst, p. 492.) For the Greek god of war, see Ares.

Märten, his father, was the son of a family of the Sacy, built near the site of the ancient Lybysium, the part of which is filled up. There is however good anchorage, sheltered by a small island which lies off the coast, and which is mentioned in the history of the siege of Lybysium by the Romans.

The present town of Marsala, which was built by the Saracens, contains about 10,000 inhabitants, and belongs to the intendencia or province of Trapani. (Trapani.) The town is built on white winkle, which is prepared for exportation by an English merchant, and is established there, and is known by the name of Marsala. It is exported in great quantities to Malta, and also to England. There are very few remains of antiquity, except some traces of former aqueducts and tombs scattered about the country.

Marsan, a subdivision of Gascony, in France, now included in the department of Landes. Mont de Marsan was its capital. (France; Guérin et Gascony, Lond.)

**MARSDEN, WILLIAM,** a distinguished Oressian scholar, was born in Dublin, on the 16th of November, 1754. He was a Derbyshire family which had settled in Ireland at the end of the reign of Queen Anne. John Marsden, his father, was the son of one of the English settlers, and was established in Dublin as a merchant on a large scale. The subject of this article was his tenth child. After going through the usual course of classical education in the schools of Dublin, he was about to be entered at the University of Oxford, with a view to the study of law, which led him to take a very different course. His eldest brother had before proceeded to Bencoolen as a civil servant of the East India Company; and sending home a very favourable account of his prospects, the father was induced to apply for a similar appointment in the same quarter, which proved successful. He was accordingly removed from school, and in the beginning of the year 1771, when he was but 16 years of age, he embarked for India, and arrived at Bencoolen in May of the same year. Here his ardent desire for acquirement, and a high intelligence, led him to such distinction as a small establishment and community afforded. He became first sub-secretary, and soon after principal secretary to the government. The duties of an orator, who was not very laborious, and allowed ample leisure for study and reflection. The vernacular language of the country, the Malay, and at the same time laid in that stock of local knowledge which being imbued afterwards in his publications, was the foundation of his professional name as a writer.

Mr. Marsden's whole stay in Sumatra did not exceed eight years, but how well and diligently he employed this brief period can only be sufficiently appreciated by those who, like the writer of this article, have been engaged in the same pursuits. But he felt that his powers were wasted in the narrow field in which he was enabled to determine upon an experiment, usual in such a case as his, that of returning to England to push his fortune. He felt that, at all events, literary leisure, independence, and a congenial climate would be assured to him by this step.

Having this view in mind, he quitted Sumatra at the
summer of 1779, and in the last days of the same year arrived in England, with good health, but with a very trifling income of a few hundred pounds a year. His first attempt was to procure a small post under the government; but failing in this, he resolved on a literary retirement, and on supplying the want of wealth by a prudent economy; and if he afterwards abandoned this course, his departure from it cannot be said to have been of his own seeking. Shortly after his return to England he became a student of science, and at his philosophical meetings and acquired the friendship of some of the most eminent men of the day, Solander, Masaryn, Dalrymple, Rennell, and Herschel. He soon became intimate with the Royal Society, at whose meetings he contributed every learned or scientific society of eminence in the kingdom. His literary reputation was insured by the publication, in 1782, of the well-known 'History of Sumatra.' This work, which has come to a third edition, and has been translated into the languages of all the principal European nations, and one into the Sanskrit, it has become known to the public for the long period of 56 years. It has the peculiar impress of Mr. Marsden's mind, strong sense, truthfulness, and caution. In so far as our language at least is concerned, it may be considered as the first book of its kind, and the public advantage. A period of personal knowledge of local details, combines philosophy, science, and a liberal acquaintance with letters. For 14 years after his return to England Mr. Marsden's time was devoted wholly to literature and science; and in this manner his life was apparently expended. Mr. Marsden cultivated the love of books, the love of study, and the love of peace. In 1795 he was selected by Earl Spencer, on the recommendation of his intimate friend, the celebrated geographer, Major Rennell, he accepted the situation of second secretary; and in due course of time the secretaries of the Admiralty joined. In 1795, Mr. Marsden, under the recommendation of the 'History of Sumatra' became chief secretary to the British Board of Admiralty, with the war salary of 4000l. per annum. In this matter however it is evident that Mr. Marsden rather yielded to the advice of his friends than of his own judgement. The time could be better filled, by diligence, official training, integrity, and general intelligence, to discharge the various functions which he was called upon to perform, and he did so discharge them for a period of 12 years, greatly to his own honour and the public advantage. This period comprehended the most eventful and glorious in the history of the British navy, for it embraced the victories of Cape St. Vincent, Camperdown, the Nile, and Trafalgar. In 1807 Mr. Marsden, whose health began to suffer severely by the exposure of his situation, gave up the office, tendered his resignation of the secretaryship to the Admiralty, and retired on a pension of 1500l. per annum. The first solid fruits of Mr. Marsden's leisure were the publication, in 1812, of his Grammar and Dictionary of the Malay language, which was accepted by the government, and added, the most likely to endure of his literary labours. A portion of the materials which he had collected brought with him from Sumatra, and we find him engaged in the compilation of the dictionary as far back as 1786. The eventual publication of these works however did not take place until 33 years after he had quitted Sumatra, and, consequently, after he had ceased to receive any assistance from native instructors. When we consider therefore the accuracy and extent of the work, it is no wonder that so little was made, under the auspices of the Netherlands government, both into the French and Dutch languages. In 1817 he published his 'Translation of the Celebrated Travels of Marco Polo.' The translation has been made with Mr. Marsden's accustomed accuracy, and is accompanied with a commentary far more valuable than the translation itself. In 1823 he published the first part, and in 1825 the second, of his 'Numismata Orientalia, or Description of Eastern Coins,' a valuable collection of which had fallen into his hands by purchase. This is a work of great care and learning, in which, as well as in some respects in the compilation of the Malayan Dictionary, he had the invaluable assistance of his learned relative Sir Charles Wilkins. In 1832, in his seventy-eighth year, Mr. Marsden published his last work, comprising three Essays, the longest, most elaborate, and important of which is on the Polynesian or East Indian languages, a subject which had long engaged his attention and was a great favourite with him. He was the first that pointed out the existence of a considerable body of Polynesian words well cultivated by the Polynesians, and also the singular connexion which existed between these languages, extending from Madagascar to Easter Island. In 1831 Mr. Marsden voluntarily relinquished his pension to the public, an act of liberality and generosity which, in an example of how it had been done before since. It met, as it well deserved, the warmest applause of the House of Commons. In 1834, feeling, as he himself says, the increasing infirmities of age, he determined in his life-time to bestow his rich collection of coins and medals and his extensive library on the public. No such munificence on the part of a man of letters had been shown as Mr. Marsden. The subscriptions in such a manner as would make them most serviceable to the public. The coins and medals he gave to the British Museum, and his library to the newly-founded King's College. In 1835 he had a slight apoplectic attack, from which he never completely recovered, and in 1837 he fell on his back, and died. He was professionally eunuched his body, leaving him however in the entire possession of his memory. The final and fatal attack did not take place until the 6th of October, 1836, when, at seven o'clock in the morning, after passing a tranquil night, he received a severe blow on the chest. He died on the latter part of a happy, prosperous, and well-spent life. Agreeably to his own directions, he was interred in the cemetery at Kensal Green. In 1807, shortly after quitting the Admiralty, Mr. Marsden married the eldest daughter of his intimate friend the Rev. Charles William, no withstanding the great disparity in the ages of the parties, the connexion, which lasted near thirty years, was one of much satisfaction and happiness, the result, on both sides, of a happy, prosperous, and well-spent life. His widow is the judicious and accomplished editor of the 'Autobiographical Memoir' from which we have extracted this brief account, and which has been printed for private circulation only, and not published.

MARSEILLE, capital of France, capital of an arrondissement in the department of Bouches du Rhône. It is on the coast of the Mediterranean, 408 to 410 miles in a direct line south-south-east of Paris, or 497 miles by the road through Auxerre, Châlons-sur-Saône, Lyon, Valence, Avignon, and Aix, in 15h 55m. lat. and 52° 35' long. Marseille was founded by the inhabitants of Phocaea (Φοικα), a Greek town which was a member of the Ionian confederation. [IONIA.] The Phocæans founded several colonies in the western part of the Mediterranean, of which Phocaea, or Phocæa, as the Phocæans called it (Φοικαια, Φοκαια) according to the usual Greek orthography, was perhaps the earliest, as it certainly was the most important. Two colonies of Phocæans successively established themselves in the place, the first about B.C. 680, while Phocæa sailed to Albania in Corcyra, which was a Cretan colony, and called by Aristotle (Ἡ Πασεληκτος Παλιντα, quoted in Athenaeus Deipnosophistae, lib. x.), Phocæus (Ἕφοκεας), having found favour in the eyes of Dardis (Πιττα), daughter of Nannos (Ναννος) king of the Illyrians, a tribe probably of Ligurians (Justin, Hist. c. xliii.), received her in marriage, and also permission to found a city. The circumstances are related, with some variation, by Justin.

The new colony was early involved in hostilities with the native tribes, but under the able government of the Cretan Cottus, the Phocæans obtained several victories, and established new settlements along the coasts, in order to retain them in subject. The surrounding barbarians acquired from the new settlers some of the arts of civilized life; they learned to understand the Greek language; and under the influence of the Masculians had also to contend with the power of the Carthaginians (the commercial rivals of the Greeks in western Europe), whom they defeated in a sea-fight of early but uncertain date. (Thucyd. lib. i. c. 13.)

The second colonization of Marseilles took place about B.C. 544, on occasion of the Phocæans quitting their native city to avoid the subjection with which they were threatened by the Persians. Herodotus does not notice the fact of any of these Phocæans settling at Marseilles: he says that they sailed to Albania, in Corcyra, which was a Cretan colony, and commenced piracy. The Tyrreni and Carthaginians
uniting against them, a great sea-fight took place, in which the pirates obtained a dear-bought victory. After this battle they left Corisco for Rhegium. (Herod., i. 165–167.)

The Massilian constitution was aristocratic; their laws and their religious rites were similar to those of the Ionians of Asia. The worship of the Ephesian Artemis, or Diana, was cherished with peculiar reverence, both in Massilia itself and in its colonies. The governing body was a senate (eques turiae), called the cribera, to which the senators were appointed for life. This senate had fifteen presidents (presidentes), who formed a sort of committee, by which the ordinary business of the government was managed. Of this committee three persons possessed the chief power, the pontifex, the tribunus, and the aedilus. They were chosen among those who had children, and in whose families the right of citizenship had been possessed by three generations. (Strabo, lib. iv.)

The Massilians, like the Phocaeans, were a naval people; they had several colonies on the coast of Gaul, Spain, and Italy: as Emporium (Emporion), now Anipurias, in Spain; Rhône Agatis (Pôli âgéathô), now Agde; Tauroctis (Tauréctôs), or Tauroctum (Tauréctum), now Tarento, near La Ciotat; Antipolis (Antipôlios), now Antibes; Olimna (Olimôna), perhaps the port and castle of Olimne between Hieres and St. Tropex; and Nicena (Nicôna), now Nice. They early and steadily cultivated an alliance with the Romans, which alliance was gradually converted into subjection. In the civil war of Pompon and Caius Marius, the city was the seat of the party of the latter. L. Domitius, one of his most zealous partisans, within their walls, and appointing him governor of the city, they closed their gates against Caesar, under pretence of preserving neutrality (n.c. 49). Caesar, landing into Spain against Afranius and Postumus, the two Roman rulers of the province, marched forward to the Iberian sea, crossed it, and reduced the city of Cordova with marvellous celerity, left his lieutenant C. Trebonius with three legions to carry on the siege, and appointed D. Brutus to command his fleet. In the first naval encounter the townsmen were defeated, with the loss of twenty-three ships; in the second the peace was renewed, and they were allowed to retain their machines; and the townsmen being encouraged by the arrival of L. Nasidienus, who was sent by Pompey to their aid, with a squadron of seventeen ships, they refitted their fleet, and put to sea to join him; but the confederate fleet beat them to the windward. Rome had declared the city a free state, and on Caesar's return from his victory over the Pompeians in Spain, they surrendered to him. Caesar did not reduce them into entire subjection, but left two legions in garrison which he marched forward to Italy into Italy. (Cicero, De Bell. Cis., lib. i. 34–36, 56, 57; i. 16–16, 22.)

The municipal government of Massilia remained unaltered, but its political independence was virtually overthrown. The attention of the Massilians was now more directed to literature and philosophy, of which indeed they were already diligent cultivators. They had spread through the south of Gaul the knowledge of the Greek written character, which Caesar found in use among the Helveti (De Bell. Gall., lib. i. c. 29); and now their city became the west of Europe what Alexandria was to the east. The modern charges and frugal habits of the citizens added to the advantages of the place as a place of study, and the most illustrious of the Roman youth resorted thither. Cicero has recorded in the strongest language the praises of the Massilians. He says, "P. Fronto, the pupil of Cicero, was given high encomium upon them into the mouth of a Rhodian ambassador (lib. xxxvii, 54); and Tacitus (Agricola, c. 4) has spoken in the same strain. (Agricola.)"

For more than three centuries the history of Massilia presents but few events. In the year 168 the city submitted to the abdication of Diocletian and Maximian, the latter (A.D. 310) attempted to resume the purple at Arles, to the pre judece of the emperor Constancine, his son-in-law; but being baffled in his attempt, fled to Massilia, which he vainly attempted to hold for the emperor. In 312 he was chosen by a council of the provincials, or was taken by Constantine, and Maximian became his own executioner. In the reign of Honorius, Massilia rebelled the attempt of the Visigothic king Ataulphus, to take possession (Phocis, Biblioth.; but it afterwards became the prey of

Burgundians, Visigoths, and Franks. It was taken by the Franks by Theodore the Ostrogothic king of Italy. Toward the middle of the sixth century Marseille was invaded by the Franks from the rest of Provence by Vitiges the Ostrogoth to the Franks, in order to secure their alliance against the Eastern emperor Justinian, who had sent Belisarius to conquer Italy. While under the Frankish aedile the town suffered from the Lombards, who sacked it in 574. After the Siceni, who seized it, but were very likely driven by the Franks, about the middle of the eighth century. In the division of the empire of Charlemagne among his descendants (a.d. 836), Marseille was included in the kingdom of Provence, under Charles the Bald, who received the province of Lothaire; and afterwards it made part of the kingdom of Provence, or Bourgogne Cis-jurane, under Boson (a.d. 857). The union of this kingdom with that of Bourgogne Trans jurane under Rodolph II. (a.d. 930), and the subsequent accession of Countess of Provence, daughter of Countess de Salis (a. d. 1032), brought Marseille into the constitution of a remote dependency of the German empire. During these changes, from the tenth century Marseille was under the immediate dominion of its own vicomtesse. The Massilians appear to have been actively engaged in the Crusades; and in the third Crusade, several armaments sailed from their port. The commerce of the town at this time was great, and the townsmen were in league with some of the great trading cities of Italy for the purposes of trade and navigation. They were also well provided with ships, and therefore they freed themselves from feudal subjection to their vicomtes and to the counts of Provence, and organized themselves into a municipal republic, under a chief magistrate called the podestat; but in a few years they were deprived of it, and in the twelfth century, when the archevesque of Provence, brother of Louis IX. It was from Marseille that Charles set sail for the conquest of Naples. The troubles which agitated Provence during the reigns of his successors materially diminished the population of Marseille; and as the war of the Albigenses (a.d. 1209) went on, the country was even in name, the country was exposed to the inroads of the Bragians, who had risen up during the wars of the English in France and the desolation of that kingdom. In the contest for the sovereignty of Naples and Provence, between the houses of Anjou and those of Durazzo, and subsequently of Aragon, the Masselinois faithfully adhered to the house of Anjou, and rendered signal services to them; but in the year 1451 the town was taken by the king of Aragon, a considerable part of it sacked and burned. It was in that year that Orleans was taken by the English, and moreover plundered by marauders from the surrounding counties. The town recovered however from this severe blow, and became the ordinary residence of Réné, duke of Anjou and Provence, and the residence, a.d. 1459, of the death of Charles, count of Maine, successor of Réné, masses of Provence directly under the government of the French crown, to which it has ever since remained subject. In the war of the emperor Charles V. with Francis I. of France, the Masselinois, under the command of the Bourbon [BEAUYE, CHARLES DE], headed an army of Imperialists under Marseille (a.d. 1524), but was bravely repulsed by the townsmen. In the year 1536 the town was again unsuccessfully attacked by the Imperialists under Charles V. in person and the Duke of Albe. In the latter part of the sixteenth century a plot was formed (a.d. 1555) to betray Marseille into the power of the League, but it failed. Subsequently however the partisans of the League gained a complete ascendency in the city, which became the prey of intrigue and assassination. At the time of the revolution, Provence, for Henri IV., was admitted (a.d. 1596) by the partisans of that monarch. In the reign of Louis XIV. the municipal privileges of the city were diminished, and far were built, as much probably to control the townsmen as to prevent them from being supported by the corn of the interior. The inhabitants were swept away by pestilence. Bezeau, bishop of Marseille, the echevins or municipal officers of the town, and three physicians of Montpellier, distinguished themselves by their courageous performance of their duties. In 1793 the townsmen met with a conspicuous part. A band of political fanatics went to Paris, and were among the leaders in the attack on the Tuileries, in August, 1792. The townsmen attempted, but in vain, to support by an insurrection the Government against the party of the Mountain.
The city of Marseille is built on the coast of the Mediterranean, where runs north and south. The harbour is formed by a small inlet of the sea, running eastward into the very heart of the city, which is built round it. Its immediate site is a rich valley or hollow enclosed on the land side by hills, of which the highest is that of Notre Dame de la Garde, on the south, and surrounded by a fort. From the summit of the hill of Visto, on the north side of the town, over which the road from Paris leads, three miles distant, a fine view is obtained of the town and of the numerous vessels which may be seen in the one street of less width, quite through the town. To the east of this street is the old town, occupying a triangular point north of the harbour. The other parts constitute the new town, which consists of broad straight streets, provided with paved foot-paths and lined with houses. The stress, over an area of more than a mile long and a quarter of a mile broad, and capable of containing 1500 vessels, is surrounded by fine quays used as a promenade by the townsmen in the winter. There are several other promenades: the Bord de la Mer, the Boulevard des Italiens, the Promenade du Père Lachaise, and the Esplanade, on the shore in the old town. The places or squares are more numerous in the old town than in the new, but neither so large, so regular, nor so ornamental. The town-hall built by the architect Puget, faces the harbour, and its immediate vicinity is a model of urban architecture. The council-chamber has some fine paintings. There is a new market-house supported by thirty-two columns of the Tuscan order, a fish-market, and other markets; a theatre on the north side of the town, one of the finest theatres in Europe. The chief of them is the one of the finest in France; a triumphal arch, a column, and several public fountains. Water is brought from the little rivers Huveaune and Jarret by an aqueduct a mile in length. The climate is delightful, and many houses have wells, the water of which is drinkable.

The population of Marseilles in 1789 was 76,222; in 1801, 111,130; in 1811, 102,977; in 1821, 109,483; in 1831, 121,272 for the town, or 145,115 for the whole commune; and in 1836, 149,290 for the commune. It is the third city in France for population, being exceeded only by Paris and Lyon. The city has always depended for its prosperity on commerce. The harbour is very safe. Opposite the mouth of it, which is narrow, not permitting the entry of more than one ship at a time, is an island, named the Ile de la Cité (a castle, once used as a state prison, and numerous batteries), Rattonneau, and Pomègues, which are both fortified. The entrance to the port is defended by two forts: that of St. Jean on the north, and that of St. Nicholas on the north-east. A fort S. Louis converted by fire is not much into a citadel, has been in great part demolished by the townsmen.

The port is not deep, and is liable to be filled by the mud brought down by the rain from the neighbouring hills: machines are constantly at work to keep it open. Frigates cannot enter without difficulty; ships of the line cannot enter at all, but are obliged to anchor in the road between the islands of Rattonneau and Pomègues, where also vessels perform quarantine. This anchorage is common; the number of vessels which enter the port is estimated at 5000 or 6000 in the year; and the customs and other dues collected are estimated at nearly 1,000,000 annually. The French trade with the Levant is entirely carried on from this port; and there is a cotton trade with India, Portugal, Spain, and Barbary. The imports are of raw cotton, sugar, dye-woods, and of divers articles from the Levant. The exports are of wines, brandy, corn, dried fruits, oil, soap, hosiery, damask and other linens, woollens, silks, leather, hides, and colonial produce, tea, coffee, tobacco, sugar, fruit, wax, tallow, porcelain, and other utensils, furniture, &c. The refining of sugar and salt, calico-printing, the distillation of rice, corks, cork-outer-bark, &c., and the preparation of anchovies and other salt provisions, dried fruits, olives, and wine for exportation, are carried on. The city is from its commercial character the resort of foreigners of all nations; and the variety of costume, continental buxie, and medley of languages which in this occasion are among the most striking features of the place. The character of the people is by no means favourably drawn by our authorities.

Marseilles has communications by daily public conveyances with Lyons, Aix, Avignon, Nimes, Toulon, Geneva, and other places; and by steam-boats at brief intervals with Marseilles, Genoa, Loghorn, Bari, Cosenza, Vecchia, and Naples; and at longer intervals with Port Vendre, Barcelona, and Valencia. It abounds with hotels and has some public baths and handsome cafes. The mistral, a keen, parching, and oftentimes furious wind, brightens verdure, and its blasts are interchanged with the scourging rays of an clouded sun; swarms of gnats infest every corner night and day, and the scorpion is often found in the houses and occasionally even in the beds.

Marseilles has a customs-house, a stamp-office, an exchange, and a board of trade; a commercial court, a subordinate justice court, and a tribunal for the regulation of the fisheries and the settlement of disputes respecting them, the members of which, called Prud'hommes, are annually chosen by the fishermen from amongst themselves; and several other government or other public offices. There is also an arsenal.

The parish and other Catholic churches and chapels are twenty in number; there are a Protestant church and a Jew's synagogue; with several hospitals and other institutions. There in 1793 was an academy of science, belles-lettres, and art; an agricultural and a medical society; a high-school, schools of medicine, drawing, music, and navigation; a deaf and dumb school; a public library of 60,000 volumes, a picture gallery, a museum, two botanic gardens, a co-operative store, and a botanical society, cultivated at present: astronomy and navigation are the studies chiefly pursued. Marseilles has produced several learned and eminent men. The navigator Pytheas and the poet Petronius Arbiter, in ancient times, and the architect Puget, in modern times are the chief.

Few antiquities have been discovered at Marseilles, and there are no remains of ancient buildings; some statues, urns, and medallies have been dug up. The diocese comprehends the town and its arrangements. The bishop is a suffragan of the archbishop of Aix. The town is the head-quarters of the 8th military division, which includes the departments of Basses Alpes, Vaucluse, and Bouches du Rhône. The arrangements comprehends nine cantons, or districts, each under a justice of the peace, and sixteen communes. The population was 176,866 in 1831, and 180,127 in 1838.

MARSHAL, a term which, in its origin, meant simply a groom or manager of horses; but from the importance of such an employment in a rude warlike nation, the office of marshal became invested with great military authority, which, according to the usage of the times, drew to itself a considerable civil jurisdiction. One of the principal officers of state is the king's marshal, which office is held hereditary by the duke of Norfolk, who is said to have the office of marshal of England, and also an honour in respect of which he is earl marshal. This office was executed in time of war in the king's host or army; in time of peace, in the aula regia, or king's great court. Upon the dissolution of the aula regia, the marshal appointed deputies in the new courts. In the King's Bench, the marshal's deputy was called the marshal of the marshalsea of the king's court, or marshal of the King's Bench. In the Exchequer, the marshal of the Exchequer was marshal of the office of marshalsea of the Exchequer. The duty of the acting marshal is regularly to attend the court, and to take into his custody all persons committed to his custody by the court.

The lord high constable, when there was one, and the earl marshal, were the judges before whom the court of chivalry or court martial was held. This court had cognizance of contracts touching deeds of arms and of war arising out of the realm, and of all appeals [Appeals] of offences committed out of the realm, and of matters within
the realm relating to war, in cases where the courts of
common law were incompetent to decide. Its proceeds
were according to the course of the Roman or civil law.
The earl marshal cannot hold this court alone, and there
has been no hereditary or permanent high constable since
the forfeiture of the duke of Buckingham, 'poor Edward
Bohn,' in the time of Henry VIII. In the few cases in
which the court of chivalry has been since held, a high
constable has been appointed for the occasion. In the case
of an appeal from death of 1583 against Sir Francis De
chamber of the Downham estate, struck off in parts beyond sea, Queen Elizabeth refused to appoint a high constable; and thus, says Lord Coke, the appeal slept. The minor duties of the earl marshal are set out with great minuteness of details in a document preserved in Spain's 'Glosas del Rey's.

Besides the earl marshal, there is a knight marshal, or
marshal of the king's household. The office of earl marshal,
and that of marshal of the King's Bench, as well as that of
the knight marshal, is called marshalship; but the term is
ordinarily applied to the last only.

MARSHALSEA. In the Marshalsea of the king's
household there are two courts of record. 1. The original
court of the marshalsea is a court of record, to hear and de-
termine suits between the king's household and others
within the court, and within the verge, that is, within a circle
of twelve miles round the king's palace, with a jurisdiction
of tens of trespass where either party is one of the king's serv-
ants. 2. The palace court was erected by letters patent, 6
Chas. 1. C. 18, in which charter the royal charter for the
try all personal actions between party and party, though
neither of them be of the king's household, provided they
arise within twelve miles round Whitehall. The judges of
this court are, the steward of the king's household and
king's household, and the chancellor of the exchequer. The
court is held by the constable which is the court of al-ri-
ster, and is kept by the knight-marshal. The palace court
is held only once a year, and causes are here
brought to trial in four or five court-days, unless they are of
such importance that the court is then extended. The court is
immaterial to the other parties. The place is removed to ito
the superior courts. A writ of error lies from both courts into the court of king's bench.

MARSHAM, SIR JOHN, born 1602, died 1685. The
noble family of Marsham have the honour of tracing them-
se back to the days of the Conquest. Among the members of this family it was, that he was one of the most eminent scholars of his age, as the founder of the
hereditary honours. He was one of six sons and four daughters of an alderman of London, and was born in the parish of St. Bartholomew. He had his education in Westminster school, and was sent to Sieges, Oxford, where he travelled much abroad in France, Italy, and Germany, both as a private gentleman and in the suite of Sir Thomas Edmondus the ambassador. When he returned home he betook himself to the study of the law, but it does not appear that he attained much eminence in that study, nor is there anything known of his profession in Chancery, and even this office he left when the conten-
tions arose between the king and the parliament. Nor was
this all; for, following the king to Oxford, and remaining attached to the royal cause, he suffered greatly in his es-
tate. On the change of the times he was returned to par-
liament for the city of Rochester, was restored to his six
clerk's office, was knighted, and soon after was created a
baronet. He died at Bush Hall near Watford.

Such is the outline of his life. The predominance of a polit-
ical power to whom he was obnoxious, in the period of
his life when his mind was at maturity, gave him leisure to
pursue those studies for which he had acquired a taste in the
erlier period of his life. The subject on which his mind was most interested was the great law and
the Egyptian, Etruscan, Graecus, being an enlargement of
work on the same subject published in 1649, entitled by
him 'Distributio Chronologiae.' Sir John Marsham has treated the subject in a manner of the toleration of
notion on nothing but the discovery of truth, if truth be attainable. His work
was published at Leipzig in 1676, and at Franeker in 1690,
with a preface by the editor Menczences, in which some of his
conclusions are questioned. It is probable that the error in Egypt may affect in some points the
amendment of this learned work.
mouths of the greater part of the rivers of India are marshy, and large swamps are sometimes found along their course, in the case with the Padma. In the northern provinces there are many savannahs, or wet meadows. There are swamps along the Euphrates, and those of Mesopotamia are bitter, sulphurous, and salt. In Persia the province of Gilan, in other respects fertile and beautiful, is very swampy, the land is watered with rivers which have caused it to receive the name of 'the pestiferous coast'; the reeds are gigantic bamboo, and a continual fog hangs over the aquatic soil. Batavia, Sammarang, and other places in Java are reputed to be so uninhabitable, in consequence of the swampy, and pestilential marshes, that the island has been named the grave of Europeans. The Philippine Islands have a great many peat bogs. New Holland has much marshy ground along the coast, and immense swamps have been seen inland.

As for Africa, its interior is too little known to enable us to speak with any certainty of its marshes; but the southern part, according to Barrow, has many and extensive marshes. All the rivers on the east are marshy at their embouchures, which is also the case with the Quorra. Madagascar contains marshes, in which the singular Ranveliala (urarana speciosa), a kind of palm, grows, remarkable for the size and disposition of its leaves, and for the plant which is similar to the banana, and are employed by the natives as table-cloths, napkins, plates, dishes, and spoons.

America contains immense marshes. In the frigid zone of the New World, as far as known, bog-enveloped marshes extend with the northward. In Russia America, the land lying between the coast and the mountains is a slip of black swampy soil; some of the marshy grounds are on the slopes of the mountains, and retain the water like a sponge; their verdure (being covered with moss of various hues), is as the most elegant tapestry, and as the most brilliant feather-work of the Hand, is the outcome of the efforts of Nature to evade the approaching inundation. In the marshes of the south, the trees are usually of a small size; the land appears to have been once more elevated, and the greater part of the region, the nature of the soil, and the climate, have rendered it incapable of cultivation.

For the south of America, we have very little information. The marshes of the Plata are extensive, and are also found in the province of La Plata. The marshes of the Plata are of great extent, and are found in the province of La Plata. The marshes of the Plata are of great extent, and are found in the province of La Plata. The marshes of the Plata are of great extent, and are found in the province of La Plata. The marshes of the Plata are of great extent, and are found in the province of La Plata. The marshes of the Plata are of great extent, and are found in the province of La Plata. The marshes of the Plata are of great extent, and are found in the province of La Plata.
the deposit from the water of the river, and in part by the sands of the sea. Farther north again the whole coast of French Guyana is a swamp.

This enumeration of the known marshes and swamps, and the allusion to others, is more in the nature of a sketch than a definite list. Very large portions of the earth's surface remain still unexplored, and physical geography is thus in a very primitive stage of development. Nevertheless it is certain that the extent of marshy ground is very great; and probably it has been much greater, for a multitude of natural circumstances have greatly diminished them, and are still effacing them by degrees. On the other hand colonization, and the consequent increase of population in the newly settled places, causes new clearings, and the formation of marshes to go on rapidly. There is no doubt but that in proportion as the swamps are dried up the source of many diseases will be got rid of; but again, it may be doubtful whether the increased drought occasioned by so vast a clearance will not bring other diseases equal in danger to those now springing from the superabundance of swampy ground; and it is possible that even abundant sterility may result, in some cases, from impromptu drainage.

MARSIGLIA, Luigi Ferdinando, Count, born at Bologna, a noble family, in 1658, studied mathematics under Borelli, and natural history under Malpighi and other able professors. At the age of twenty he went to Constantinople, which he returned, and was then employed by the Sultan Bosforo Tracio (Rome, 1681), which he dedicated to Charles of Sweden; and he also wrote a memoir on the rise and decline of the Ottoman empire, which was not published until after his death. He afterwards served in Hungary, and was stationed against the Turks, was raised to the rank of captain, and was wounded and taken prisoner at the battle of Raab, in 1683. He was sold as a slave, and, after suffering considerable hardships, was ransomed by his father. Later, he was employed by the Venetians, and became a member of the Venetian Senate, and was sent on a diplomatic mission to the court of the Emperor Joseph I. As an engineer, he settled the boundary-line of the Austrian dominions on the side of Turkey, and was a prominent figure in the negotiations between the two powers. When the war of the Spanish succession broke out, Marsiglia, who was already a general, was again employed, and found himself in command of the garrison of Briach, of which town the Count d'Arco was political governor. Briach surrendered to the French thirteen days after they had opened the trenches. The sultan of Vienna, highly disappointed at the surrender, pardoned Marsiglia with the express condition of being cashiered. He tried every means to have the sentence revoked, but in vain. He wrote and published a memoir in his defence, which is said to have appeared exactly as he intended it, and among other things advocated the use of gunpowder, which was then employed at that time by the Turks. He also published a work on the geography of Hungary, which was much esteemed by the learned, and was translated into several languages. He was appointed to the command of the garrison of Briach, and was there employed until the end of the war. He then returned to Italy, and was appointed to the command of the garrison of Trieste, which was occupied by the Austrians. He was appointed to the command of the garrison of Trieste, which was occupied by the Austrians. He was appointed to the command of the garrison of Trieste, which was occupied by the Austrians.

MARSIPALIA, MARSUPIA (Marsupium, a purse or bag), an extensive group of Mammalia, differing essentially from all the others in their organisation, and comprehending genera found by every variety of arrangement. Their structure is, as a necessary consequence, modified accordingly; and we find among them adaptations of the organs of progression, prehension, and digestion to their several wants and habits, so that we may trace in them analogies to the carnivorous, insectivorous, herbivorous, and omnivorous habits of the mammiferous quadripeds.

The first species belonging to this order is the opossum, or Opossum, which is the type of the genus Mammalia, and is found in almost every part of the world. It is a small, agile animal, with a long, prehensile tail, which is used as a support in climbing trees. It is a omnivorous, feeding on fruits, insects, and small animals. It is found in the New World, and is the type of the order Mammalia.

Marsupium, who appears only to have known the American species, or Opossum, arranges them under the generic appellation of Didelphidae,* in his order Didelphis, placing them between the Bears, Badgers, and Raccoons, &c. (Fissip. and the Moles (Talpa).

D. Custom makes the Marsupia the sixth family of the second order, Pollicata; and his third order, Sauris, consists of the Kangaroos and Porcrids.

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Mr. Gray collects all the forms under the family Didelphides. The subfamilies into which the group is separated by him will be found in the article Mammalogy, where the views of zoologists in general, as to the classification of these animals, are discussed.

Storr congregates all mammalia with opposable thumbs into one great group, which he divides into three sections the first consisting of the genus Homo; the second of the genera Sima, Prosimia, Proboec, Tarsius, and Lemur; and the third of the Marsupia and Monotremata. Mr. Ogilby separates his Chiroptera (Mammalia v. opposable thumbs) into three groups, Branca, Quadrumana, and Pedimana, which last are characterised as herbivorous.
The marsupias differ considerably from each other in the osseous part of their structure, as might be expected in a group whose food and habits vary so much. Our limits do not permit of a detailed inquiry into these differences; but the examples given in the skeletons, skulls, and teeth, of the marsupials and of the mammalia generally, with the same general law, we have found, that the first peculiarity common to all, which is found in the true monotremes, and presents a marked discrepancy from the condition of the vaginal from the urethral and vesical canal, as it has been termed by later physiologists, though he designated it the common passage or canalis; nor was his conjecture as to the parts of the complicated uterine apparatus wherein gestation is carried on other than true. John Hunter, Sir Everard Home, M. Geoffroy St. Hilaire, M. de Blainville, and Mr. Morgan have all thrown more or less light upon this obscure subject; and the paper of Mr. Morgan, in the Transactions of the Linnean Society, vol. xi., is especially worthy of attention, as far as it goes. But it was reserved for forty-eight years to be elucidated by the researches of Professor Owen, in his paper 'On the Generation of the Marsupial Animals, with a Description of the Impregnated Uterus of the Kangaroo' (Phil. Trans., 1854), which shows that in all the genera of this group the uterus is double, and the true vagina is the true trace of the urethra and bladder, and is continuous with the urethra, and is thus placed anterior to the penis; and it is a remarkable fact that the muscle which surrounds the mammae gland in the one sex is analogous to the suspensory cremaster of the testes in the other. Both sexes in the marsupial animals manifest the power of retracted testes in possessing two superior venous cava, and in the want of the inferior mesenteric artery; and the uterine bones, so common in the skeletons of reptiles, are limited in the mammiferous class to this division, in which, alone, from the peculiarly brief period of uterine gestation and the consequent non-enlargement of the abdomen, their presence might be expected. But these bones serve important purposes in relation to the generative economy of the marsupial. In the female they assist in producing a compression of the mammary glands necessary for the birth of the young; and the male, in the preparation of spermatozoa, for the fertilization of the eggs. A short description of the oviparous class of mammals, noticed to be attached to the defendant, and which serve both for respiration and nutrition at the earliest stages, yet that at a late period; and as the embryo acquired additional bulk and strength and parts, an accessory apparatus for that end appeared to be necessary. In all the families of the mammalia the form and position of the foetus is not performed by the extension of the mammalian flaqueuths of the Kangaroo, Phalangista, and Petraslius exhibited the remains of a urachus and umbilical vessels, whence Professor Owen concluded that at a more advanced stage of development. As the female approach the Ovisparus Vertebrata in their separate genital tubes, so also the males resemble them in the peculiar structure and connexions of the intromittent organ; and he points out that in the Macropus, the Daungus, and the Phalangerista the corpora cavernosa penis have the same position below the pubis, with the same want of ligamentous attachment to the bony pelvis; and the glans has the same bifurcated form and double groove for the transmission of the semen as in the Opossum, in which these peculiarities in the male organs were first described by Cooper (Phil. Trans., 1794). In those genera," continues Mr. Owen, 'in which the females have an inward fold of integument, or abdominal pouche, the males have an outward duplitecture in the corona of the pubes, and the subcutaneous connective tissue is thus placed anterior to the penis; and it is a remarkable fact that the muscle which surrounds the mammary gland in the one sex is analogous to the suspensory cremaster of the testes in the other. Both sexes in the marsupial animals manifest the power of retracted testes in possessing two superior venous cava, and in the want of the inferior mesenteric artery; and the uterine bones, so common in the skeletons of reptiles, are limited in the mammiferous class to this division, in which, alone, from the peculiarly brief period of uterine gestation and the consequent non-enlargement of the abdomen, their presence might be expected. But these bones serve important purposes in relation to the generative economy of the marsupial. 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ments from the sides of the neck, an allantois or vesical process, organised by umbilical or hypogastric vessels, is produced from the terminal portion of the intestinal tube. In the placental Mammalia, where the vitelline sac and vitellus are relatively smaller, the allantois makes its appearance to the placenta is in different proportions in the different orders. It is subservient in all the placental Mammalia to the important function of the transfer of the hypogastric or umbilical arterial to the exterior enveloping membrane or chorion; and in these Mammalia, Mr. Owen further traces the umbilical vessels coextensive with the allantoic cavity took a more intimate contact with the vascular surface of the womb, and proceeded to organise the chorion shooting out into villi, either extended over the whole surface, as in the marsupials, or disposed in the form of clumps in the placenta, or limited to one place and forming a single placenta, as in the human subject, and in all ungulates mammals.

As connected with this subject Mr. Owen subsequently exhibited a preparation (of which a cut is given in Loudon's * * * * * Professor's paper in the Phil. Trans.) to the Zoological Society of London, and took occasion to observe that in the bird and reptile the umbilical vessels are limited to the allantois, and do not extend beyond that membrance to the chorion, as the mammalian to the placenta, and perform no act of respiration of the fetus. In the placental mammalia, on the other hand, its office as a temporary respiratory organ is secondary, but it is essential as a means of transference of the umbilical vessels to the chorion; it has therefore a pre-existence to the placenta, and without it no placenta can form. The allantois, or urachus, as its remains are termed. The existence of a placenta, in Mr. Owen's mind, therefore infers the pre-existence of an allantois, but the placenta's existence does not necessarily hold out any evidence for it. In birds and scaled reptiles the allantois itself performs the functions of the placenta or vascular chorion; and the question to be resolved relatively to the Kangaroo and other Marsupials was whether, the allantois being developed, it would serve a modus for the introduction of the chorion, or remain, as in the oviparous vertebrata, an independent vascular bag or sac. The examination of the preparation alluded to, a uterine fetus of a Kangaroo placed at Mr. Owen's disposal by Dr. Sweetman, contributed to the solution of the question. This fetus was more developed than that described by Mr. Owen in *Phil. Trans.* The digits of the hinder extremities were, in this, completely formed. The umbilical chord extended nearly three lines from the abdominal surface of the fetus; the amnios was round, and was in the form of a disk attached to the vesting tunic of the fetus; and beyond the point of reflection, the chord divided into a very large superior vascular sac, organised by the ophalos-ementeric vessels, corresponding in all respects with the vitelline sac described and figured in Mr. Owen's paper in *Phil. Trans.* But below the neck of this sac there extended a second pyriform sac, about one-sixth the size of the vitelline sac, having numerous ramifications of the umbilical vessels, and constituting a true allantois was suspended freely from the end of the umbilical chord; it had no connection with its circumference with the chorion, and was equally free from attachment to the peritoneum of the utero, in which the fetus was developed.

The period of pregnancy (thirty-nine days) was determined in 1833, in the vivarium of the Zoological Society of London, by Mr. Owen, whose account of this hitherto obscure and most interesting portion of the natural history of the animal we here give from his paper in the *Phil. Trans.* and *Proc. Royal.
they were invariably employed to widen the orifice. When she withdrew her head, she generally concluded by licking the orifice of the pouch, and swallowing the secretion. After repeating the above act about a dozen times, she lay down, and seemed to be at ease.

Muscular power was testified by its efforts in suckling, during which it put every part of its body in motion. 'According to the testimony of the person,' continues Mr. Collie, 'who preserved the mother with this little one for me, the latter by no means passes the whole of its time with the local papilla in its mouth, but has been remarked, more than once, without having hold of it. It has even been wholly removed from the sac to the person's hand, and has always attached itself anew to the teat. Yesterday, on again looking at it, I gently pressed, with the tip of my finger, the head of the little one away from the teat of which it had hold, and continued pressing a little more strongly for the space of a minute altogether, when the teat, that had been stretched to more than an inch, came out of the young one's mouth, and remained small circular enlargement of wall adapting it for being retained by the mouth of the sucker. The opening of the mouth seemed closed iron both sides, and only sufficiently open in front to admit the slender papilla. After this I placed the extremity of a close to the opening, and gave it a short time, without perceiving any decided effort to get hold of it anew; when I allowed the sac to close, and put the mother into her place of security. An hour afterwards the young one was observed still unattached, but in about two hours it had hold of the teat and was actively employed in suckling.'

Professor Owen then refers to a similar experiment tried with a mammary fetus about the size of a Norway rat by Mr. Morgan. This fetus, after two hours' separation from the nipple, regained hold, although the interruption of the supply of nourishment. Mr. Owen concludes, therefore, that the evidence adduced establishes the fact that the mammary fetus at a very early period is at least capable of sustaining a separation from the nipple; and that, although the weight at that period is at the power of regaining its hold by its own unaided efforts, it is far from being the inert and formless embryo that it has been described to be, resembling on the contrary, in its vital powers, the newborn young one of a larger species at a period of development when such a fetus corresponds in size to a newborn Kangaroo; and although the latter possesses greater powers of action than the same-sized embryo of a sheep, and approximates more nearly in this regard to the newborn young of the rat, yet, Mr. Owen observes, it is evidently inferior to the latter. For, though enabled by the muscular power of its lips to grasp and adhere firmly to the nipple, its own unaided efforts seem incapable of drawing sustenance from the latter. The special condition of the mammary gland and the necessity for which appears to have been foreseen by John Hunter in his dissection of two small mammary faucets of the Kangaroo for the especial purpose of showing the relation of the larynx to the 'posterior nares' (Nos. 3731, 3732, 3735, Mus. Coll. Reg. Chir., Physiological series), in which, as Mr. Owen states, there are evidences that Hunter had anticipated most of the anatomical discoveries which have subsequently been made upon the eminence of the Kangaroo. The nares are elongated and approximated, and the rima glottidis is thus situated at the apex of a cone-shaped larynx which projects, as in the Cats, into the posterior nares, where it is closely embraced by the muscles of the soft palate. The position of the nares is thus the completest and the injected milk passes in a divided stream on either side the larynx to the oesophagus.

'Thus aided and protected by modifications of structure,' continues Professor Owen, 'both in the system of the mother and in its own, destined to go its course peculiar to each other's condition, and affording therefore the most irrefragable evidence of creative foresight, the feebly offering continues to increase from sustenance exclusively.

Mr. Collie's letter, which is addressed to Mr. Vigors, is dated 26th January, 1830.
derived from the mother for a period of about eight months. The young Kangaroo may then be seen frequently to protrude its head from the mouth of the pouch, and to crop the grass at the same time that the mother is browsing. Having thus acquired additional strength, it quits the pouch, and hops at first with a feeble and vacillating gait, but continues to return to the pouch for occasional shelter and supplies of food till it has attained the weight of ten pounds. After this it will occasionally insert its head for the purpose of sucking, notwithstanding another foetus may have been deposited in the pouch, for the latter, as we have seen, attaches itself to a different nipple from the one which had been previously in use.

1. The head of a mammae frog of a Kangaroo, about eight weeks old, dissected to show the relation of the larynx to the tongue and posterior nerves. a, the epiglottis, drawn down out of the aperture in the soft palate; b, the cavity of the tongue for the reception of the nipple. 2. The elongated nipple, withdrawn from the mouth, the latter being exerted to which it is grasped; it never extends into the osophagus or stomach, as has been conjectured. (Glow.)

For the observations made by Professor Owen on the structure of the female generative organs in the other Marsupials, as compared with those of Oviparous, Ovoviviparous, and Viviparous animals, we must refer to his paper above quoted, our space not permitting us to do more than call the reader's attention to the fact that his inductions rest principally on the examination of those organs in Didelphys dorogera, Petaurus pygmaeus, Petaurus Tanguanoides, Didelphys virginiana, and Macropus major. His remarks on the inferiority of the cerebral development of the Marsupials will be read with great interest as bearing on the structure and analogies of those organs, and other points of resemblance to the lower vertebrate classes, especially to the reptiles. Those marsupial quadrupeds which I have had an opportunity of observing alive in the Zoological Gardens, says the professor (and there are at present 1834 species of Dasyurus, Didelphys, Phalangista, Petaurus, Hypsiprymnus, Macropus, and Phascolomya), are all characterised by a low degree of intelligence; nor can I learn that they ever manifest any sign of recognition of their keepers or feeders. Another character, no less uniformly belonging to them, is the want of a power of uttering vocalised sounds. When irritated they emit a wheezing or scaring sound; that of the Dasyurus verrucosus is the clearest, and is the nearest approach to a growl. Mr. Harn however states that in addition to this noise, the Urnen Opossum utters a kind of hollow barking. The Thylacynus phusus, or large Dog-faced Opossum, is observed 'a short guttural cry, and appears exceedingly nervous and stupid, having, like the owl, an almost constant remembrance of the nictitating membrane of the eye.' The when irritated, emits a loud hiss, which forloks reminds one of that of the serpent. The noise emitted by the Kangaroo under similar circumstances is equally removed from a vocalised sound; the necessary apparatus for producing which, Cuvier long ago observed to be wanting in the larynx of this animal. It is interesting to find these analogies to the reptilia, and more might be pointed out if it were not a comparison which merits a separate consideration. The reader who would pursue his inquiries to the generative system of the Marsupials may also consult the previous writings of Daubenton, Rengger, and Leach. The museum of the Royal College of Surgeons will afford ample materials for following out the organization of the extraordinary group in the skeletons and preparations preserved in the Zoological Society of London on the 5th and 22nd of January, 1839.

Classification of the Marsupials

<table>
<thead>
<tr>
<th>Tribes</th>
<th>Families</th>
<th>Genera</th>
<th>Subgenera</th>
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<tbody>
<tr>
<td>Sarcophaga.</td>
<td></td>
<td>Dasyurida</td>
<td>Dasyurus</td>
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<tr>
<td></td>
<td>Three kinds of teeth; canines long in both jaws; a simple stomach; no intestine cecum.</td>
<td>Phascolagale</td>
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<td></td>
<td></td>
<td>Extinct transitional forms.</td>
<td>Phascolotherium (fossil)</td>
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<td>Ambulatoria</td>
<td>Myrmecobius</td>
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<td>Saltatoria</td>
<td>Ceropus</td>
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<td>Scansoria</td>
<td>Didelphys</td>
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<td></td>
<td></td>
<td>Carpophaga.</td>
<td>Cheirodactylus</td>
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<tr>
<td></td>
<td>Anterior incisors large and long in both jaws; canines constant; a simple stomach; a very long intestine cecum.</td>
<td>Phalangista</td>
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<td></td>
<td>Porphaga.</td>
<td>Cuscus</td>
</tr>
<tr>
<td></td>
<td>Anterior incisors large and long in both jaws; canines present in the upper jaw only or wanting; a complex stomach; a long intestine cecum.</td>
<td>Phalangisidae</td>
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<td>Rhizophaga.</td>
<td>Hypsiprymnus</td>
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<tr>
<td></td>
<td>Two scalpriform incisors in both jaws; no canines; stomach with a special gland; cecum short, wide, with a veriform appendage.</td>
<td>Phascolactidae</td>
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* The terms given to the tribes or primary groups of Marsupials in the classification are not to be understood as strictly indicating the food of the species generally included therein, but only their general tendency to select for their support the substances implied by those designations.
We now proceed to give a succinct illustration of the genera and some of the subgenera above mentioned.

**Thylacinus.** (Temminck.)

**Generic Character.**—Dental Formula:—Incisors 8, Canines 1—1, Molars 7—7 = 46. The incisors are ranged in a semicircle, equal, and separated in the middle in each jaw by a vacant space; the external incisor on each side is the stoutest; the canines are of considerable size, curved and pointed like those of the Cats and Dogs; the last molars are armed with three obtuse tubercles, resembling those of the two groups of Carnivora last mentioned. Toes five on each fore-foot, and four on each hind-foot.


**Description.**—Size of a young wolf; the short smooth hair of a dusky yellowish-brown above, barred or sobered on the lower part of the back and rump with about sixteen jet-black transverse stripes, broadest on the back and gradually tapering downwards, two of which extend a considerable way down the thighs. The ground-colour on the back inclines to blackish grey. Tail much compressed and tapering to a point.

**Habit and Locality.**—Mr. Harris, from whose paper in *Linn. Trans.* our description and figure are taken, states that this species, the largest of the Australian Carnivora, inhabits amongst caverns and rocks in the deep and almost impenetrable glens in the neighbourhood of the highest mountainous parts of Van Diemen's Land, where it probably preys upon the brush (bush?) Kangaroo and various small animals that abound in those places. The individual from which the description and drawing were taken was caught in a trap baited with Kangaroo-flesh. It remained alive but a few hours, and during that period uttered the cry and presented the appearances quoted by Mr. Owen. In its stomach were found the partly-digested remains of a Porcupine Ant-Eater (*Echidna aculeata*). The vulgar names for this species are, the Zebra Ovaceum, Zebra Wolf, &c.

**Habit and Locality.**—This species, which is very voracious, and burrows in the ground in Van Diemen's Land, is of the size of a badger. 'These animals,' says Mr. Harris, 'were very common on our first settling at Hobart Town, and were particularly destructive to poultry, &c. They however furnish the convicts with a fresh meal, and the taste was said to be not unlike veal. As the settlement increased, and the ground became cleared, they were driven from their haunts near the town to the deeper recesses of forests yet unexplored. They are however easily procured by setting a trap in the most unfrequented parts of the woods, baited with raw flesh, all kinds of which they eat indiscriminately and voraciously; they also, it is probable, prey on dead fish, blubber, &c., as their tracks are frequently found on the sands of the sea-shore. In a state of confinement they appear to be untameably savage; biting severely, and uttering at the same time a low growling growl.
A male and female, which I kept for a couple of months chained together in an empty cask, were continually fighting; their quarrels began as soon as it was dark (as they slept all day), and continued throughout the night almost without intermission, accompanied with a kind of hollow barking, not unlike a dog, and sometimes a sudden kind of snorting, as if the breath was retained a considerable time, and then suddenly expelled. The female generally conquered. They frequently sat on their hind parts, and used their fore-paws to convey food to their mouths. The muscles of their jaws were very strong, as they cracked the largest bones with ease asunder; and many of their actions, as well as their gait, strikingly resembled those of the bear. Its vulgar name is the Native Devil.  

The specimen in the garden of the Zoological Society was a snarling surly animal.  

Mr. Owen's account of the dissection of a Dasyurus macrurus, or Long-tailed Dasyurus (Spotted Marten of Phillip's Voyage), will be found in the 'Zoological Proceedings' for 1835.  

Phascogale. (Temminck.)  
Generic Character.—Differing from Dasyurus, especially in its Dental Formula:—  

\[
\begin{align*} 
\text{Incisors} & \quad 8 \quad 8, \\
\text{Canines} & \quad 1 \quad 1 \quad 1 \quad 1, \\
\text{Molars} & \quad 7 \quad 7 \quad 7 \quad 7 \quad 7 \quad 7 = 46. 
\end{align*}
\]

Example, Phascogale penicillata (Didelphis penicillata of Shaw, Dasyurus penicillatus of Geoffroy). Size rather larger than that of the Brown Rat (Mus decumanus). Tail very bushy. Fur uniform, ash-colour, whiter beneath, short, woolly, and very thick.  

Habits and Locality.—This Phascogale lives on trees in New Holland.  

Myrmecobius fuscatus. (Waterhouse.)  
Mr. Waterhouse observes, that although in the structure of the skull $M. fuscatus$ evinces an affinity to $Phascogale$, it differs from that genus in the want of a thumb in the hind-feet, and in the strength and larger size of the claws of the fore-feet, which are shaped somewhat like those in the genus Herpestes, and are evidently suited to burrowing. The fore-legs are also stouter in proportion, and the feet are stronger. In their narrow and pointed shape, the ear, he remarks, resemble those of Perameles nasuta, and also differ from those of Phascogale; they also differ in being rather well clothed with hair. Mr. Waterhouse imagines that in the present animal he can perceive a slight approach to the Edentata Maropialia, or Monotremes, and be thinks that analogically it may be compared to the genus Tenax among the true Insectivora, bearing a somewhat close connection with Ethidea and Ornithorhynchus to that which exists between the last-mentioned genus and the genera Erinaceus and Mygale. In conclusion he adds that it must be allowed that there is a greater dissimilarity in structure between the last-mentioned genus and the genera Myrmecobius and the Monotremes, than between Tenax and Mygale; we are however prepared for this, by the comparatively sudden transitions from one form to another which we find in the Marsupials, which group, it must be borne in mind, stands low in the grade of organization among the Mammalia. (Zool. Trans., vol ii.)
Charopus. (Ogilby.)

On the 13th March, 1838, Mr. Ogilby exhibited to a meeting of the Zoological Society of London a drawing, made by Sir Thomas Mitchell, of a Marsupial animal found by that officer on the banks of the river Murray, during his late journey in the interior of New South Wales. Mr. Ogilby stated his original belief that the animal in question belonged to the genus Perameles, under which impression he had proposed to name it Per. eucadratus, from its entire want of tail, a character found in no other species of the same group; but a drawing of the foot, afterwards found by Sir Thomas Mitchell, and likewise exhibited to the Society on the present occasion, had considerably shaken this first opinion, and induced Mr. Ogilby to suspect that the animal may eventually form the type of a new genus. According to Sir Thomas Mitchell’s drawing, and the notes which he took at that time of examining the specimen, it would appear that there were only two toes on the fore-feet, which were described as having been so perfectly similar to those of a pig, as to have procured for the animal the name of the pig-footed bandicoot, among the persons of the expedition.

The following is the notice of this animal inserted by Sir Thomas Mitchell in his journal, on the occasion of first discovering it: ‘June 16, 1836. The most remarkable incident of this day’s journey was the discovery of an animal of which I had seen only a head in a fossil state in the limestone caves of Wellington Valley, where, from its very singular form, I supposed it to belong to some extinct species. The chief peculiarity then observed was the broad head and very long slender snout, which resembled the narrow neck of a wide bottle; but in the living animal the absence of a tail was still more remarkable. The feet, and especially the fore-legs, were also singularly formed, the latter resembling those of a pig; and the marsupial opening was downwards, and not upwards, as in the Kangaroo and others of that class of animals. This quadruped was discovered by the natives on the ground; but on finding it, it took refuge in a hollow tree, from which they took it alive, all of them declaring that they had never before seen an animal of the kind. This was where the party had commenced the journey up the left bank of the Murray, immediately after crossing that river.’ Such, Mr. Ogilby remarked, was all the information he possessed at present with regard to this singular animal; but Mr. Gould had promised to examine the original specimen on his arrival at Sydney, in the Museum there it had been deposited; and Mr. Ogilby therefore hoped that, through the kindness of that gentleman, he should shortly have it in his power to communicate a more detailed description of its form and characters to the Society. (Zool. Proc. 1838.)

Dental Formula:—Jaw

| Upper | 4 incisors, 4 spurious molars, * 3 or 4 molars |
| Lower | 13 incisors, 4 spurious molars, 3 or 4, perhaps 5 |

* The anterior of these might be termed canines.

P. C., No. 208.

Perameles. (Geoffroy.)

Generic Character.—Head elongated, pointed; ears moderate, hairy; posterior great-toes rudimentary, and the two succeeding toes united by the skin up to the nails; great toe and little toe of the fore-feet with the form of simple turgor, so that they wear the appearance of having only three anterior toes.

Dental Formula:—Incisors 10; canines 1–1; molars 7–7 = 48.

Teeth of Perameles. (F. Cuvier.)

Example, Perameles nasutus.

Description.—Head very long; muzzle produced; nose prolonged above the jaw; fur grey-brown above and white beneath.

Locality.—Australia.

Mr. Gray, in characterizing a new species of Perameles (Per. Gunni), very closely agreeing with Per. nasutus, but peculiar for its very short white tail, and in having several indistinct white bands over the haunches, stated that Per. Gunni inhabits Van Diemen’s Land, where it frequents gardens, and commits great havoc amongst bulbous roots, which it is said to devour with avidity (Zool. Proc., 1838). There is now (1839) a specimen of Perameles Lagotis, or Rabbit Perameles, from Swan River, in the garden of the Zoological Society in the Regent’s Park.
Didelphys. (Linnaeus.)

Generic Character. - Head very much pointed, gaze wide; tongue rough with horny papillae; ears large and naked; eyes small; tail long and tapering, flexible, and prehensile, with hair at the base only, the remaining part being covered with scales. Fore-feet with five toes, all armed with strong, sharp, curved claws; thumb of the hind-foot opposite and destitute of nail or claw, the other toes or fingers armed with claws like those of the fore-feet.

Dental Formula:—Incisors 10\(\frac{1}{6}\); canines 1-1; molars 7-7 = 50.

Geographical Distribution of the Genus.—America exclusively.

Example, Didelphys Virginiana.

Description.—Size that of a domestic cat. Colour dull white. Hair of two kinds; that which is longest, a long fine woolly down, white at the base, brownish at the tip, through this pass the long hairs of a pure white on the head, neck, and upper parts of the body; the hair is short and close. Round each eye a brownish circle. Ears generally black at the base and yellowish at the tip. Whiskers long, partly white, partly reddish. Extremity of the nose flesh-coloured, with a tinge of yellow. Legs deep chestnut brown. Tail not so long as the body, covered at the base by long hairs, but only scantily furnished with bristles, which come out from between the whitish scales that protect it, for the greater part of its length.

Habits and Locality.—The Virginian Opossum is an arboreal animal, as might be expected from the structure of its posterior feet or hands especially. It appears to be to a certain degree carnivorous, for it preys upon insects and birds, and feeds also on fruits; but there is reason for believing that animal food forms its principal support, for it sometimes invades the farm-yards in its neighbourhood. According to Barton, the period of uterine gestation in this species is twenty-six days. It inhabits North America, and was, perhaps, is, very abundant in the North of Mexico, and nearly throughout the United States, where it is called the opossum. In the Perfect Description of Virginia (1643), we find, in the catalogue of animals, "Possumus—" This beast hath a bagged under her belly, into which she takes her young ones, if at any time affrighted, and carries them away." Lawson says, "The Possum is found nowhere but in America. She is the wonder of all the land..."

In the British Museum there is a stuffed specimen of Didelphys maculata, beautifully prepared, with the young in this position.
Didelphys Virginiana (Virginia Opossum).

The French name Sarigue for the species of this genus is evidently a form of Cariguaya, the Brazilian name for the genus. They are known in Paraguay under the name of Micour, in the American Islands under that of Maicou, and in Mexico by the appellation of Tlaquatsin.

Cheironectes. (Illiger.)

Generic Character.—The complete dental formula of this subgenus does not appear to be known. The number of incisors is stated at ten above and eight below. Head rather pointed; ears naked, rounded; tail scaly, prehensile; an opposable thumb on the hind feet or hands, and the toes webbed.

Example, Cheironectes palmatus (Cheironectes Yapock of Desmarest; Didelphus palmata of authors).

Description.—Fur brown above, with three transverse bright grey bands, interrupted in the middle; white below. Size larger than that of the brown rat.

Habits and Locality.—The river Yapock, or Oypock (the boundary that separates the French Settlements from Brazil), in Guyana, is the place where this species has been found. It swims with facility; indeed Buffon describes it under the name of Petite louvre de la Guyane.

Cheironectes palmatus.

Phalangista. (Cuvier.)

Generic Character.—Head rather short; ears hairy; fur woolly and short; no extensible membrane between the anterior and posterior limbs; tail long, prehensile, sometimes without hair on its extremity.

Subgenus Phalangista, properly so called—Balantia (Illiger).

Tail prehensile, but covered with hair; ears long and erect.


Teeth of Phalangista. (P. Cuvier.)

Example, Phalangista vulpina.

Description.—The following description of this species is given in Phillip's Voyage:—Vulpine Opossum. This is not unlike the common fox in shape, but considerably inferior to it in respect to size, being from the point of the nose to the setting on of the tail only 26 inches; the tail itself 15 inches: the upper parts of the body are of a grisly colour, arising from a mixture of dusky and white hairs, with rufous yellow tinge; the head and shoulders partaking most of this last colour: round the eyes blackish: above the nostrils ten or twelve black whiskers, four inches or more in length: all the under parts of the body are of a
tawny buff colour, deepest on the throat, where the bottom of the hairs are russet colour; the tail is of the colour of the back for about one quarter of its length, thence to the end black: the toes on the fore-feet are five in number, the inner one placed high up; on the hind-feet four toes only; with a thumb, consisting of two joints, without a claw, placed high up at the base of the inner toe: the whole foot serving the purpose of a hand, as observable in many of the Opossum genus. The legs are much shorter in proportion than those of the common fox; the ears about one inch and a half in length. It is the Phalanger Renard of the French, Bruno of Visch-d'Asy, and Whatapoporo of the natives.

Locality.—New Holland; neighbourhood of Port Jackson.

Subgenus Cuscus. (Lacépède.)

Tail prehensile, but in great part naked and covered with rugosities; ears very short.

Dental Formula:—Incisors $\frac{6}{6}$; canines 0; molars $\frac{6}{8}$. $= 38$. (Lesson.)

Geographical Distribution of the Genus.—Peculiar to the Western Polynesia or Malaisia (Lesson).

Example, Cuscus maculatus (Didelphis Orientalis of Gmelin; Cuscus Ambosinensis of Lacépède; Phalangista maculata of Godfrey).

Description, Habits, and Locality.—This species, which is named Coecoscoa at the Moluccas, according to Valentyn, varies much in its colouring, with reference to sex and age.

M. Lesson, who found it at Wagrou, where the natives call it Scham-scham, says that its fur, which is thick and woolly, is generally whitish, covered with isolated brown spots, sometimes running together. The same author states that its habits are slow and nocturnal, and that it lives on fruits in the equatorial forests of the great Molucca and Papuan Islands.

Cuscus maculatus.

Petaurus. (Shaw.)

Genus Character.—Head rather short; ears small and hairy; skin of the flanks extended over the anterior and posterior limbs, and covered with hair; tail not strictly prehensile.

Dental Formula:—Incisors $\frac{6}{3}$; canines $\frac{0-0}{0-6}$; molars $\frac{8}{8}$. $= 38$.

It will be observed that the number of lower molar teeth given in the cut amounts only to five, and consequently does not correspond with the formula above given, or with that stated by M. F. Cuvier himself, who makes the total number of teeth 23 in the upper jaw, and 26 in the lower, and the number of upper false molars 6, and of molars 6 also; the number of lower molars being 6 false and 8 true, $= 38$ in all. He tells us that this form of dentition is taken from Phalangista Cookii, Petaurus Taguanoides, a species which has no name.

Le Phalanger didelphoide ou Le Macaque de M. Geoffroy, and a species which has no name.

Teeth of Petaurus. (F. Cuvier.)

Mr. Bennett, who, in common with Cuvier, Desmarest, and Lesson, has placed the interesting species which we have chosen as the example under the genus Petaurus, remarks that M. F. Cuvier, relying solely on the discrepancy or agreement of the dentary systems, and putting entirely out of the question all consideration of other and essential points of structure, has reunited the old genus Phalangista, in order again to subdivide it into two incongruous and heterogeneous groups: in the one confounding two well marked species of flying Petaurs not only with the climbing Phalangista of New Holland, but with the naked-tailed and strictly prehensile Coecoscoa of the Moluccas; repaying the other group, which he had so unnecessarily dismembered, by the addition of a true Phalangista, whose only pretensions to such an association are made to depend on a somewhat similar arrangement of the teeth. 'By thus confining himself to a single character,' continues Mr. Bennett, 'he has broken up the regular series of affinities which connected together three marked but still closely allied gradations of form, to substitute an arrangement which has no other recommendation than the theoretic views of its author. In such a case we cannot hesitate in giving to the organs of locomotion, combined with the general habit, that precedence before those of mastication, which, under other circumstances, we are generally in the habit of attributing to the latter; and we feel the less repugnance to adopt this course, because it is admitted that the dentary formula is in these animals subject to some variation, and because zoologists are by no means agreed with respect to its exact definition. The teeth of the Squared Petaurus agree generally, according to M. F. Cuvier, with those of the Phalangistas. They are consequently 38 in number, 20 occupying the upper jaw, and 18 the lower. The former are divided by the same eminent naturalists into six incisors, four canines, two false molars, and eight true ones; the latter consisting of two incisors, two canines, with eight false and as many true molars. The dentary character of the original species of Petaurus, which he takes as the type of his other group, differs chiefly in the total want of canine teeth; but we may here be permitted to observe that it appears to us somewhat doubtful how far those which are above enumerated as such truly deserve the name which has been applied to them. In every other respect the little creature in question perfectly agrees with the group of animals to which we have restored it; and which are at once characterised by the broad expansion of
their skin on each side of the body, extending between the anterior and posterior limbs, as in the Flying Squirrel, to which indeed they bear a close resemblance. In common with nearly the whole of the mammiferous quadrupeds of the country which they inhabit, they possess the abdominal pouch which fixes their place in the system among the marsupial animals; and, as in many of these, the thumbs of the hind-feet are long and distinctly opposable to the sole.

The other toes are four in number, and furnished with tolerably strong claws, of which the thumbs are destitute. The fore-feet have long radiating toes, the middle one of which is the longest, all armed with similar claws to those of the hind-feet. The tail is round, covered with loose hair, somewhat tapering towards the point, and not strictly prehensile, having no naked surface at its extremity beneath. In size the present species is about equal to the common Squirrel, and its tail is rather longer than its body. Its colour is delicately gray above, somewhat darker on the head, and white beneath. A black line passes from the point of the nose along the back towards the tail; and the lateral folds of the skin are bounded in front and on the sides by a similar band, which confounds itself gradually in the inside with the gray of the body, and is bordered at the outer margin by a fringe of white. The claws are each placed in a spot of black, and a faint blackish line extends along the upper surface of the hinder limbs. The tail is also of a darker hue, especially towards its extremity.

Example, *Petaurus setosus* (Norfolk Island Flying Squirrel, figured and described in Phillip's Voyage).

**Description.**—See above.

**Phascolarctos (De Blainville; Lipurus, Goldfuss; Ambllos, Hlger).**

**Generic Character.**—Body stout. Head short, ears shaggy. Limbs rather short, robust, and nearly equal in length. Toes five on each fore-foot; the anterior toes divided into two groups for prehension, the thumb and the fore-finger being in one group, and the remaining three fingers in the other, the thumb of the posterior foot very large, but without a nail, and the two inner fingers united. Tail very short, almost null. Mr. Martin says that it differs from the *Wombat* in its dental formula, in which respect it closely resembles the Kangaroo.

**Dental Formula.**—Incisors \(6\); canines \(1+1\); spurious molars \(3+3\); true molars \(4+4\); \(= 30\).

The canines are small, and in the intermaxillary suture. The false molars are compressed and trenchant, but thicker than in *Hysterpiymnus*, the dentition of which, otherwise, that of the *Koala* resembles closely. The lower true grinders are narrower than the upper ones, and both quadricuspid.

Only one species is known, namely *Phascolarctos cinereus* (Lipurus cinereus of Goldfuss; Phascolarctos fuscus of Desmarest; Phascolarctos Flindersi of Lesson. *The Ashy Koala*).

**Habits and Locality.**—"During the day," says Mr. Bennett, "the animal generally remains quietly nestled in the hollows of trees, but becomes animated as night advances, and skims through the air, supported by its lateral expansions, half leaping, half flying from branch to branch, feeding upon leaves and insects. This peculiar mode of locomotion can scarcely be considered as a true flight, inasmuch as the cutaneous folds which serve the purposes of wings seem rather destined for the mere support of the animal in its apparently desperate leaps, than for raising it in the air and directing its course towards any given object. For this latter purpose they are indeed but little fitted by their structure, the want of proper muscles in a great measure incapacitating them from performing such offices as are dependent on volition. It may be doubted however whether these animals are entirely destitute of the power of exercising their will in their flight-like leaps. For the following anecdote bearing upon this subject we are indebted to our friend Mr. Broderip, who related it to us on unquestionable authority. On board a vessel sailing off the coast of New Holland was a Squirrel *Petaurus*, which was permitted to roam about the ship. On one occasion it reached the mast-head, and as the sailor who was despatched to bring it down approached, made a spring from aloft to avoid him. At this moment the ship gave a heavy lurch, which, if the original direction of the little creature's course had been..."
colony, from the Hat Hill district, to the southward of Port Jackson, in 1803. The native name 'Koala' is said to signify 'Biter.'

There are old and young stuffed specimens in the British Museum, and a stuffed specimen (Mr. Caley's) in the Museum of the Linnean Society.

The visceral anatomy will be found in Mr. Martin's paper 'On the anatomy of the Koala,' read to the Zoological Society in November, 1836 (Zool. Proc., 1836). It is chiefly remarkable for the enormous size and length of the cecum.

**Hypsiprymnus. (Illiger.)**

**Generic Character.**—Head elongated; ears large; upper lip cleft. Tail moderate, scaly, covered scantily with hairs. Two teats only in the ventral pouch of the females. Anterior feet five-toed, armed with obtuse nails; third toe of the hind-feet very robust, and armed with a very strong nail.

Dental Formula:—Incisors, \( \frac{6}{2} \); canines, \( \frac{1}{1} \); molars, \( \frac{3}{1} = 30 \).

**Example. Hypsiprymnus Potoroo (Macropus minor of Shaw; Potorous rufus and Kangaroo Gutmardi of Desmares; Hypsiprymnus White of Quoy and Gaimard; Potoroo of White, and Kangaroo Rat of Phillip's Voyage).**

**Teeth of Hypsiprymnus. (F. Cuvier.)**

**Skull of Hypsiprymnus.**

**Description.**—Size of a rabbit; general colour grayish, reddish-brown above, whitish below; head triangular, ears large, tarsi very long; tail elongated, flexible, terminated by a pencil of hairs.

**Habits and Locality.**—The manners of the Kangaroo Rat are stated to be mild and timid; its food consists of vegetables, and it is said to burrow in the ground. New Holland is its locality, and Lesson says that it is not rare in the neighbourhood of Port Jackson, especially near the river Wera-gamba in the Blue Mountains.

M. Lesson records two other species, and Mr. Ogilby describes (Zool. Proc., 1831) a fourth, Hypsiprymnus setosus, known in the colony of New South Wales by the native name of Bettong Kangaroo. The specimen described by Mr. Ogilby was believed to have been brought from Swan River. The last-named zoologist has also characterized six other new species. (Zool. Proc., 1838.)

**Hypsiprymnus Potoroo (Kangaroo Rat).**

**Subgenus Halmaturus. (Illiger in part.)**

**Generic Character.**—Differing from the true Kangaroo in having shorter ears, a tail nearly naked, or only with a few hairs.

Dental Formula:—Incisors, \( \frac{6}{5} \); canines, \( \frac{0}{1} \); molars, \( \frac{5}{5} = 28 \).

**Example, Halmaturus elegans (Kangaroo fossa of Peron and Lesueur).**

**Description.**—Colour mouse-gray, bordered transversely with reddish-brown on the back and loins. Size of a large hare.

**Habits and Locality.**—Haunts under thick bushes, and is said to form subterranean galleries in the island of St. Pierre.

**Subgenus Macropus (Shane; Halmaturus of Illiger in part).**

**Generic Character.**—Head elongated; ears very large, upper lip cleft; whiskers very short and few. Features limbs like those of Hypsiprymnus, but much longer and more robust. Tail long, triangular, very muscular.
This extraordinary animal, discovered by Captain Cook, is now so well known, that a description, in addition to our illustrations and account of its animal economy, is unnecessary. Our countrymen pursued it in New Holland with greyhounds, and the leaps which it took surprised those who beheld it. It appears as if it can overcome obstacles seven or eight feet high. In size it equals a sheep, some of the largest weighing 140 lbs., and the flesh is represented by those who have tasted it as being a little like venison. The species breeds pretty freely in this country, and has been kept with success in our parks.

Locality.—New Holland.

There are several other species.

**Phascolomys.** (Geoffroy.)

**Generic Character.**—Body clumsy. Head large and bulky. Fore-feet with five toes, armed with crooked nails; hind-feet with four, and a little tubercle without a nail, in the place of the great toe; indeed it may be said to have but four toes on the hind-feet. Tail nearly null.

**Dental Formula:**—Incisors $\frac{6}{2}$; canines $0$; molars $0$; $\frac{6}{2} = 24$.

**Example.**—The only species known is **Phascolomys Wombat** (Didelphis versuta of Shaw; The Wombat of the natives, navigators, and naturalists).

**Description.**—From Lieut.-Col. Collins's 'Account of the English Colony of New South Wales' (1802), we select the following part of a description of a Wombat:—

'The Wombat, or, as it is called by the natives of Port Jackson, the Wombach, is a squat, short, thick, short-legged, rather inert quadruped, with great appearance of stumpy strength, and somewhat bigger than a large turnspit dog. Its figure and movements, if they do not exactly resemble those of the bear, at least strongly remind one of that animal. Its length, from the tip of the tail to the tip of the nose, is thirty-one inches, of which its body takes up twenty-three and five-tenths. The head is seven inches and the tail five-tenths. Its circumference behind the fore-legs twenty-seven inches; across the thickest part of the belly thirty-one inches. Its weight by hand is somewhat between twenty-five and thirty pounds. The hair is coarse, and about one inch or one inch and five-tenths in length, thinly set upon the belly, thicker on the back and head, and thickest upon the loins and rump; the colour of it a light sandy brown of
varying shades, but darkest along the back. The head is large, flattish, and nearly triangular when viewed in front; the ears are sharp and erect; the eyes small and rather sunken than prominent, but quiet and lively.

Habits and Locality.—From the same work we take the following account of the habits, &c. of this species:—"This animal has not any claim to swiftness of foot, as must be understood, but is very cunning, and could run it down. Its pace is hobbling or shuffling, something like the awkward gait of a bear. In disposition it is mild and gentle, as becomes a gregarious animal; but it bites hard, and is furious when provoked. Mr. Bons never heard its voice but at that time; it was a low cry between a barking and a hissing, which could not be heard at a distance of more than thirty or forty yards. He chased one, and with his hands under his belly suddenly lifted him off the ground without hurting him, and laid him upon his back along his arm like a child. His legs kicked and scratched most furiously, and snapped off a piece from the elbow of Mr. Bons's jacket with his grass-cutting teeth. Their friendship was here at an end, and the creature remained implacable all the way to the boat, ceasing to kick only when he was exhausted. This circumstance seems to be caused by the fact that, with kind treatment, the Wombat might soon begin to render itself extremely docile; but let his tutor beware of giving him provocation, at least if he should be full grown. Besides Furneaux's Islands, the Wombat inhabits, as has been seen, the entire western coast of Tasmania. In both these places its habitat is under ground, being admirably formed for burrowing; but to what depth it descends does not seem to be ascertainable. According to the account given of it by the natives, the Wombat of the mountains is never seen during the day, but lives retired in his hole, feeding only in the night; but that of the islands is seen to feed in all parts of the day. His food is not yet well known; but it seems probable that he varies it, according to the situation in which he may be placed. The stomachs of such as Mr. Bons examined were distended with the coarse wiry grass and he, as well as others, had seen the animal scratching among the dry ricks of sea-weed thrown up upon the shores, but could never discover what it was in search of. Now the inhabitant of the mountains can have no recourse to the sea-shore for his food, nor can it be found there any wiry grass of the islands, but must live upon the food that circumstances present to him."

A letter from James Hunter, Esq., Governor of the settlement, dated Sydney, New South Wales, August 5, 1788, and published in Beverley's 'Journals,' states, that this animal, there called The Wombach, was found upon an island on the coast of New South Wales, in lat. 40° 30′ S., where considerable numbers were caught by the company of a ship which had wrecked there on her voyage from Bengal to Port Jackson. This communication relates that it had lastly been discovered to be an inhabitant of the interior of this country also. The mountain natives call it the Wombach.

The specimen dissected by Sir Everard Home in 1808 was brought from one of the islands in Bass's Straits, and lived as a domestic pet in the house of Mr. Clift for two years.

The individual dissected by Mr. Owen in May, 1836, had lived at the Gardens of the Zoological Society upwards of five years. Mr. Lesson says that it lives in King Island and the Furneaux Islands, but that it does not exist in the neighbourhood of Port Jackson.

The anatomy of the Wombat will be found in Cuvier's 'Anatomie Comparee,' in Sir Everard Home's paper, 'Phil. Trans.,' 1808, and in Mr. Owen's memoir, 'Zool. Proc.' 1836. The latter observes that the digestive organs in the abdominal cavity presented a development corresponding generally to that which characterises the same parts in the Phyllostomus Borealis. It has a short caecum.

The flesh of the Wombat is said to be excellent. Mr.

Hunter, the writer of the letter above quoted, terms it delicately mutton, and some have remarked that the animal might be easily naturalised in this country.

The impression made upon us by Mr. Bons's account of the behaviour of the Wombat which he caught, and by one that we have seen in captivity, is, that the animal is of a low grade in point of intellect. In both cases, as long as there was no positive pain or disagreeable sensation, the animal was content, however new its situation might be. There was none of that anxiety and uneasiness which all animals of lively sense show when suddenly placed in new positions or strange places; and indeed the following note is appended to Mr. Bons's account of the capture of his Wombat:—"The Kangaroo and some other animals in New South Wales were remarkable for being domesticated as soon as seen. This may be one of the consequences of their low cerebral development generally to be observed in this group.

Phascolomys Wombat.

Fossil Marsupialia.

Besides the Fossil Opossum (Didelphys Cuvierii) of the Montmartrie Group, figured and described by Cuvier in the 'Annales du Museum,' and in his 'Omnibus Faunice,' and the fossil Dasyurus, Hypsiprymnus, Halosatyrus, Phascolomys, and Kangaroo, described by Mr. Clift and Cuvier and Mr. Pentland, from the Australian bone-caves and bone-breccia, there are some fossil forms now generally considered as belonging to the Marsupialia, which it will be necessary, on account of the great interest which attaches to them both geologically and zoologically, to mention more at length.

We commence with those fossil jaws originally described as belonging to the Marsupialia, which were found at Stonesfield.

Thylacotherium. (Owen.)

In consequence of strong doubts* having been recently expressed by M. de Blainville, from inspection of some respecting the mammiferous nature of the fossil jaws found at Stonesfield, and assigned to the Marsupialia by Barq Cuvier, a paper 'On the Jaws of the Thylacatherium Proc. vittis from Stonesfield' was read before the Geological Society by Richard Owen, Esq., F.R.S., G.S., &c., Herriyan professor in the Royal College of Surgeons at the 21st of November, 1836, being the first of two memoirs meeting the objections, and giving a detailed account of the fossils from a careful inspection of the originals. In this communication Mr. Owen confined his description to the jaws discovered at Stonesfield, characterised by having eleven molars in each ramus of the lower jaw. He commenced by observing that the scientific world possessed ample evidence of the truth and fact with which the

* See 'Compte Rendu,' 1836.
trous Cuvier formed his judgments of the affinities of the extinct animal from the inspection of a fossil fragment; and fully justified his so distinguished a comparative anatomist as M. de Blainville questioned the determinations, that it became the duty of those who possessed the means to investigate the nature of the doubts, and re-assure the confidence of geologists in their great guide.

When Cuvier hastened to Oxford, in 1818, one of the jaws described in Mr. Owen's paper, and in the possession of Dr. Buckland, he decided that it was allied to the Didelphys ("se mi semblent de quelqu"e Didelphie "); and when doubts were raised by M. Constant Prevost, in 1824, related to the tissues in a paper entitled *Examen de la structure en un squelette de Trichosurus*, of examining a drawing made for the express purpose, was confirmed in his former determination; but he added that the jaw differs from that of all known carnivorous Mammalia, in having ten molars in a series in the lower jaw (cf. the drawing) he confirme dans une race que la premiere inspection m'eu avoit donnee. C'est celle d'un petit carnassier dont les macheulides ressemblent beaucoup a celles des sarigues; mais il y a dix de ces dents en serie, le molar superieur monstre aucun carnassier connu." *Oeuv. Phil.*, v. 349, note 1. It was to be regretted that the particular data, with the exception of the number of the teeth, on which Cuvier based his opinion, were not detailed; but he must have been well aware that the grounds of his belief were insufficient, or at least, he must have a characteristic of a competent anatomist: it is also to be regretted that he did not assign to the fossil a generic name, and thereby prevent much of the reasoning founded on the supposition that he considered it as belonging to a true Didelphys.

The recent marsupials the angle of the jaw is elongated and bent inwards in the form of a process, varying in shape and development in different genera. In looking therefore directly upon the inferior margin of the marsupial jaw, we see, in place of the edge of a vertical plate of bone, a more or less convex surface; flattened and dilated, and placed between the external ridge and the internal process or inflected angle. In the Opossum this process is triangular and trigeminal, and directed inwards with the point slightly curved upwards and extended backwards, in which direction it is more produced in the small than in the large species of Didelphys.

Now, observed Mr. Owen, if the process from the angle of the jaw in the Stonesfield fossil had been simply continued backwards, it would have been a conical condyle; and the convex form of it must have been produced inwards or medially, as in the Opossum.

Mr. Owen then described in great detail the structure of the teeth, and showed, in reply to M. de Blainville's second objection, that they are not confined with the jaw, but are connected by a distinct colour from the teeth of the jaw, but evidently of the same nature as the matrix; and secondly, that the teeth cannot be considered as presenting an uniform compressive tricuspid structure, and being all of one kind, as M. de Blainville states, but must be divided into two series as regards their composition. Five if not six of the posterior teeth are quinque cuspidate, and are molares veri; some of the molares spurii are tricuspid, and some biicuspid, as in the Opossums. An interesting point in the fossil was that the five cusps of the tubercular molares are not arranged, as had been supposed, in the same line, but in two pairs placed transversely to the axis of the jaw, with the fifth cup anterior, exactly as in the Didelphys, and in contrast to the usual placement of the molares in any of the Phocidae, to which these very small Mammalia have been compared; and in reference to this comparison Mr. Owen again called attention to the value of the character of the process continued from the angle of the jaw, in distinction from the molares, and the location of them from the Phocidae, in none of the species of which is the angle of the jaw so produced. The Thylacotherium differs from the genus Didelphys in the greater number of its molares, and from every other quadruped known to the sciences, when Cuvier endeavored of the structure of the fossil. This difference in the number of the molars, which Cuvier urged as evidence of the generic distinction of the Stonesfield mammiferous fossils, has since
been regarded as one of the proofs of their Saurian nature; but the exceptions by excess to the number seven, assigned by M. de Blainville to the molar teeth in each ramus of the lower jaw of the insectivorous Mammalia, are well established and have been long known. The insectivorous Cetacea, again, demonstrate the fallacy of the argument against the mammiferous character of the Thylacotherium founded upon the number of its molar teeth. From the occurrence of the above exceptions in recent placental Carnivora, the exigency of the number of molar teeth in the marsupial fossil ought rather to have led to the expectation of the discovery of a similar case among existing Marsupials, and such an addition to our zoological catalogues has, in fact, been recently made. In the marsupial described by Mr. Waterhouse under the name of Myrmecobius an approximation towards the dentition of the Thylacotherium is exemplified, not only in the number of the molar teeth, which is nine on each side of the lower jaw in the Myrmecobius, but also in their relative size, structure, and disposition. Lastly, with respect to the dentition, Mr. Owen says it must be obvious to all who inspect the fossil and compare it with the jaw of a small Didelphys, that, contrary to the assertion of M. de Blainville, the teeth and their arrangement of number and position is with as much probability to be one as in the other, and that no argument of the Saurian nature of the fossil can be founded on this part of its structure.

With respect to M. de Blainville's assertion that the jaw is compressed, Mr. Owen stated that the indication of this structure near the lower margin of the jaw of the Thylacotherium is not a true suture, but a vascular groove similar to that which characterises the lower jaw of Didelphys, Opossum, and some of the large species of Sorex. (Geol. Proc.)

Some discussion having ensued, in which Dr. Grant and Mr. Ogilby expressed opinions in support of M. de Blainville's views, Mr. Owen, on the occasion of reading, on the 9th of December following, his paper on Phascolotherium, being the second part of the Report of the Royal Society of Mammalia from the Stonesfield slate, gave a brief summary of the characters of the Thylacotherium, described in the first part of the memoir, and which he conceived fully proved the mammiferous nature of that fossil. He stated that the remains of the split condyles in the specimen demonstrate their original convexit form, which is diametrically opposite to that which characterises the same part in all reptiles and all carnivora;—that the size, figure, and position of the condylar processes are such as never yet existed in any except a zoophorous mammal endowed with a temporal muscle sufficiently developed to demand so extensive an attachment for working a powerful carnivorous jaw;—that the teeth, composed of dense ivory with crown studded with a thick coat of enamel, are everywhere distinct from the substance of the jaw, but have two fangs deeply embedded in it;—that these teeth, which belong to the molar series, are of two kinds; the hinder being bristled with from five cuspis, four of which are placed in pairs transversely across the crown of the teeth, and the anterior or false molars, having a different form, and only two or three cusps—characters never yet found united in the teeth of any other than a zoophorous mammiferous quadruped;—that the general form of the jaw corresponds with the preceding more essential characters, of its mammiferous nature. Fully impressed with the value of these characters, as determining the class to which the fossil belonged, Mr. Owen stated that he had sought in the next place for secondary characters which might reveal the group of Mammalia to which the remains could be assigned, and added that he had found a confirmation of the same character of the jaw, combined with the form, structure, and proportions of the teeth, sufficient evidence to induce him to believe that the Phascolotherium was a marsupial quadruped.

Mr. Owen then recapitulated the objections against the mammiferous character of the Thylacotherium raised by his supposed imperfect state, and repeated his former assertion that they are in a condition to enable these characters to be fully ascertained: he next reviewed, first, the differences of structure in respect to the actual structure of the jaw; and, secondly, with respect to the interpretation of assumed appearances.

1. As respects the structure.—It has been asserted that the jaws must belong to cold-blooded vertebrata, because the teeth are too small, and the inclination of the molar angle: so which Mr. Owen replied, that the articulation of the teeth is a mode of insertion on a convex condyle, which is met with in no other class of vertebrata except in the Mammalia. Again, it is asserted that the teeth are all of an uniform structure, as in certain reptiles; but, on reference to the fossils, Mr. Owen stated that it will be found that such is not the case, and that the actual difference in the structure of the teeth strongly supports the mammiferous theory of the fossils.

2. With respect to the argument founded on an apparent similarity in the general structure of the teeth, Mr. Owen stated that the Thylacotherium having eleven molars on each side of the lower jaw is no objection to its mammiferous nature, because among the placental Carnivora the Canis lupus has constantly one more grinder on each side of the lower jaw than the Thylacotherium; among the Insectivora, has eight instead of seven molars in each ramus of the lower jaw; and the Myrmecobius, among the Marsupialia, has nine molars on each side of the lower jaw; and because some of the insectivorous genera, such as the zophaerous genus Nomina, have numerous and reptile-like teeth, with all the true and essential characters of the mammiferous class. The objection to the false molars, having two fangs, Mr. Owen showed was futile, as the greater number of the spurious molars in every genus of the placental Carnivora have given rise to numerous and reptile-like teeth, with all the true and essential characters of the mammiferous class. The objection to the false molars, having two fangs, Mr. Owen showed was futile, as the greater number of the spurious molars in every genus of the placental Carnivora have given rise to numerous and reptile-like teeth, with all the true and essential characters of the mammiferous class.

In reply to the objections founded on the double fangs of the Thylacotherium, Mr. Owen said, that the character of double fangs was not exclusive to what class the animal belonged; and in answer to the opinion that certain sharks have double fangs, he explained that the widely bifurcate basi supporting the tooth of the shark is no part of the actual tooth, but true bone, and ossified parts of the jaw itself, so that the doubled fangs have never been lost at one part, and the ligaments of connection attached at the other. The form, depth, and position of the sockets of the teeth in the Thylacotherium are precisely similar to those in the small Opossum, as the color of the fossils show. Mr. Owen said, could be no objection to those ascribed with the diversity in this respect, which obtains in the skull remains of Mammalia. Lastly, with respect to the Thylacotherium, he added that the only trace of compositional structure and therefore no vestige of a marsupial margin, and that a similar structure is present in the corresponding part of the lower jaw of some species of Opossum, of the Wombat, of the Balena antarctica, and of the Myrmecobius, though the groove does not reach so far forward as in a similar groove in the lower margin, but on the outer side of the jaw, in the Sorex Indicus.

Phascolotherium. (Owen.)

Description of the Half-Jaw of the Phascolotherium. This fossil is a right ramus of a jaw, having an internal or mesial surface exposed. It once formed the chief ornament of the private collection of Mr. Broderip, by whom it has since been liberally presented to the British Museum. It was described and figured by Mr. Broderip (1822), with the provisional name of Didelphys fossa.
in the Zoological Journal, and its distinction from the Thylocotolithium clearly pointed out. The conoid of the jaw is entire, standing in bold relief, and presents the same form and degree of convexity as in the genera Didelphys and Dasyurus. In its being on a level with the molar teeth, it corresponds with the marsupial genera Dasyurus and Thylocynus, as well as with the placental zoophaga. The general form and proportion of the coronoid process closely resemble those in zoophagous Marsupials; but in the depth and form of the entering notch, between the process and the conoid, it corresponds most closely with the Thylocynus. Judging from the fracture, the anterior ramus of the anterior extremity of the fractured base of the inflected angle obliquely downwards to the broken surface of the anterior part of the jaw. Whether this line be due to a vascular impression or an accidental fracture is doubtful; but as the lower jaw of the Wombat presents an impression in the precisely corresponding situation, and which is undoubtedly due to the presence of an artery, Mr. Owen conceives that this impression is also natural in the Phascolothere, but equally unconnected with a compound structure of the jaw; for there is not any suture in the compound jaw of a reptile which occupies a corresponding situation.

The most numerous, the most characteristic, and the best-marked suture in the compound jaws of a reptile are those which define the limits of the coronoid, articular, angular, and infradentary portions, and can be definitely distinguished. These processes are compound, and indisputably continuous, and confluent with the rest of the ramus of the jaw. So that where sutures ought to be visible, if the jaw of the Phascolothere were composite, there are none; and the hypothetical sutures that are apparently in position with any of the real sutures of an oviparous compound jaw.

Lastly, with reference to the philosophy of pronouncing judgment on the Saurian nature of the Stonesfield fossils from the appearance of their sutures, Mr. Owen offered one sagacious remark, the judiciousness of which, he said, would be obvious alike to those who were and to those who were not conversant with comparative anatomy. The accumulative evidence of the true nature of the Stonesfield fossils, afforded by the shape of the conoid, compound structure of the jaw, different kinds of teeth, shape of their crowns, double fangs, implantation in sockets,—the appearance, he repeated, presented by these important particulars cannot be due to accident; while those which favour the evidence of the compound structure of the jaw may arise from accidental circumstances. (Geol. Proc., 1838-39, vol. iii.)

Jaw of Phascolothliean. Upper figure magnified.

A paper was afterwards read, entitled Observations on the Structure and Relations of the Presumed Marsupial Remains from the Stonesfield Limestone, by William Ogilby, Esq., F.G.S.

These observations were intended by the author to embody only the most prominent characters of the fossils, and those essential points of structure which necessary related to the class of mammifers or of reptiles respectively. For the sake of putting the several points clearly and impartially, he arranged his observations under the two following heads:

1. The relations of agreement which subsist between the fossils in question and the corresponding bones of recent Marsupials and Insectivora.
2. The characters in which the fossils differ from these families. Mr. Ogilby confined his remarks to Marsupialia and Insectivora, because it is to these families only of Mammalia that the fossils have been considered by anatomists to belong; and to the interior surface of the jaw, as the exterior is not exhibited in any of the fossil specimens.

1. In the general outline of the jaws, more especially in the structures of *Didelphys (Phascolotherium) Buchlandii*, the author stated that there is a very close resemblance to the jaw in recent Insectivora and insectivorous Marsupials; but he observed that with respect to the uniform curvature along the inferior margin, Couvier has adduced the same structure as diastemal in the condyle and the external border of the condyle, and to some extent among the Suidae; so that whatever modifications of structure may give to the question respecting the marsupial nature of the Stonyfield fossils, as compared with other groups of Mammals, they do not affect the present question of their marsupial nature, as shown in the external border of the condyle, and to some extent among the Suidae; so that whatever modifications of structure may give to the question respecting the marsupial nature of the Stonyfield fossils, as compared with other groups of Mammals, they do not affect the present question of their marsupial nature, as shown in the external border of the condyle, and to some extent among the Suidae.

Mr. Ogilby states, in conclusion, that the fossils present so many important and distinctive characters in common with Mammals on the one hand, and cold-blooded animals on the other, that he does not think naturalists are justified at present in pronouncing definitely to which class the fossils really belong. (Geol. Proc., 1833-39, vol. iii.)

On the 9th of January, 1839, Mr. Owen proved, in a paper read to the Geological Society, that the so-called *Bucephalodon* (or *Harlan*) was a reptile and the other objects, thinking it to be a fossil reptile with double-fanged teeth, had relied so strongly as an argument for the non-mammiferous nature of the Stonyfield jaws, as the lover of all, but a mammiferous animal formula of the lower jaw of *Bucephalodon*; the former linking link in the series of mammiferous animals, and in compliance with the suggestion of Dr. Harlan, who, having compared with Mr. Owen the microscopic structure of the teeth of the *Bucephalodon* with those of the *Dysonium*, he observed, that the correctness of the inference respecting the mammiferous nature of the *Bucephalodon*, Mr. Owen proposed to substitute for the name of *Bucephalodon* that of *Zygolodon*. (Whales.)

Among the fossil remains collected by Sir Thomas Livingstone Dyce, in the caves of Wellington Valley, Australia, and which are now deposited in the museum of the Geological Society of London, Professor Owen describes the following genera and species:

**Macropus**

*Macropus Alta*, at least one-third larger than the *Macropus major*, the largest known existing species of Kangaroo, is the species of permanent spurious molar to *Hypsiprymnthus*.

*Macropus Titan*, as large as the preceding, differing chiefly in the smaller size of the permanent spurious molar, which in this respect more nearly corresponds with the existing *Macropus major*. (Hysiprymnthus.)

An undetermined species, it is larger than any of the three species with whose crania Mr. Owen has had the opportunity of comparing them. There is no evidence, according to him, that it agrees with any existing species.

**Phalangista**

A species differing from *Phalangista Vulpes* in having the spurious molar of relatively smaller size, and in the arch of the jaw which is placed one line deeper in the fossa. Mr. Owen also states, in the opinion of the author that the fossils belong to insectivorous or marsupial mammals, in the nature and arrangement of the teeth. The number of the molar, he conceives, is a secondary consideration; but he is convinced that the external border of the fossa is true and false, as in Mammals; the great length of the fangs, equal to at least three times the depth of the crowns, he conceives, is a strong objection to the fossils being placed in that class, as it is a character altogether peculiar and uncharacteristic; the teeth of the molar also, he stated, cannot be justly compared to that of any known species of marsupial or insectivorous mammifer, being, in the author’s opinion, simply triunepd, and without any appearance of inferior lobes. As to the canines and incisors, Mr. Ogilby said that the teeth in *D. Buchlandii*, which has been called a canine, is not larger than some of the presumed incisors, and that the teeth are separated as to occupy full five-twelfths of the entire dental line, while in the *Dysonium grandissimum* and other species of insectivorous Marsupia they occupy one-fifth of the same space. Their being arranged longitudinally in the same line with the canines, he conceived another objection, because, among all mammals, the incisors occupy the front of the jaw, and stand at right angles to the line of the molars. With respect to the supposed compound structure of the teeth of the incisors, Mr. Ogilby offered no formal opinion, but contented himself with adding that the appearances: he nevertheless objected to the gnaws being considered the impression of blood-vessels, though he admitted that the form of the jaws is altogether different from that of any known species of *Hyracodon*, or Diprotodon. (N. G. Owen.)

Mr. Owen applies this name to the genus of Mammalia represented by the anterior extremity of the right ramus of the lower jaw, with a single large procumbent incisor, of which we give a reduced figure below (a, b). It had been formerly conjectured to belong to the *Dysonium*, but the incisor resembles the corresponding teeth of the *Mammal*. Digitized by Google
in its enamelled structure and position (a), and the section of the Wombat's teeth. It differs however in the quadrilateral figure of its transverse section, in which it corresponds with the inferior incisors of the Hippopotamus.

Anterior extremity of the right ramus, lower "sw", of Diprotodon. (W.)

Dasyurus.

Dasyurus lanarius, closely resembling Dasyurus Ursinus, but differing from it in being one-third larger, and in having the canines or fangs two or three times larger. Another specimen leads Mr. Owen to doubt whether it is the lower jaw of the Dasyurus lanarius, or of some extinct marsupial carnivore of an allied but distinct species.

The general result of the examination of the remains found in the Wellington Valley bone-caves are,—1st. That the fossils are not referrible to any known extra-Australian genus of mammals. 2nd. That the fossils are not referrible, from the present evidence, to any existing species of Australian mammal. 3rd. That the greater number certainly belong to species either extinct or not yet discovered living in Australia. 4th. That the extinct species of Macropus, Dasyurus, and Phascolomyys, especially Macropus Atlas and Titan, are larger than the largest known existing species. 5th. That the remains of the salutary animals, as the Macropus and Hypsiprymnodon, are all of young individuals; while those of the burrowing Wombat, the climbing Phalanger, and the ambulatory Dasyure, are the remains of adults. (Owen, in Mitchell's Three Expeditions into the Interior of Eastern Australia, &c.)

Dr. Buckland observes, that the discovery of the Marsupialis, both in the secondary and tertiary formations, shows that this order, so far from being of more recent introduction than other orders of Mammalia, is in reality the first and most ancient in its commencement. A member of this class appeared upon our planet,—that, as far as we know, it was their only form during the secondary period,—that it was co-existent with many other orders in the early parts of the tertiary period; and that its geographical distribution in the present creation is limited to North and South America, and to New Holland, with the adjacent islands. (Bridgewater Treatise.)

MARSUPIOCRINITES, a genus of Crinoidae, recently proposed by Professor Phillips for some remarkable fossils noticed by Mr. Murchison in the strata of the Silurian system. (The Silurian System, p. 16, f. 3.) The arms are formed of two rows of calcareous platelets. [MARSUPIOCRINITES, vol. i. p. 393.]

MARSUPIALIS, a fossil genus of Echinodermata, established in his work on the Crinoidea. In many respects it resembles the Crinoidea, but has no stem. [Echinodermata, vol. i. p. 393.] It belongs to the chalk. [MARTABAN. (TENASCIRRUM.)]

MARTEL, CHARLES [CARLELS MARTEL].

MARTHEL TOWER, a peculiar building of masonry, generally two stories high; the lower story is divided into chambers for the reception of stores, and the upper serves as a casemate for troops; the roofs are vaulted, and that of the upper story is shell-proof. The wall of the building is carried above in a parapet; and on the terreplein of the roof, are placed pieces of artillery which rest on platforms of timber traversing on pivots, so that the guns are capable of being fired in any direction. The entrances are at a considerable height above the ground, and over these are machiolations. The whole work is generally surrounded by a ditch and glacis.

It is probable that the name of such works should be Mortella Towers, since it is supposed to have been derived from that of a fort in Mortella (Myrtle) Bay,Corsica, which after a gallant resistance which animals of orders. Several such towers were, during the late war, built on the coasts of this country, in Jersey, and elsewhere; but most of them have, since the peace, been taken down, from an opinion that the defence which could be made from it and the time of its duration would not be adequate to the expense of keeping them in repair.

MARTEN, or MARTIN (Mammalogy), the name of a carnivorous quadruped (Mustela Martes, Linn.), of the Weasel family. (WASSELL.)

MARTIAL LAW. [MASSACHUSETTS.]

MARTIAL LAW is a series of regulations made to preserve order and discipline in the army, and enforced by the prompt decisions of courts-martial; this is generally how called military law. During the existence of a rebellion, when, in consequence could not be orderly; and cases of general law becoming ineffectual for the security of life and property in any province or state, the legislature has appointed that a military force shall be employed to suppress the disorders and secure the safety of the people; and the latter, as it is liable in the practice of military courts, that province or state is said to be subject to martial law.

On the occurrence of such a calamity in any part of the British dominions, the troops belonging to the army, and in the course of its duties, is commanded to suspend the provisions of the deeree. The act by which martial law was declared in Ireland during the Rebellion in 1798 may be seen in Tyler's Essay on Military Law, Appendix, No. 6.

A merely local tumults the military commander is called upon to act with his troops only when the civil authorities have failed in preserving peace; and the responsibility of employing soldiers on such occasions falls entirely upon the magistrate. The military officer must then effect by force what, by other means could not be done; and he, consequently, should be answerable only to a military court or to the parliament of the nation.

The constitution of this country permits a military law for the government of the army, even in times of internal insubordination, in conjunction with the general law of the land. But the former applies to military persons only; among these its jurisdiction comprehends all matters relating to the discipline of the army, to the cognizance of which the civil courts are incompetent—orders, parades, &c.; and extends to such crimes as desertion, mutiny, and holding correspondence with the enemy. On the other hand, every citizen who is not engaged in the military profession is subject to the general laws of the land alone, and is free from all the restrictions which, by the necessity of preserving discipline, are imposed on the soldier: he is his own master, he can dispose of his time at pleasure, and the peculiar regulations of the military service are, to him, as though they did not exist.

This distinction between the two classes of persons with respect to military law is clearly expressed in the Mutiny Act: as it is called, which was first passed in the reign of William III. It is there stated that the subjects of this realm cannot be punished in any other manner than conformably to the common laws of the land: in case of the exception is immediately made in the case of military persons; and there follow several enactments for the purpose of bringing soldiers who shall mutiny, excite sedition, or desert from the service, to a moreemplaus and speedy punishment than the ordinary criminal law of the nation.

Immediately after the Norman conquest of this country the military law consisted in the obligation imposed on the vassals of the crown to follow the king to the field, under penalty of procuring them, his licence to their tenantry. But the first record concerning the regulations of the army is believed to be that which was made in the reign of King John; and this relates chiefly to the purchase of provisions at the sales held for supplying the army with necessaries. The ordinances of Richard II. and of
Henry V, and the statutes of Henry VIII, contain many useful rules for the government and discipline of the army; they prescribe obstructions to the king and the commanders; they award punishments for gaming, theft, and other crimes; for raising false alarms in the camp, and for the seizure of religious persons. They also contain regulations concerning the disposal of prisoners taken in battle, and concerning the treatment of soldiers in military operations, with which the soldiers were to provide themselves. (Grose, vol. ii.)

The early kings of this country do not appear to have exercised, generally, a discretionary power over the army; for Edward I. stipulated that the king had no power to punish soldiers only according to the laws of the realm. The court of high constable and high marshal of England had for many years an exclusive jurisdiction in all military affairs, and this was sometimes extended over civil causes. Richard II. restricted the jurisdiction of the court according to a statute in the reign of Richard II. (1396), and it subsequently expired. From the time of Henry VII. till the reign of Charles I. the enactment of laws for the government of the army depended on the king alone.

The exception to the last-mentioned reign, were committed by the undisciplined army which that ill-trained prince quartered on such of the people as had refused to lend money to the crown for raising them, led to the proclamation of a law, by which power was given to the magistrates to arrest and execute persons guilty of murders, robberies, and other crimes, as in time of war. The petition of right abolished martial law for a time in this country, but it was subsequently restored by the parliament of 1642, and the statutes of great severity against the interregnum enacted respecting the maintenance of discipline. In the beginning of the reign of James II., after the rebellion of the Duke of Monmouth, several executions took place by martial law; and this may be said to have been the last occasion on which the law was exercised in Great Britain. At the time of the Revolution, the present regular code was established for the government of the army; and this, under the name of the 'Mutiny Act,' has ever since been annually renewed by parliament.

MAURITIUS, MAURUS VALERIUS, was a native of Bibbils [Biliblis], in Spain, where he was born on the Calenda of March, about the year 40 A.D. Very few particulars of his life are ascertain'd, and even these are principally collected from his own writings. He came to Rome at an early age, and was appointed about the age of 20 years of age for the study. He left Rome probably about the commencement of Trajan's reign, and retired to his native town. The emperor Titus appears to have been his first imperial patron. Domitian, the successor of Titus, gave him the 'ludus scribonianus' of the emperor Lucius Licinius Lucullus, and Domitian, and, as some critics suppose, may not be altogether the work of Martial. The whole collection contains above 1300 epigrams.

Many of the epigrams of Martial belong to that class of compositions which are now known by the name of epigrams, a term which is generally reserved for a particular species of that species of composition: they are short pieces, varying in length from two lines to four, six, or more, the point of which is generally contained in the last line. Like modern epigrams, they are generally occasioned by the writer's love for dainty or laboured, and the whole meaning sometimes obscure. Other of his compositions belong to that class more properly called epigrams (Epigramma), according to the original signification of the term, and are often characterised by great facility of expression; they are in a great variety of subjects, and contain much matter that needs and requires comment. There is perhaps no Roman writer extant whose works, if well studied, would be so useful as Martial in illustrating the period to which they belong. Among his works are Bibbils and the river Salo (Sala), which flows through Bibbils, and several other pieces, show a taste for a country life, and a poetic vein hardly inferior to that of Horace (i. 50, 64). The tenth book of his 'Epigrams' was published after his return to Bibbils (vii. 3).

Many of the epigrams of Martial are as gross and obscene as thought and expression can make them: as to which it may be sufficient to remark that the manners of his age did not forbid the publication of obscene poetry, and that in the last period of the republic there was no worse example of licentiousness. In the Delphic epitaph, the most obscene epigrams have been carefully selected and placed together at the end of the work, for reasons which, as there given, do not appear very satisfactory.

These and translations of Martial are very numerous. There are several English translations, the latest of which, so far as we know, is that by James Ephesianus, London, 1782.

MARTIGUES, L.E.S., a town in France in the department of Var, on the Rhone, on the communication between the Etang or lake of Martigues, and Berre, and the sea. It consists of three parts communicating with each other by bridges: the most ancient part, called the Isle, is on an island in the mud channel; the other, called the Port, is on either side of the mouth of the Rhone, south-east and north-west banks respectively. The streets are generally well laid out and the houses neatly built. The banks of the channel are lined with quays. There are a spacious and regularly built town-hall and a handsome church.

The population in 1851 was 5335 for the town, or 7379 for the whole commune; the inhabitants are engaged in seamen, or in the manufacture of hats, in ship-building, and in the fishery on the lake. They export oil, wine, salt, and a great quantity of fish. The fish of the Mediterranean coast are particularly good, and the lake, where the greater part are taken by the fishermen.

MARTIN (Ornithology), the name for some of the Swallow tribe, as the House Martin (Hirundo rustica), the Bank or Sand Martin (Hirundo riparia), and the Black Martin or Swift. (Swallows.)

MARTIN I., a Tuscan by birth, succeeded Theodore L. in the see of Rome, A.D. 649. He held a council of Italian bishops in the Lateran church, in which the Monothelites were condemned. The emperor Constans II., who favored the Monothelites, sent troops to Rome for the purpose of seizing the person of the pope. Martin was taken to Constantinople, where a judicial inquiry was instituted against him for disobedience to the emperor, and he was banished to the Thracian Chersonesus, where he died in 653. He was succeeded by Adrian III.

MARTIN II., called by some Martinus L, succeeded John VIII. in 882, and died in 884. He was succeeded by Adriam III.

MARTIN III., called by some Martinus II., a Romano by birth, succeeded Stephen VIII. in 924. He died in 946, and was succeeded by Agapitus II.

MARTIN IV., cardinal Simon de Brie, a native of France, succeeded Nicholas III. in the papal chair in 1281. He was high in the favour of Charles of Anjou, king of Sicily and Naples. The Sicilian Vespers led to his fall. He then took a strong and hostile stand against Charles of Sicily, Martin communicated Peter of Aragon, whom the Sicilians had elected king, but his communication was of no more avail than the arms of the Angoumois. He next bad both Martinus and Martinus succeeded by the Byzantine emperor Michael VIII, whom Martin denounced in a council of Constance, in April, 1417, without having effected the reforms in the church which were expected from it by Europe in general. Martin however promised to call together a new council for the purpose, which, after much delay met first at Siena and afterwards at Basle in Switzerland.
MARTINI, GIUSEPPE SAN, a composer of distinguished merit, and a most celebrated performer on the clavecin—an instrument which he may be said to have civilised—was a native of Milan, and was born in 1743. He was soon engaged at all the public and private concerts, and in 1740 was taken into the service of the Prince of Wales, and received the appointment of music-master to the princesses. His Twelve Sonatas for two violins and violoncello were highly praised, and his sets of sonatas for the organ, but his best work is his Concertos for a full band, which display great invention, very elegant taste, and a thorough knowledge of his art. He died in 1750.

MARTINU, MARTINO, commonly known as Martini of Madrid, was born at Valencia in Spain, about the year 1750. He was Maestro di Capella to the prince of Asturias, in 1756, and has always been thought one of the most agreeable composers of Italian operas. Among his works is L'Arbore del Signor Spagnoletto, La Costa Rara, produced about the same time, both of which have been everywhere popular, particularly the latter, which is well known on our English as well as on the Italian stages, Stephen Storace having introduced most of it in Carl's opera, the Messiah.

MARTINUQUE, or Martinico, one of the largest of the Caribbe Islands, is 10 leagues south-south-east of Dominica. The greatest length is 50 miles from north-west to south-east, and the mean breadth is about 16 miles; in 15° 44' N. lat. and 61° 14' W. long., and the latter in 14° 35' N. lat. and 61° 9' W. long. Port Royal, the residence of the governor, stands on the north side of a deep and well sheltered bay, protected by a fort which covers the whole surface of a peninsula and commands the town and harbour. During the war it was in possession of the English, Port Royal was the general rendezvous and head-quarters of the fleet stationed in the West Indies. The Diamond Rock, which is about three leagues south-south-east of Port Royal bay, was taken possession of by the English between the breaking out of the war in 1602 and the capture of the island in 1810, and was commissioned and rated as a sloop of war in the British navy. Saint Pierre is an open roadstead, affording very good shelter, and about three leagues west of the place of trade in the island, and is said to be the handsomest town in the West Indies. It consists of three spacious streets parallel to the beach, and several transverse streets. Streams of water are conveyed through the principal streets, and impart a salubrity of freshness to the air most desirable in so warm a climate.

The population of the island in 1834 consisted of 36,766 whites and free coloured persons, and 78,233 slaves: together 114,999.

The staple production of the island is sugar, of which it yielded in 1834, 28,692 tons, besides 874 tons of molasses and 365,600 gallons of rum. There were also grown about 600 tons of coffee, and small quantities of cotton, cocoa, and cacao. The total value of the imports in that year was 36,000$, and of the exports 44,000$. The number and tonnage of ships that arrived and sailed were:

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The foreign vessels were chiefly craft from the neighbouring English colonies; the rest were Americans. Martindsight was first settled by a part of about 100 men headed by a French planter, M. Desnambre, from St. Christopher, in 1633. The island was at that time peopled by Caribs, but in the course of a very few years they were exterminated. It was taken in 1762 by the English, but was restored to Spain in 1763. In 1794 it was again taken by the English, and again restored to France at the peace of Amiens. It was once more cap
tured by the English in 1810, and finally restored by
the treaty of Paris in 1814, since which time it has remained
under the dominion of France. At the beginning of the
present year (1839) the island suffered the shock of an
earthquake, which did considerable damage to the
town of St. Pierre, and destroyed wholly Port Royal, in which
town upward of 500 persons were killed by the falling
of the buildings, including nearly all the inmates of the
principal hospital. The works and the negro villages of many
of the sugar plantations were destroyed by the same
shocks.

MARTLET. [HERALDRY]
MARTOS, IVAN PETROVITCH, director of the Aca-
demy of Fine Arts, St. Petersburg, was not only the most
eminent sculptor Russia has yet produced (and she has
given birth to a Prekopiiev and a Kovalsky), but one who
would have ranked high in almost any age or country.
The number of his works is very considerable, and among
the more important are the following public monuments:
among others, the bronze colossal group of the patriot Minin and Poz-
be the statue of the duke of Richelieu, at Odessa; Potemkin's monument, at Cherson; and that
erected in honour of Lomonosov, at Arkhangels.
Marters has been styled the Canova of Russia; and while some
have gone so far as to rank him among the great Italian sculptors, those who
consider Martos the greatest Italian artist in point of refined elegance and high
finish, assert them to be free from that mannerism and over-studied gracefulness
which were Canova's defects. It has been further admitted that they do not even equal
point of pure beauty, if that be defined as the charm of loveliness, although on the other hand they stand the test of a
critical scrutiny much better. Their characteristics are
nobleness of conception, truth of expression, and freedom,
without negligence, of execution. In the draping of his figures
one often observes a superlative grace that
served him, he had a particular talent for bas-relief subjects. One of
the most admired of these is that which adorns the
monument of the grand-duchess Helena Paulovna, and which
reminds one of an exquisite and exquisitely
an extinguishing torch. Martos died
April 17th, 1835, becoming the
first sculptor to die in Russia.

MARTYR, HENRY, known as The Missionary, born
1781, died 1812. The short life of this amiable and serious
man may thus in brief be delineated. His birth was obscure. He was the son of a person who had been a laborer in the
mines at Gwennap in Cornwall, but who was probably a
person of talent and virtue, as he raised himself to the
situation of clerk to a merchant at Truro, in which town
Henry Martyn was born. He had his education in the
gymnasia, and had himself a considerable share of grammar learning, he tried for a scholarship in
Corpus Christi College, Oxford; but failing in this, in 1797 he entered Saint John's College, Cambridge. Here
he pursued his studies with such energy, that in 1801 he
capacitated himself to be a clergyman. During his
mind became directed with more than common earnestness
to the truths of revelation. The death of his father is thought
to have affected him at this period of his life so deeply as to
have had no small share in turning his thoughts into the
channel in which from this time they continued to flow;
and not less the intimacy which at this time began with the
Rev. Charles Simeon, the celebrated evangelical preacher
in the university of Cambridge. He was chosen fellow of
St. John's in March, 1802; but out of zeal in the cause of
religion, he finally determined to devote himself to the work
in which many of his countrymen had by that time begun to
give themselves, of propagating Christianity in nations which had not received it. There had been, it is true, a Soci-
ety established for this purpose, the Society for the Propagation of the gospel in foreign parts, but a new impulse and a new energy
were given to such operations by the establishment of Mis-
missionary Societies, supported by the Methodists, the Inde-
pendent Dissenters, and by the Evangelical party in the
church. Dissenter. He was not content with supporting this
object by his influence at home, but he proposed himself to
the African and Eastern Missionary Society as a person
willing to undertake the duties of a missionary in the East,
and finally embarked for the Island in 1804.
It now became necessary that he should make himself
master of the languages of the countries which he was about
to visit; and with what success he studied them is evi-
denced by the fact that he had the supervision of the
translations of the New Testament made under the instruc-
tions of the Missionary Society, both into Persian and
Hindustani. He made also some progress in an Ama
translation. In his capacity of missionary he travelled
large tracts both of India and Persia. After five
years' labour in these countries, his health began to decay.
He received at length a summons that he would need a
change of climate, and he was ordered to proceed to Madr,
which he entered, and to which he remained for more than two
years. He died at Madr in 1812, and was buried in the
churchyard of the town. His death was received with the
greatest regret in England; for this event occurred at a
moment when we were not expected from him, and much
would probably have been done by him in the cause to which he had devoted
himself. As it was, he brought not a few both Hindoos and
Mohammedans to make profession of the Christian faith;
and he was the first of a long line of English Evangelical
missionaries among a people who had not previously known them.

An interesting account of his life, compiled from various
Journals left by him, was published by the Rev. John
Sargents, 1819.

MARTYR, JUSTIN. [JUSTIN MARTYR]
MARTYRS, MARTYROLOGY, from the Greek
Martyr or Martyrus (μάρτυρ, μάρτυρα). A witness.
By the term martyr we now generally understand a
person who suffers death rather than renounce his reli-
gious principles. In the early Christian Church, however,
and for the first three or four centuries, he was a person who
by faith and thereby endured sufferings short of death are
called confessors. These terms appear to have been
used in the same sense by some of the early Christian writers,
but others give the title of martyr to all who suffered un-
justly, and in a hostile manner, on account of their
Christian faith. Those who were only imprisoned for its
maintenance are called confessors. Tertullian calls the latter the martyres designati,
martyris elect. The duty of enduring suffering, and even
death, for the sake of religion was plainly taught by Christ and the apostles.
That the name of martyr should be applied, at least through
the Apostles we have several instances of the patience and
even exultation of the first Christians under persecution;
and in some passages martyrs are spoken of with peculiar
honour. (Acts, xxvii. 20; 2 Thess. i. 9; 1 Pet. iv. 13; Rev. iv. 5; v. 1; and Lardner's Works, vol. vii., p. 125, edition of 1831.) We learn from these accounts that martyrs were
highly honoured by the church, but we read nothing of that
intercessory power nor of those extraordinary privileges
which were afterwards conferred on those whose sufferings
honour paid to them is expressed by the writers of the
letters from Smyrna, where they state that the governor was
instructed to refuse their request to have the body of
Polycarp delivered to them, lest they should leave him
as crucified, to worship this man; ....... little considering
that we can never forsake Christ, who has suffered for the
salvation of all men. Him we worship as the Son of God.
The martyrs we love as the disciples and imitators of the Lord. It is less than a century the reverence felt to-
towards martyrs in the church quite a new development.
We learn from the writings of Cyprian, bishop of Carthage
(a.d. 248), that the sufferings of martyrdom were held to
purge away the stain of sin, so that the martyr was admis-
sed at once into reward of perfect purity. martyr were thought to expire with the grace not only
their own sins, but those of other men, and even of the
church; and the fiery baptism of martyrdom was accounted
of equal efficacy with the sacraments of Christ. The
suffering one was to end in beating their measureless
power. If they expired under these tortures, temples
(called martyrum confessiones or sanctuarum) were
built over their graves, yearly festivals were maintained in
their honour, their relics were held sacred and believed
to be the power of working miracles, and their intercession
with God was invoked as being peculiarly powerful. If
their sufferings fell short of death, they had ever after
the highest authority in the church. But these honours appear
sometimes to have had a bad effect on those to whom they
were paid, for Cyprian complains strongly of the disgraceful conduct of some who had been confessors.

In proportion to the honour paid to martydom was the disrespect attached to those who feared it. But here we observe a remarkable difference. In the earliest ages, the Christians, acting upon Christ's command in Matt. x. 23, did not think it disgraceful to avoid persecution by flight; but in later times the glory ascribed to martyrdom induced some to throw themselves in its way. Tertullian wrote a book in which he described a confession and acquiescence in martyrdom when he retired from Carthage during a persecution, did not attempt to defend his conduct by general arguments, but pleaded an express revelation from God as his excuse. In this, he was in common with the apostles, and had the ambition and less steadiness than those of earlier times.

The earliest accounts of Christian martyrdoms, for instance, that of Stephen in the Acts (vii.), are related with the utmost simplicity; but it was not long before the narratives of the deaths of martyrs were adorned with accounts of miracles, which, to say the least, are difficult to believe. This fashion had commenced even in the second century, for we find examples of it in the letter already mentioned, which relates the death of Polycarp. On these miracles Michaelis says that all the Theses of the primitive martyrs seldom failed of being accompanied by miracles, as we find them related in the old Martyrologies, were generally copied from each other: concerning sweet smells issuing from their bodies, and their wonderful resistance to all kinds of poison, and even to the eating of carrion and bruisings, so as to tire their tormentors by the difficulty of destroying them, which yet, after a vain profusion of miracles, was always effected at the last. (Free Enquiry, p. 125, note.)

It is difficult to ascertain the number of martyrs who suffered in the early persecutions. Some writers have made it enormous, others quite insignificant. Among the latter is Dodwell, who has written an elaborate dissertation on the subject, in his Narrative of the Missions of the Church of England to China. Some curious instances in which persons who never existed, heathen deities with their names slightly or not at all changed, and even inanimate objects, have been canonized as saints and martyrs.

The department of ecclesiastical history which relates to the acts and deaths of martyrs is termed martyrology; and a work embracing one or more such narratives is called a martyrology. As examples of this description of works we may mention the Martyrology of John and James Parkinson, translated into English by John Bunyan, and published in London in 1650; and the works of Eusebius and other ecclesiastical writers would lead us to infer that the number of martyrs was considerable, but probably it has been much overrated.

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On his return he began to correspond with his constituents almost every post.

The following passages are characteristic both of the man and the period.

"Nov. 14, 1667.—Really the business of the House hath been of late so earnest daily and so busy, that I have not had the time and scarce vigour left me by night to write to you; and to-day, because I would not omit any longer, I send you mine. I have no letter to you.

Letter to Mayor and Aldermen of Hull.

"April 14, 1670.—The king about ten o'clock took boat with Lauderdale only, and two ordinary attendants, and rowed awhile as towards the bridge; but soon turned back to the Park. Stictly went up to the House of Lords and took his seat. Almost all of them were amazed, but all seemed to, and the duke of York especially was very much surprised. He told them it was a privilege he claimed from his ancestors, to be present at their deliberations. After three or four days' continuance, the lords were very well used to the king's presence, and sent the lord-steward and lord-chamberlain to him to enquire when they might wait as an House on him, to render their humble thanks for the honour he did them. The hour was appointed, and presently the House of Commons, our house gave several bills. You see how far things were stretched beyond reason, there being no satisfaction how those debts were contracted; and all men foreseeing that what was given was not well disposed to decline the debts, which bear are at this day risen to four millions, but diverted as formerly. Nevertheless, such was the number of the constant courtiers, increased by the apostate patriots, who were bought off for that term, some at six, others at ten, one at fifteen, three at pound, in money besides what offices, lands, and reversions to others, that it is a mercy they gave not away the whole land and liberty of England. The duke of Buckingham is again 140,000l. in debt, and, by this progration, his creditors have time to tear all his lands in pieces. The House of Commons has run almost to the end of their line, and are grown extremely chargeable to the king and odious to the people. They have signed and sealed 10,000l. a year more to the duchess of Cleveland, who has likewise near 10,000l. a year to the new farm of new carriages; an estate a year and a half; 5000l. beer in the post-office; and, they say, the reversion of all the king's leases; the reversion of all places in the custom-house, the green wax, and, indeed, what not. All promotions, spiritual and temporal, are ordered by her consent.

In 1672 Marvell engaged in a controversy with Dr. Samuel Parker (afterwards nominated bishop of Oxford by James II.). The following are a few of Parker's opinions, published in 1670, in a book entitled 'Ecclesiastical Policy.'

"It is better to submit to the unreasonable impositions of Nero and Caligula than to hazard the dissolution of the state. Princes may with less hazard give liberty to men's vices than to their consciences. Of the different sects then subsisting he held that 'tenderness and indulgence to such men in their prejudices in our houses of worship, and the most sottish neglect of our own quiet and security."

Marvell's various publications were mostly of a temporary interest. Mr. Dove gives the following account of the close of his career. Marvell had now rendered himself so obnoxious that the Presbyterians, by their presumptuous, James, duke of York, that he was beset on all sides by powerful enemies, who even proceeded so far as to menace his life. Hence he was obliged to use great caution, to appease, in public, and frequently to conceal the place of his abode; but all his care proved in effectual to preserve him from their vengeance, for he died on the 16th of August, 1678, aged fifty-eight years, not without strong suspicions (as his constitution was entire and of the best, he was not suffered toGlasse in danger of poison.

(Life of Andrew Marvell, p. 63, London, 1832.)

Marvell's powers as a poet were not sufficient to ensure him lasting fame. Few or none of his poetical compositions, any more than his prose, obtained a lasting popularity. Many of his verses, particularly the satirical, are dated, not from the coarseness of his time, from which his contemporaries were so remarkably free, but from the false feeling and a perception of the beauty of nature, expressing with a harmony of versification and felicity of language which not unfrequently recall the 'L'Allegrino' and 'I. P. W.'

Marvell bestowed sufficient vitality to secure its continued existence. By saying of himself, with a sort of prophetic truth, in his lines to 'His Coy Mistress,'

"But at my back I always hear/ Time's winged chariot hurrying near/ And yon fond issue now no more/ I must away, it is in nearer song/"

He is not more fond than wise. They beauty shall no more be found. Nor is its marble veil shall sound No. The total production of the district is about 120,000 million.

The surface of the district is gradually mountainous, rising towards the south; some of the mountain chains are quite perpendicular. The altitude is 5000 feet above the level of the sea. European flowers and shrubs are produced on their summits. The country contains many hill forts, and is for the most part subject to the rajah of Jodhpore. The population is partly Mohammedan, and partly Hindu. There are, indeed, these sects, many tribes of unchristianized people, who, by their predatory habits, are frequently troublesome to their more quiet neighbours. The failure of the annual fall of rain in 1811, together with the desolation occasioned by clouds of locusts, spread from east to west, and destroyed great numbers of the inhabitants into the province of Gujerat, which, in the following year, also experienced a failure of rain, and the people died by thousands in a state of the greatest misery, so that it is said scarcely more than 2 millions remained. In 1812, the situation of Marwar contains few towns of any size. Nagore, in 27° 8' lat. and 76° 33' lat. long., stands upon barren sand-hills, with scarcely any vegetation within a mile of its walls. It is one of the best fortified places in the world. The only other town of requiring notice is Jodhpore, then capital and residence of the rajah, in 26° 18' lat. and 73° 5' long. The country has been so little visited by Europeans, that our knowledge concerning it is very scanty. The range of Jodhpore is said to be large and very magnificent building. In 1818, when part of his territory was occupied by the governor-general of India, the rajah of Jodhpore made an arrangement with the English government, under which, in return for our protection, he bound himself to pay an annual sum of 20,000 rupees to furnish a contingent of 1500 cavalry. The entire revenue of the district is estimated at 50 lacs of rupees (500,000l. sterling) but usually falls short of that sum.

MARY, Queen of England, was the daughter of James, Duke of York, and was born at Greenwich, on the 18th (Burnet says 19th) of Feb. 1516. She was the only one of several children born to her mother that lived; and on this account, according to Burnet, and because her father was then 'out of hopes of having more children,' he in 1518 'declared the line of the House of York, the duchy of Wales, and sent her to Ludlow to hold her court there and projected divers matches for her.' It was first settled that she should be married to the dauphin by a treaty with the king of France signed on the 9th of November, 1518, which however was never after broken. Then an arranged, 24th June, 1522, that her hand should be given to the emperor.
Charles V. On Charles declining to fulfil this bargain, some overtures of a Scottish marriage followed in September, 1524. Finally, in April, 1527, it was agreed that the princess should be given in marriage either to the French king Francis, or to his second son, the duke of Orleans; but before it was determined whether she should be married to the father or the son, the death of her mother's divorce, implying her own illegitimacy, came to be agitated, and stopped all match-making for some years.

Mary was brought up from infancy in a strong attachment to the antient religion. The effect of whose instructions was not impaired by the subsequent lessons of the learned Ludovicius Vives, who, though some what inclined to the reformed opinions, was appointed by the king to instruct her; and (it is said) did so. Mary was deprived of her title of princess of Wales, which was transferred to the Princess Elizabeth soon after she came into the world; and during all the time that Anne Boleyn lived, Mary, who clung to her mother's cause and her own, remained in a state of estrangement from her father. In the mean time, according to Lord Herbert, negotiations for disposing of her in marriage were twice entered into by her near relation the emperor, without her father's consent having been asked; in 1533 he offered her hand to the archbishop of Carthage, and in 1536 to the dauphin. But immediately after the execution of Queen Anne in 1536, a reconciliation took place between Henry and his eldest daughter, who, with great reluctance, was now prevailed upon to make a formal acknowledgement both of her father and of his marriage with Catherine. The bishop of Rome's pretended authority, power, and jurisdiction within this realm heretofore usurped—and of the nullity of the marriage of her father and mother, which was very strongly urged—were denounced as erroneous and unlawful. (See the 'Confession of the Lady Mary,' as printed by Burnet, 'Hist. Ref.,' from the original, 'all written with her own hand.') By the new act of succession however, passed this year, she was again, as well as her younger sister Elizabeth, declared entitled to the succession, and, from claiming the inheritance of the crown as the king's lawful heir by lineal descent. While she was thus circumstance, 'excluded,' as Lord Herbert expresses it, 'by act of parliament from all claim to the succession except such as the king shall give her by the powers reserved to him of nominating his own successor after failure of the issue of Queen Jane, or of any other queen whom he might afterwards marry, she was in 1536 offered to Don Louis, prince of Portugal, and the next year to William, son of the duke of Cleves. The offer, however, was rejected by the king, for conformity to all her father's capricious movements in the matter of religion, she so far succeeded in regaining his favour, that in the new act of succession, passed in 1534, the only stipulation was, that she was expressly secured to her next after her brother Edward, and his heirs.

The issue the king might have by his then wife Catherine Parr.

Mary's compliance with the innovations in religion in her father's time had been dictated merely by fear or self-interest; and when, after the accession of her brother, his ministers proceeded to place the whole doctrine, as well as discipline, of the national church upon a new foundation, she openly refused to go along with them; nor could all their persuasions and threats, aided by those of her brother Henry II., move her from her ground. Full deters of the various attempts that were made to prevail upon her may be found in Burnet's 'History,' and in King Edward's 'Journals.' Mention is made in the latter, under date of April, 1549, of a demand for the hand of the Lady Mary by the king of Portugal, who being determined, he should have answer. About the same time it is noted that 'whereas the emperor, King Philip II., desired leave, by letters patents, that may the Lady Mary might be speedily sent to him; and the 18th of March of the following year, the king writes: 'The Lady Mary, my sister, came to me at Westminster, where, after salutations, she was called, with my council, and the chamberlain, who, she said, had long I had suffered her mass, in hope of her recantation, and being no hope, which I perceived by her letters, except I saw some short amendment, I could not bear it. She answered, that her soul was God's, and her faith she must change, nor brook her opinion with contrary doing.' It was said, I constrained not her faith, but wished not as a king to rule, but as a subject to obey; and that her example might breed too much inconvenience.' In fact throughout this reign the princess Mary was the centre of the intrigues of the Catholic party, and the hope of her succession their main strength and support. In the summer of the same year a project was matured into by her friends at home and abroad for removing her from England, where her faith at least, if not her person, was probably supposed to be in some danger. On the 29th of August, her brother, the king, with the council, were prepared to see that there should be no conference over these matters: "The Lady Mary is a sickly and worn-out person." Also appointed that the lord chancellor, lord chamberlain, the vice-chamberlain, and the secretary Perie should see by all means they could whether she used the mass; and if she did, that the laws should be executed on her chaplains.

Mary's firm adherence to the Roman faith finally induced Edward, under the interested advice of his minister Northumberland, to attempt at the close of his life to exclude her from the succession, and to make over the crown by will to the Lady Jane Grey, an act which was certainly without any shadow of legal force. [Edward VI.] Although Lady Jane however was actually proclaimed, scarcely any resistance was made to the accession of Mary, the consequences of whose reign accordingly is dated from the 6th of July, 1553, the day of her brother's death. [Grey, Lady Jane.]

Mary was scarcely seated on the throne when she proceeded to re-establish the antient religion. In the course of the next months a vast number of the bishops, who had been deposed for non-conformity in the late reign, were restored to their sees, and the mass began again to be celebrated in many churches. In the following month archbishops Cranmer and bishop Latimer were committed to the Tower, and in November the pope passed an act repealing all the acts, nine in number, relating to religion, that had been passed in the late reign, and replacing the church in the same position in which it had been in the time of Edward VI. On the other indications given by the course of a determination to be completely reconciled with Rome, were followed by the insurrection, commonly known as that of Sir Thomas Wyatt, its principal leader, which broke out in the end of January, 1554, but was in a few days effectually put down and its suppression being signified by the executions of the unfortunate Lady Jane Grey and her husband the Lord Guildford Dudley, of her father the duke of Suffolk, and finally, of Wyatt himself.

In the 25th of July, Mary was married in the cathedral church of Winchester to the prince of Spain, afterwards Philip II., the son of the emperor Charles V.; and the union with Rome was speedily completed by a parliament which assembled in the beginning of November, and which enacted acts repealing the acts of the late reign. This act was immediately after arrived in England with the dignity of papal legate, restoring the authority of the pope, repealing all laws made against the see of Rome since the 20th of Henry VIII., reviving the ancient statutes against heresy, and in short re-establishing the whole national system of religious policy as it had existed previous to the first innovations made by Henry VIII. By one of the acts of this session of parliament also Philip was authorised to take the title of king of Spain during the queen's lifetime. The other acts appear to have been passed with scarcely any debate or opposition in either house, except occasionally upon mere points of detail and form.

The remainder of the history of the reign of Mary is occupied chiefly with some persecutions of the partents to the reformed doctrines. The Protestant writers reckon that about two hundred and eighty victims perished at the stake, from the 4th of February, 1555, on which day John Rogers was burnt at Smithfield, to the 10th of November, 1558, in the last act of 6th of February. At the place by the execution in the same manner of three men and two women at Colchester. Dr. Lingard admits that after expunging from the Protestant lists the names of all who were condemned by the pope, or who died in their beds, or who survived the execution of their martyrdom, or who would for their heterodoxy have been sent to the stake by the reformed prelates themselves, had they been in possession of the power, and making every other reasonable allowance, it will still be found that
in the space of four years almost two hundred persons perished in the flames for religious opinion." Among the most distinguished sufferers were Hooper bishop of Gloucester, Ferrar of St. David's, Latimer of Worcester, Ridley of London, and Cranmer archbishop of Canterbury. Gardiner, bishop of Winchester and lord chancellor, was Mary's chief minister till his death in November, 1553, when the direction of affairs fell mostly into the hands of cardinal Pole, who after Cranmer's deposition was made archbishop of Canterbury; but the notorious Bonner, Ridley's successor in the see of London, has the credit of having been present at the execution. It may be remarked, so far from contributing to put down the reformed doctrines, appear to have had a greater effect in disguising the nation with the restored church than all other causes taken together.

At the same time that the new opinions in religion were thus attempted to be extinguished by committing the bodies of those who believed in them to the flames, the queen gave a further proof of the sincerity of her own faith by restoring to the church the tithes and first-fruits, with all the rectories, glebe-lands, and tithes that had been annexed to the crown in the times of her father and brother. She also re established several of the old religious houses, and endowed them as liberally as her means enabled her. On the 15th of August, 1553, a proclamation was made in the counties and boroughs of England, in the beginning of September, 1555, and continued absent for about a year and a half. The bond however by which this marriage attached the English court to Spain and the Empire remained the same as ever; and this was the present of the marriage declaration which in the spring of 1557 between Spain and France, Mary was prevailed upon to join the former against the latter power. The principal consequence of this step, in so far as this country was concerned, was the loss of the only remaining English vassal in Italy; and the kingdom of Naples, the daughter of Calais, which surrendered to the duke of Guise, in January, 1558, after a siege of a few days. This event, which was regarded as a national disgrace worse than any mere loss, except the castings of the three crown jewels of the country, was a blow to the policy of the court; and Mary herself is said never to have recovered from the blow. Some ineffectual efforts were made to retaliate upon France by force of arms; but at last negotiations for a peace between the three belligerent powers were opened at Cambrai, in the midst of which queen Mary died, worn out with bodily and mental suffering, on the 17th of November, 1558, in the forty-third year of her age and the sixth of her reign. She is affirmed to have said on her deathbed, that if her breast should be opened, she would be found written on her heart. Mary left no issue, and was succeeded on the throne by her half-sister Elizabeth. [ELIZABETH.]

MARY STUART, queen of Scotland, was born on the 17th of May, 1542. Her child of James V. of Scotland, by his wife Mary of Lorraine, daughter of the duke of Guise, who had previously borne her husband two sons, both of whom died in infancy. A report prevailed that Mary too was not likely to live; but being unwashed by her nurse at the desire of her absent mother, in presence of the English ambassador, the latter wrote to his court that she was as good a child as he had seen of her age. At the time of her birth her father lay sick in the palace of Falkland; and in the course of a few days after her birth, at the early age of thirty, his business being hastened by distress of mind occasioned by the defeats which his nobles had sustained at Fala and Solway Moss. James was naturally a person of considerable energy and vigour of body, but pressing his business, he fell into a state of listlessness and depression, and after his decease it was found that he had made no provision for the care of the infant princess, or for the administration of the government. The ambitious Beaton seized this opportunity; and when he had been at the height of his influence in the country; and on the 9th of September, 1543, Mary was crowned by the archbishop, who was also immediately afterwards appointed lord high chancellor of the kingdom. He had even the address to win over the regent Arran to his views, both political and religious; and thus the French or Roman Catholic party obtained the ascendency. The two years of Mary's life were spent at Linlithgow: a royal palace of which she was born; she was then taken to Stirling castle; and when the disputes of parties in the country rendered this a somewhat dangerous residence, she was carried to Inchmabone, a sequestered island in the Firth of Montrose, where she remained about two years. In the meantime a treaty of marriage had been concluded between her and the dauphin Francis; and in terms of the treaty it was resolved she should be sent into France to be married, the ceremony being solemnized. Accordingly in the fifth year of her age, she was taken to Dumbarton, where she was put on board the French fleet; and setting sail towards the end of July 1556, she was, after a tempestuous voyage, landed on the 1st of August in the island of Maid of the horse that she should hence be received in the palace at St. Germaine-en-Laye. At every town in her progress she was received with all the honours due to her royal rank, and as a mark of respect and joy the prisons were thrown open and the prisoners set free. Soon after her arrival at Amiens Mary was placed with the French king's own daughters in one of the first convents of the kingdom, where she made such rapid progress in the acquisition of the literature and accomplishments of the age, that when visiting her in the end of the July, Francis was heard to exclaim, "This is not my daughter!" The attendants, burst into tears of joy. She did not however remain long in this situation. Perceiving the bent of her mind to the society and occupations of a nun, which did not accord with the ambitions projects entertained by the king, she was conveyed to the court of Sees, the palace on the island of Sees; and thus was placed in the train of the French court, which, as Robertson observes, was one of the politest but most corrupt in Europe. Here Mary became the envy of her sex, surpassing the most accomplished in the elegance and fluency of her language, the grace and beauty of her person, and in every manner and way. Her royal visitor, who was the betrothed and who was about to be united in wedlock, was her own age, and they had been playmates from early childhood. The differences of their condition in life created a certain affection between them; but the dauphin had little of her vivacity, and was altogether considerably inferior both in mental endowments and personal appearance. The marriage, which took place on the 24th of April, 1558, was celebrated with great pomp; and when the stepmother, taking a ring from his finger, presented it to the cardinal Bourbons, archbishop of Rouen, who, pronouncing the benediction, placed it on the finger of the lovely and youthful bride, the vaulted roof of the cathedral rung with the shouts and consternation of the host of spectators. The solemnities being over, the married pair retired to one of their princely retreats for the summer; but that season was hardly gone, when a vacancy occurred on the throne of England by the death of Queen Mary, classes were put in motion to obtain the restoration of the house of Lancaster, granddaughter, who was eldest daughter of King Henry VIII. of England; and notwithstanding Elizabeth had ascended the throne, and was, like her sister Mary (both daughters of King Henry VIII.), queen both de facto and by the declaration of the parliament of England, projects for the称的 French princess were made and continued to be urged with great pertinacity by her ambitious uncle the prince of Lorraine. On every occasion on which the French and Scottish princes met, there was little more than a morat or, meaning that of England. Henry II. died in July, 1559, and in September of the same year France was solemnly crowned at Rheims. Mary was now at the height of her splendour; it was doomed however to be only of short duration. In June, 1559, in December of the same year, her husband, who had been waiting for some months, expired. By this latter event, Catherine de Medici rose again to power in the French court, and Mary, who did not relish being second where she was first, and finding the first stage in quitting France and returning to her native country. The queen of England however interposed; and because Mary would not abandon all claim to the English throne, refused to grant her a free passage, being moved to this...
This popularity however was the result of adventitious circumstances only. There existed no real sympathy or connection between Mary and the great body of her people; and whatever led to the manifestation of her religious sentiments dissolved in the same degree the fascination which her other qualities had created. It is in this way we may account for the frequent allusions of Darnley in the assassination of Rizzio—an attendant on Mary—to have come in place of Chatelard. The latter was a French poet who sailed in Mary's retinue when she came over from the Continent; and having gained the queen's attention by his writings, and the evidence of a foolish attachment for her, to a boldness and audacity of behaviour which demanded at last the interposition of the law, and he was condemned and executed. Rizzio, a Piedmontese by birth, came to Edinburgh in the capacity of tutor for Mary's children, the reappearance of Chatelard's execution. He was skilled in music, had a polished and ready wit, and, like Chatelard, wrote with ease in French and Italian. His first employment at court was in his character of a musician; but Mary soon advanced him to be her French secretary; and in this situation she was conceived to possess an influence over the queen which was equally hateful to Darnley and the Reformers, though on very different grounds. Both therefore concurred in his destruction. Darnley accordingly disclaimed all concern in the plot; but it was plain the queen did not believe and could not forgive him; and having but few qualities to secure her regard, her growing contempt of him terminated in disgust. The death of Mary's kinsman the Earl of Bothwell was rapidly advancing in the queen's favour, and at length no business was concluded, no grace bestowed, without his assent and participation. Meanwhile also Mary bore a son to Darnley; and after great preparations for the event, baptism was performed in the chapel Royal, and the infant was inwa

...
affix her signature to them; upon which the prince was solemnly crowned at Stirling, 29th July, 1567, when little more than a year old. Mary continued a prisoner at Lochleven; but by the aid of friends, in less than twelve months she effected her escape, and collected a considerable army. The battle of Langside ensued, where she was completely routed; upon which she fled towards Galloway, and thence passed into England, hoping to secure the favour of Elizabeth. In the interval, however, Elizabeth refused her an audience, but declared her readiness to act as umpire between her and her subjects. Mary would not yield to this, or consent to be regarded in any other light than as queen of Scotland. The consequence was, that being left to her own devices, her great rival, Elizabeth contrived to detain her captive in her dominions till the end of the year 1586.—a period of about nineteen years,—when she was accused of being accessory to Babington's conspiracy to kill her. A commission was appointed by Elizabeth, but Mary refused to acknowledge its jurisdiction. 'I came into the kingdom,' she said, 'an independent sovereign, to implore the queen's assistance, not to subject myself to her authority, for I died in France for the fine of past misfortunes, or so intimidated by present dangers, as to stoop to anything unbecoming a crowned head, or that will disgrace the ancestors from whom I am descended, or the son to whom I leave my throne. If I must be tried, princes alone can try me and me alone; and the laws of England's subjects, however noble, are of a rank inferior to mine. Ever since my arrival in this kingdom I have been confined as a prisoner. Its laws never afforded me protection; let them not be perverted now, to take away my life.' Delusion and falsehood, however, were not to subdue her character, Mary consented to be tried. The commission accordingly proceeded: Mary was condemned, and, on Wednesday the 8th of February, 1587, beheaded at Fotheringay castle, in the 45th year of her age. When she was led into the market-place for her execution, she was allowed to stop and take farewell of the master of her household, Sir Andrew Melville, whom her keepers had not suffered to come into her presence for three days. Sir Andrew Melville was a brave man; kneeling down before her with tears in his eyes, declared this was the heaviest hour of his life. 'Not so to me,' said Mary: 'I now feel, my good Melville, that all this world is vanity. When you speak of me hereafter, say that I died firm in my faith, and that in my being unable through the weakness of my body to defend myself by arms, I fell a victim to my faith.' The extremity of her sufferings was great; the extremity of her fertility and sterility are frequently found in a very limited space. The country west of 77° 30' W. long, is mountainous, being traversed from south to north by six or seven of the ranges which compose the Appalachian system; one range, which we shall call by these ridges are generally wide and fertile; they are from 500 to 800 feet above the level of the sea. The ranges themselves are rather narrow, but they rise to an elevation of from 2000 to 2500 feet.

Shores for 35 miles; and by the state of Delaware, which extends 36 miles along its northern and 91 miles along its eastern boundary. Pennsylvania forms the whole northern boundary of this state, for 220 miles, along the line of 39° 42'. The western portion of Maryland is divided from Virginia by a straight line running north and south for about 36 miles, which constitutes the western boundary-line of Maryland. On the south, where it also borders on Virginia, the Potomac river, which is a large estuary, forms the boundary-line for 320 miles. The surface is calculated to be 10,000 square miles, or somewhat less than double the area of Yorkshire.

The country on the north shore of Chesapeake Bay has a level surface as far north as Chester Bay, where it begins to undulate, and towards the boundary of Pennsylvania isolated hills make their appearance. The soil is generally thin and sandy, but tolerably well cultivated. Albermarle Sound, which forms part of the Pamlico Sound, has a few tracts of some extent occur. The largest is the Cypress Swamp, near the northern extremity of Sinepuxent Bay, a shallow arm of the sea, separated from the ocean by a ridge of low sand-hills, which however are interrupted by streams from the mainland and the ocean. Cypress Swamp partly belongs to Delaware, and is wooded. Along the eastern side of Chesapeake Bay several indentations occur, forming harbours for vessels of moderate size, as Pocomoke Bay, Fishing Bay, Choptank River, etc., which are navigable. There are also several islands belonging to Maryland in Chesapeake Bay, of which the largest is Kent Island.
Bay, which it enters in 39° N. lat. At the falls above
Georgetown it is ten feet deep, and at Alexandria three
fathoms; so that vessels of any burden can ascend to the
laster place, and large vessels as far as Washington nav-
yard. The whole course of the river exceeds 320 miles;
large boats ascend 120 miles above Harper's Ferry, and
smaller ones much higher.

The Patuxent, the second largest river, rises on the east-
ern border of the hilly country, in 39° 30' N. lat. Its general
course is south and south-west, and it flows about 100 miles; towards its mouth it becomes a bay, from two
to three miles wide. It is navigable for vessels of 250 tons
to Nottingham, forty-six miles from its outlet, and boats
ascend fourteen miles higher, to Queen Anne's Town.

A railroad runs through the Patuxent valley, likewise rises in the eastern portion of the hilly region,
westward of the source of the Patuxent; after a course
of about thirty miles in an east-south-east direction, it
drops over a ledge of rocks, and before it enters Chesapeake Bay it widens into an estuary ten or twelve miles in length.
Vessels of 600 tons can sail to Fells' Point, the lower har-
bour of Baltimore, and boats may ascend to Elkridge Land-
ing, eight miles above Baltimore.

The Susquehanna river traverses the northern part of
Maryland for fifteen miles, before it falls into Chesapeake
Bay.

Climate.—The climate is rather milder in the level part
of the country, but the winter is severe enough to block up
the streets. Rain is rather abundant, and snow falls well in Maryland. The annual temperature is 53°, being about three
degrees higher than that of London. In the level and hilly dis-
.tricts the summer heat is modified by sea breezes; but in the
higher classes the climate is unhealthful.

These valleys experience very severe winters, being
from 500 to 800 feet above the sea-level. The prevailing
winds blow from north-west and south-east. Rain is rather
abundant, the mean annual fall amounting to about forty
inches, which are in equal proportions throughout the
year. Drought is rare.

Productions.—Wheat, Indian corn, and tobacco are
chiefly cultivated; and rye, oats, and barley less exten-
sively. The wild animals are abundant. The common
fruits of the state, as apples, pears, plums, and peaches, receive in most places, and are of good quality.

Hemp and flax are raised to a considerable extent in the
upper valleys. The whole country was originally covered with a dense forest, of which a considerable part
remains, composed of a great variety of trees, especially
oak, hickory, ash, walnut, pine, and the tulip-tree. Along
the coasts of the Atlantic and the adjacent swamps a wild
grape grows, the fruit of which yields a pleasant wine.

The wild animals are numerous, and wild fowl abun-
dant. The forest animals are: deer, bears, turkeys, foxes,
and raccoons. The wild fowl are: geese, ducks, and many
smaller birds. Fish are abundant, especially in the Patuxent.

The principal minerals are coal and limestone. Coal
does not occur to the eastward of Cumberland, but west of
that town it is abundant. It is found in beds which vary in
thickness from one inch to several inches, and sometimes
ten feet. Limestone occurs in the whole range of the
mountains, and is used for various purposes; sometimes it
supplies a good building-material. Iron-ore is met with in
several places, and there are indications of copper and lead.

Inhabitants.—The native tribes have long since disper-
sed in Maryland. The present population consists of
whites and negroes. In 1820 it was composed of 260,222
whites, 39,730 free people of colour, and 107,399 slaves: in
1830 the population is: 348,908 free people, whites and coloured, and of 102,880 slaves; or of
456,200 souls. Since the importation of slaves into the
United States has ceased, Maryland supplies slaves for the
market of the South.

Roads and Canals.—A turnpike-road has been made
across the country from Baltimore to Hagerstown, and
thence to Cumberland and Wheeling in Virginia. The
Chesapeake and Ohio canal is to connect Georgetown in
the district of Columbia with Pittsburgh, on the Ohio, in
Pennsylvania. It chiefly follows the course of the Patuxent,
and in 1834 one hundred and ninety miles were completed,
MASCLEF, FRANCIS, was born at Amiens, m. year 1662. He very early devoted himself to the study of Oriental languages, in which he attained an extraordinary degree of proficiency. Having been brought up to the church, he became first a curate in the diocese of Amiens, and after rewards obtained the commendam of Amiens, which place him at the head of the theological seminary of the district and made him a canon. He died in 1706, and Masclef, whose opinions on the Jesuits controversy were not in accordance with those of the prelate, was deprived of the commendam. He was compilers of the theological seminary and to retire from public life. From this time he devoted himself to study with such close application as to bring on a disease, of which he died on the 24th of November, 1728, at the age of sixty-six. Thus a rare and excellent writer, he was, in 1716, specially called for a defence of the points from the Abbé Guarin, a learned Benedictine monk. In the year 1731 a second edition of Masclef's work was published at Paris containing an answer to Guarin's objections, with the addition of his own objections. This augmented work was acquitted, on account of its being thought too coarse and sensatious opinions.

MASCULINE and NEUTER. [Gender.]

MASERES, FRANCIS. The dates and facts in the following account are taken from 'The Gentleman's Magazine' for June, 1824.

He was born in London, December 15, 1731. His father was a physician, descended of a family which was driven from France by the revocation of the Edict of Nantes. He was graduated at the age of twenty-one with the degree of B.A. in 1752, obtaining the highest place, both in classics and mathematics. He then (having first obtained a fellowship in his college) removed to the Temple. In 1758, he was called to the Bench, and to have a circuit for some years with little success. He was then appointed (the date is not mentioned) attorney-general for Canada, in which province he remained till 1773, distinguished by his loyalty during the American rebellion. He was created at the age of forty-five, and in 1785, became a member of the House of Lords. Baron Masères (as he was commonly called) has left behind him a celebrity arising partly from his own writings, and partly from the munificence with which he devoted a part of his income to reprinting such works as he thought useful, either in illustration of mathematical science, or that of his own country. These were the objects of his private studies, and a peculiarity of his mathematical views which tinctured the whole of his writings, as well as his selection of works to be reprinted, requires some explanation.

It is well known that the art of algebra grew faster than the science, and that, at the time when Masères began his studies, a branch of knowledge which is essentially distinct from algebra had not yet been formed. In the particular case, had been pushed beyond the simple science of numbers in its methods, reasonings, and results, while in fundamental definitions were allowed to be expressed in arithmetical language, and restricted by arithmetical conceptions. The state of art and science. (To be continued.) The consequence was, that the algebraical books were anything but logical; and while those who could make for themselves the requisite generalization at the proper time were more likely to employ themselves in extending the boundary of the science than in writing elementary books; other students had to take a large part of algebra on trust, their faith being built partly on authority, partly on continuous seeing veritable truths produced by its operations. Māsĕres, when a young man, rejected all of algebra which was not arithmetic, as being what he could not comprehend.
self, though he admitted that others might do so. In his earliest public lectures on the use of the Negative Sign in Algebra,' London, 1758), which is in fact a treatise on the elements of algebra, after rejecting in equation in which negative quantities occur, he adds:

I speak according to the foregoing definition, by which the definiteness of negative quantity implies a relation to another quantity of the same kind, to which it is added, or from which it is subtracted; for it may perhaps be very clear and intelligible to those who have formed to themselves some other idea of affirmative and negative quantities.

The other works of Mascares are, 'Elements of Plane Trigonometry,' London, 1750; 'Principles of the Doctrine of Life Annuities,' London, 1783; Appendix to Frenck's 'Principles of Algebra,' 1789; tracts on the Resolution of Equations, and various remarks on the tracts published in the 'Scriptores Logarithmici,' presently to be noticed; papers in the 'Philosophical Transactions,' and political writings, a list of which will be found in the 'Gen- leman's Magazine' above cited. The characteristic of all these writings is an extreme prolixity, occasioned by his rejection of algebra, and the consequent multiplication of particular cases. In his 'Dissertation,' &c. above noticed, the four rules, and the solution of equations of the second degree, are given at the end of a page.

Of the reprints which Baron Mascares made at his own expense, the most important is the 'Scriptores Logarith- mic.' a collection, in six volumes quarto, published in various years from 1791 to 1807, of writings on the subject of logarithms, and of the connecting sciences. These reprints, &c., interspersed on original tracts on kindred subjects. The republication of these old writings has put them in the way of many students to whom they would otherwise have been inaccessible, and has thus tended to the revival of the subject of logarithms.

Besides these, he also reprinted the tract of James Bernoulli on Permutations and Combinations, and discovered and printed Colson's translation of Agnesi's 'Analytical Institution of the Doctrine of Chance,' in five volumes, 1735, and 1736, interspersed with original tracts on kindred subjects.

The expense of Hale's Latin treatise on Fluxions, 1800, was defrayed by him, and we understand that more than one other author was indebted to him for aid in the prosecution of his studies.

MASHAM, ABIGAIL, the favourite of Queen Anne, noted in the history of the time for her political intrigues, was the daughter of Francis Hill, a Levant merchant of London, who married the sister of Mr. Jennings, the father of the Earl of Marlborough. Upon the bankruptcy of her father she beloved her wealth, and for a time went about the streets of London; afterwards, when she removed into the service of her relative, then Lady Churchill, who procured her the place of waiting maid to the Prince Anna. She retained her situation after the death of the prince ascended the throne, and by her assiduity and complaisance acquired a great degree of influence over her. The high church principles in which she had been educated contributed to increase her credit with the queen, who was secretly attached to the Jacobite party, though obliged, in private, to be an habitante of the Protestant religion. The marriage of Miss Hill with Mr. Masham (son of Sir Francis Masham, of Otes in Essex) in 1707, occasioned an open quarrel with the Duchess of Marlborough, who was, in consequence of it, deprived of her majesty's confidence. Harley, afterwards the Duke of Newcastle, was a particular friend of this lady; a change of ministry took place, and in 1711 Mr. Masham was raised to the peerage. He and his wife appear to have been actively engaged in the intrigues of the Duke of Newcastle, and of the Queen herself, in the marriage of Sir John Throgmorton to Miss Hill, which was not only the ruin of Sir John, but the ruin of Mr. Masham, who lived a long time in retirement after the death of the queen, and died herself at an advanced age, December 1734.

(Masham, Sarah, Duchess of Marlborough, s.n., London, 1715, p. 48; Polit. Soc. of England, vi., p. xxvi; see also a character of Mr. Masham in Manley's 'Scriptores Logarithmici' from the New Atlantis, 12mo., London, 1790, viii., p. 147.)

Maskelyne, Nevis, was born in London, October 6, 1732, was educated at Westminster, and afterwards at Catharine Hall, Trinity College, Cambridge, in which university he took the degree of B.A. with distinction, in 1754. In 1755 he took his M.A., but he was not actually licensed to practice law, and he therefore led to turn his attention to astronomy by the solar eclipse of 1748, and by becoming acquainted with Bradley, whom he assisted in the formation of his tables of refraction. In 1761 he went to St. Helena, to observe the transit of Venus, and to assist, if possible, in the preparation of the next great astronomer royal, and from this time, with the exception of his voyage to Scotland in 1772, to determine the mean density of the earth by observing the effect of the mountain Scheibahlen upon the plumb-line, his life was one unvaried application to the practice of improvement of astronomical observation. He died February 9, 181 I.

Delambre dates the commencement of modern astronomical observation, in its most perfect form, from Maskelyne, who was the first who gave what is now called a standard catalogue (A.D. 1790) of stars; that is, a number of stars observed with such frequency and accuracy, that their places serve as standard points of the heavens. His suggestion of the Nautical Almanac, and his superintendence of the establishment of it, date from this same period. These suggestions are mentioned in Almanac (vol. i., p. 364); his Scheibahlen experiment, in Attraction (vol. iii., p. 69); and the character of his Greenwich observations, in Greenich Observatory (vol. xi., p. 442).

Dr. Maskelyne was a member on the part of the government of the merits of the chronometers which were submitted by their makers as competitors for the prize, had more than one public accusation of partiality to bear. The now celebrated Harrison was one of his oppugners, and Mr. Murray, the authority on the subject, was another. The former was a pensive, religious man, with a style of writing which was unpublicized (as far as we know) which he ever made out of his official capacity (with the exception of papers in the 'Philosophical Transactions'), was a reply to a pamphlet by the latter, London, 1776. He edited Murray's lunar tables, and was the means of five thousand pounds being awarded to the widow of the author.

Mason, William, born in 1725, was the son of a clergyman at Hull. He took his B.A. degree at Cambridge in 1745, after which he removed from his College to Pembroke, of which college he was elected fellow in 1747. Having taken orders, he was presented to the rectory of Aston in Yorkshire, and became chaplain to the king. His political principles strongly opposed him to the American colonists, and he was removed from the Yeomen of the Guard, containing parliament. The horrors of the French Revolution however are said to have caused a change in his opinions, but as he was growing an old man when it broke out, the timidity of age probably worked as strongly as the spirit of terror, to render him indifferent to the change for years presentor and canon-resident of York. There is a tablet to his memory in Poets' Corner, Westminster Abbey.

Mason's Poems are now almost forgotten. Two tragedies, 'Elidria' and 'Caractacus,' a descriptive poem called 'The English Garden,' and some odes, are his principal productions, but he is now perhaps best remembered as Gray's biographer and friend. His style is that of an imitator of Dryden, and not being so perfect an artist in language as his master, he has been proportionally less successful. In addition to his poetical reputation he possessed considerable skill in painting and music, and in the latter subject entertained opinions not at all consonant to those of musicians in general. One of his productions was a book on what he called the dry and mechanical style possible, excluding all such expression as should depend on the powers and taste of the organist. (Mason's Compendium of the History of Church Art.)

Masonry (from the French maison and magas) signifies both the operation of constructing with stone and the parts of a building consisting of such material. It is an important branch of architectural practice, because much, both of workmanship and so-called stonework, depends upon the excellence of the workmanship and the quality and colour of the stone. Owing to its expense, masonry is comparatively rarely employed in this country, except for public buildings or others of the highest class. The mason's work being in other cases restricted to such

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parts as steps to door, string-courses, faces, and plain cornices externally, and to pavements and stairs in the interior. Yet that degree of stone-work does not constitute what is termed a brick and stone building, because the such term implies a considerable mixture of stone and brick, namely, that the doorways, window dressings, columns, parapets, angle-quoins, and all the ornamental parts are of stone, the made or plain face of the wall only being of brick. But an intermediate stage between the extreme and the other extremes in some of the later Gothic styles, the brick-work being now covered with stucco, cement, or mortar, to resemble as far as possible the stone, when the latter is used for columns, pilasters, and ornamental parts, or, is now more appropriately called a cloéve, only the columns themselves are formed of brick, and afterwards stuccoed. In other instances, while the building itself is entirely faced with stone, all the richer and more elaborate decorations, such as capitals, carved mouldings, and other sculptured ornament, are covered with terra-cotta, or burnt artificial composition, which is said to be not only more economical, but far more durable than stone itself, owing to its being to a certain extent vitrified. This mode has been resorted to with success for the Ionic capitals of St. Pancras Church, London.

Of all our freestones, Portland stone is perhaps the very best yet discovered, both for durability and colour; but its high price and the expense of working it prevent its being so extensive. Yet it might be with advantage employed in Bath stone is the kind more generally made use of for building purposes, it being soft when first taken out of the quarry, and very easily worked. Neither its texture nor tint however is so good; and when discoloured by time, as it usually is, it has a certain uniformity. In fact a living architect (Mr. A. Bartholomew) describes it, in his 'Hints on Fire-proof Buildings,' as 'the vilest of material, which, when new, is weak and swarthy, and which decays before I myself am old,' and he further mentions the Builder's Hospital as the earliest instance of the extensive use in London of Bath stone. Ketton stone, which has been used for the tower of St. Dunstan's in the West, Fleet Street, is, though not equal to Portland, greatly superior to Bath stone. Charnwood granite and Dunster stone are now in great requisition for constructing demandning strength and solidity, and have been used in several of the docks and new bridges.

Walls which are not of solid masonry throughout, but built of brick or inferior stone and rubble, with only an external facing of squared stone laid in courses, are termed ashlar, or ashleering. [Ashler.]

Rusticated ashlar or stone work is where the separate stones are divided at their seams or joints, which is done either for ornament or for the sake of improving a very peculiar kind to a certain depth, or sinking them by cutting each stone so that it has a general projecting surface, by which means, when united together, those surfaces are flush with the plane of the wall, and the sunken margin round each forms regular chamfers. Such a mode is always adopted when horizontal rustics alone are used, as is now too frequently the practice, for it is not only poor and monotonous, in comparison with rusticating with both vertical and horizontal joints, but unmeaning in itself, and justly condemned by Sir W. Chambers. Through generally made quite smooth, the faces of the rustics are sometimes tooled, or else, though very rarely, hatched, incised, or fretted; all which varieties may likewise be considered as resulting from the general desire for greater variety, with smooth-faced rustics. Such rough rustics are sometimes distinguished by the name of bosages.

Stones inserted quite through a wall, in order to bind it firmly together (in the absence of which the ashleering would be but a poor coating when going to the brick-work only by mortar), are called bond stones; and these, at the base of the wall, projecting beyond its general periphery, for the purpose of giving greater solidity just above the foundation, are termed footings.

Walls built with uneven stones, either with or without mortar, are called rubble walls, and the stone itself rubble.

Masons, free. According to the extravagant and whimsical hypotheses entertained by some of those who have written upon the subject of freemasonry, it is an institution almost of immemorial antiquity. Writings originated with the builders of the tower of Babel, though others are content with tracing it no farther back than the temple of Solomon. If we are to believe them, the institution has been continued down in uninterrupted succession from that very remote time to the present day, through all the changes of government, religion, civilization, and of knowledge. Against this there exists one very simple, yet fatal, argument, namely, that were this really the case, such an uninterrupted series of tradition must have kept alive and handed down to us much information that has, on the other hand, been lost. It is desirable, therefore, that we find that even a technical knowledge of architecture itself has not been so preserved; else how are we to account for the ignorance which everywhere prevailed with respect to Goethe and the art of the Middle Ages, even as soon as the art itself fell into disuse? That there may have been many instances of resemblance between the fraternities of masons in the middle ages, and such institutions as those of the eleusinian mysteries, and the corporation of Ionian architects, as may be supposed; but it is farther to be observed that all the circumstances would almost necessarily lead to it. Before the invention of printing, when the means of communicating knowledge were few and imperfect, no residuary mode presented itself of extending and keeping up the speculative from the fraternities of masons, and the corporations of Ionian architects, as so far as they have existed, subervient to it.

The importance of architecture to the church, an account of the changes which have taken place in the form of the churches of the middle ages, and the ministers of religion, naturally induced the clergy to take it under their especial protection. For a long time not only were ecclesiastics the chief patrons but almost the only chief professors of the art; yet as they had occasion for the assistance of practical architecture, they both resorted and admitted them to fellowship with themselves, establishing a kind of order of a mixed character, just as the orders of chivalry combined at their origin the principles of military and religious discipline. Hence some have supposed that the origin of chivalry, and have to be established at the time of the Crusades. The more probable hypothesis perhaps is that they were related to each other in emanating from the same source, the fraternities of esoteric masons, and that their connection with the lodges of masons affected; and, together with their zeal in accumulating knowledge for themselves, their desire to confine it to their own body. Additionally, these inventions and improvements made in architecture were communicated from one country to another, a circumstance which at once accounts for the sudden spread of pointed or Gothic architecture throughout the whole of the west of Europe; and at the same time sufficiently explains the rapidity with which it gained the ascendant. But it is at all satisfactorily where that style actually originated, to what nation contributed most towards its advancement. Owing also to the jealousy, which the masons kept to themselves, it is not at all surprising that the history of the art during the middle ages should have involved it in so much obscurity that it can now be traced only by monuments, and by monuments, documents relative to the study of which have been concealed as much as possible, even when the history of the art during the middle ages should be involved in so much obscurity that it can now be traced only by monuments, documents relative to the study of which have been concealed as much as possible, even when some of the kind must have been in existence. Among the works which are ascribed to the influence of the medieval masons was, on the one hand, the suspicion with which the church itself began to regard them as societies that might in time acquire an influence not easily watched, and which must be turned against itself; and on the other, the stricter examination, together with the revival of the arts, which deprived such bodies of their utility and importance, and led it impossible for them to confine their knowledge exclusively within their own pale.
Freemasonry revived again in this country about the
time of the civil war, yet merely in some few places; being
again marked in England by a character from which it had
been, and becoming merely 'speculative' or modern Masonry,
an institution in nowise connected with architectural prac-
tice. From this country it was first introduced into France
about the year 1735; into Spain in 1737; and into Italy in
1738. The Lodge was established at Flo-
cence. It was afterwards however the object of persecution
not only in France and Italy, but also in Holland and Ger-
many. Some writers, more especially Abbé Baruel and Pro-
fessor Robison, have viewed it as a direct antagonist of
freemasonry that had been converted into an organised secret
conspiracy against religion and existing governments. If
the charge has been unjustly made, it must be owned that the
profound mystery in which it cloaked itself gave some
colouring to such charges, it being but natural to infer that
if there was anything to call for such extraordinary degree
of secrecy, it could hardly be sought for good, or in accordance
with the interests of society at large. The greater probabili-
ty is that there is nothing either good or bad to conceal;
that the mystery of freemasonry is nothing more than an
innocent mystification; and that its symbols and instruc-
tions, whatever meaning or purpose they may originally have
drawn, are now become mere forms and signs retained by
the brethren or 'free and accepted masons,' as they style them-
selves in their grand lodges, a matter of peculiar importance
on their harmless social meetings.

MASONITIES. [HEBREW LANGUAGE.]

MASOVIA. [POLAND.]

MASQUERADE [ENGLISH DRAMA.]

MASQUERADE (from the Italian maschera and
French mascarade), an amusement introduced into England
in the sixteenth century from Italy. Hall, in his 'Chron-
icle,' says, 'On the daie of the epiphaine, at night (A.D.
1512-13), the king (Henry VIII.) with eleven others were
disguised in persons of their coat of arms, disguises not seen afore in England: they were appareled in gar-
ments long and brode, wroght all with golde, with visers
and cappes of golde; and after the banket done, these
masquers convert in to veules in the company, by
berying staffes toFFECE, and desired the ladies to dauncce:
some were content; and some that knewe the fashion of it
refused, because it was not a thing commonly seen: and after
they daunced and communed together, as the fashion of the
masks was, till they gete their company and departed, and so
did the queene and all the ladies.'

The distinction between this species of amusement and the
disguisings and mummings of the middle ages appears to
have been generally, and almost universally, a matter of
amusement, in lieu of the execution of a particular
dance or preconcerted action by certain individuals for
the entertainment of the guests, the latter being as old at
least as the time of Edward III. in England, and the precur-
sors of our modern masquerades out of the middle century. In
'tthe garments long and brode,' and 'disguisings of silke,'
we may perceive the present domino, so called, according
to some authorities, from an ecclesiastical vestment (a black
hood worn by canons of cathedral), domino being a title
applied to dignified clergymen in the middle ages. Others
derive it from the ordinary robe or gown worn by Venetian
noblemen at that period. Granacci, who died in 1543, is
said to have been the inventor of masquerades: at what
particular date does not appear; but from the above
evidence of Hall, they had become fashionable in Italy
as early as 1512.

MASS. By the mass a body is meant the quantity of
matter which it contains, upon the supposition that differ-
ences of weight are always the consequence of different
quantities of matter. This involves a hypothesis; for in-
stance, if gold be, bulk for bulk, nineteen times as heavy
water, it is presumed that a given bulk of gold contains
nineteen times as much matter as the same bulk of water.
But an observation of the vulgar or common language of
chemistry, the constitution of these bodies, it might appear
that we are wrong in supposing difference of quantity to be
the cause of difference of density.

The fact is, that mass means weight, so that two bodies,
that which has the more mass; why then is this word intro-
duced at all? If we had only to consider bodies at the surface of the earth, we might in all cases substitute weights for masses, but when we have occasion to speak of bodies at very different distances from the centre
of the earth, their weight towards the earth, which is then
called the attraction of the earth, depends upon their dis-
tance from the earth, as well as their absolute constitution.
If we imagine two planets at the same distance from the
earth, the attractions of the earth upon the two will then be
in a proportion which depends, not on that distance, but on
the amount of mass in the two.

When we say that Jupiter has only the 1947th part of
the mass of the sun, we express a fact of which observation
and deduction make us certain, namely, that at the same
distances the attraction of the sun upon the earth is 1947
times as great as that of Jupiter in the same case. This
hypothesis of the following kind, that the sun contains 1947
times as much matter as Jupiter. The hypothesis is a con-
venience, not affecting the truth or falsehood of results; but
the fact represented, remains, that at the same distance the
sun does 1947 times as much towards deflecting the earth
as is done by Jupiter.

In the application of mechanics, the following equations
frequently occur:

\[ \text{Weight} = \text{mass} \times \text{force of gravity}. \]

\[ \text{Mass} = \text{volume} \times \text{density}. \]

These equations, like others of the same kind, are to be
understood with tacit reference to the units employed; they
spring from the following proportions. Any two masses are
to one another in the ratio compounded of the ratio of the
volumes and the density, that is, the two bodies, being eight cubic feet three times as dense as water, and seven cubic feet four times as dense, the masses are in the proportion of 8 \times 3 to 7 \times 4, or of 24 to 28. Again, if two different masses are to be compared by presenting
them in a vessel filled with water, and let the unit of time create different amounts of velocity, the
pressures are to one another in the ratio compounded of
that of the masses and that of the velocities which would
be generated in the unit of time. Thus the preceding masses,
which are as 24 to 28, would produce in the same particles velocities of 10 and 11 feet, if
allowed to act uniformly for one second, the pressures
required to prevent motion at the outset would be as
24 \times 10 to 28 \times 11, or as 240 to 308.

\[ \text{Weight} = \text{specific gravity} \times \text{acceleration}. \]

MISCELLANEOUS. [Latin.] The word 'missa' has been variously accounted for; some derive it
from missio or dimissio, 'dismissal,' because in the early
ages of the church the catechumeni, or new converts who
were not yet admitted to partake of the sacrament, were
sent off by the priest at the end of the mass, prior to the
consecration of the Host. Others derive it from the
Hebrew word 'Missah,' i.e. oblation or sacrifice in commem-
oration of the sacrifice of our Redeemer for the sins of man
kind. Dunsac, in his 'Glossarium,' art. 'Missia,' gives
the various opinions on the etymology of the word. The
word missa, signifying the ceremony or rite of consecrating
the Host, is found in the epistles of St. Ambrose, St. Augustine,
and Cæsarius, bishop of Arles. See also Baronius, in his
"Annales."

A mass is a church service which forms an essential part
of the ritual of both the Roman Catholic and Greek or
Eastern churches, and in which the consecration of
the sacramental bread and wine takes place. It is performed
ceremonially by the officiating priest standing before the altar
and attended by a clerk who says the responses. The
prayers of the mass are all in Latin in the Roman Catholic
church, in antient Greek in the Eastern church, and in
Syria among the Maronites and Jacobites, but never in
the vulgar tongue. As the mass is a scribal act, each
congregation take no ostensible part in the service, but they
follow it mentally or in their prayer-books, in which the
text of the prayers is occasionally accompanied by a trans-
lation in the vulgar tongue. The priest does not address
the congregation, but has his back turned to them, except at
the end of certain prayers, when he turns round, and says,
'D minus vocubums' ('The Lord be with you'), and at the
'Ot fratres,' &c. ('Brethren, pray,' &c.), which are
replied to, on the part of the congregation, by the clerk.
The mass consists of various parts—1, the Introit, or preparation, consisting of several prayers, psalms, the *Gloria in excelsis*, the epistle and gospel for the day, the Creed, &c., which the priest recites with a loud voice. 2. The consecration, in which the priest consecrates the bread and wine, repeating the words, 'Hoc est corpus meum, et hic est calix sanguinis mei,' and then shows to the people both the bread and the chalice containing the wine, upon which all the congregation kneel down. 3. The Communion. The priest, after reciting more prayers, accompanied by an invocation of the apostles and other saints, the Lord's Prayer, &c., takes the sacrament under both forms; if any of the congregation are disposed to take the sacrament, the priest then descends from the altar and administers it to them in the shape of the consecrated wafers or bread only. 4. The post communion, which consists of a few more prayers, and of the blessing which the priest gives turning towards the congregation, after which he reads the first chapter of the gospel of St. John down to the fourteenth verse, and the mass is over.

The low or ordinary mass, *Missa brevis*, lasts in general about half an hour, and every Roman Catholic is bound by what are styled the *Commandments of the Church,* to attend it once at least on Sundays and other holidays, unless prevented by illness. The transgression of this precept is reckoned a sin. Pious persons hear several masses in succession, and many attend mass every day in the week, for it is celebrated every day in each parish church. A priest must not break his fast either by food or drink from the previous midnight until he has said mass, out of respect for the real presence of Jesus Christ in the sacrament. The service of the mass is indeed essentially connected with and depends on the doctrine of transubstantiation. [Transubstantiation.]

On great festivals and other solemn occasions the mass is performed by a priest or prelate, attended by a deacon and subdeacon, who says the responses and chants the epistle and gospel of the day. On those occasions the mass, or at least parts of it are sung by a choir, accompanied by the organ and other musical instruments. This is called 'high mass,' and is a long and pompous service. Both for the low and the high mass the officiating priest is dressed in peculiar varicoloured garments appropriate to the occasion, which he afterwards takes off in the vestry-room.

The *Missa* is the name of the book which contains the ritual of the mass, and which the priest holds open before him on the altar. Some of the old Missals, written in MSS. or printed, are beautifully ornamented with paintings and are valued as bibliographic curiosities.

The Protestant and reformed churches have no mass; they do not believe in the doctrine of transubstantiation but several of the detached *Orosius*, or prayer-book service, which are very fine, have been retained in the Liturgy of the Church of England translated into the English tongue.

**MASSA, DUCHY OF**, a small territory of Italy, which, with the annexed territory of the family of Cibo. It now belongs to the [Carara] The territory of Massa extends from the sea-coast to the Apennines and the group which divides it from the principality of which also belongs to Modena. To the south-east Massa borders upon the province of Modena, belonging to Tuscany: it adjoins Carrara: its breadth does not exceed six miles. The small town of Massa is situated on the sea. The town of Massa is not far from the sea, on the coast of Massa, a fine port, and a celebrated marble quarry.

**MASSACHUSETTS**, a state of the United States, on the east coast of the United States, on the south, west, and north by the state of New York, and by the state of New Hampshire, and by the state of Connecticut. It is about 135 miles long, and 85 miles broad. It has an area of about 5,000 square miles. The total population is about 6,000,000. It has a humid climate, and is noted for its fine scenery. The state is divided into seven counties: Berkshire, Essex, Franklin, Hampden, Middlesex, Plymouth, and Suffolk.
ston and Hadley. North and south of these places the Con-
necticut runs through a valley, from two to three miles wide, 
which is covered by an alluvium of great fertility. West of it 
the country immediately rises into high hills, which gradu-
ally attain the elevations of mountains, Berkshire, the most 
western district of the state, being traversed from north 
to south by two continuous ridges, whose more elevated 
parts are from 3000 to 4000 feet high. The valleys of this 
district have a very fertile soil.

Traversed by the Merrimac and mountainous region is tra-
versed by the Massanatick, which rises near the north-
western corner of the state, and traverses it by a southern 
course of nearly 50 miles, when it enters Connecticut; it is 
very rapid river and not navigable. The Coxsuett, from New Hampshire, 
and traverses it by a course of about 70 miles, including its 
numerous bends. It is navigable for boats in the whole of 
its course in Massachusetts. [Connecticut.] No consider-
able river falls into Massachusetts. Cold, swift waters, 
which falls into Boston harbor, though its whole course does not 
exceed 30 miles, is navigable for about eight miles for large 
boats, the tide flowing up to Dedham. The Merrimac rises in 
New Hampshire on the western declivities of the White 
Mountains, near of 44° N. lat., and runs nearly due south, 
30 miles, when it receives a branch from Winnipesaukee 
lake, and then runs for 52 miles south-south-east, till it is 
mets by the Nashua river from the south-south-west. Below 
the junction with the Nashua, the Merrimac curves gradu-
ally to the west and northwest. It ascends to the north,
and, as it approaches the north-west about 30 miles, when it falls into the Atlantic 
after a course of more than 150 miles. In its natural state the 
Merrimac opposed great impediments to navigation. The tide 
ascends to Haverhill, 18 miles from its mouth, but about 
the river the current is disturbed by many obstructions; 
and rapids. The lowest is below Chelmsford, where the river 
falls over a ledge of rock, to avoid which a canal with three 
locks has been made. Between this ledge of rock and Haver-
hill the stream, though still rapid, is navigable. Numerous 
falling into the Merrimac are set up, and some of the 
now avoided by canals. The number of these canals is eleven, 
and an uninterrupted navigation has thus been effected as 
far up the river as Concord in New Hampshire. The im-
portance of the river to the river commerce of the state has 
been much increased by the Middlesex Canal.

Climate.—The climate of Massachusetts is much colder 
in winter, and warmer in summer, than the southern dis-
tricts of Great Britain, though the difference of latitude 
amounts to only about nine degrees. The mean temperature 
seems to be 46°, or about two degrees less than that of Lon-
don. The winter commences about the middle of De-
ember and terminates about the middle of March. In this 
season the thermometer generally falls below freezing, 
10°, and sometimes descends below zero of Fahr.; snow 
covers the ground and the rivers are frozen hard enough to 
bear loaded waggons. The spring terminates in the middle 
of May. The summer is hot, and at the solstices the thermometer 
often exceeds 90° F. The early days of the summer sometimes 
it attains 90° and even 100°. In the same sea-
son it sometimes descends in the night to 60°, whilst at 
noon it is 90°. The summer lasts to the beginning of Oc-
tober, when the weather grows rapidly colder. The prevalent 
winds are from the north-west and north. The north-west 
wind prevails during the whole year, except the summer, 
when the wind blows mostly from the south or south-west. 
In winter the coldest wind is from the north-west. Rain 
are rare and light, with little or no sunshine, and generally 
amounts to more than 40 inches, which is nearly 
double the quantity that falls in many places on the con-
tinent of Europe. Yet it is stated that the number of rainy 
days is fewer in Massachusetts than in most countries of 
Europe; and the mean amount of precipitation is not 
more than the northern part of New England.

Productions.—As Massachusetts was early settled, a greater 
portion of its surface is cultivated than in most of the other 
states, and agriculture has been more improved. The farms 
generally average from 100 to 200 acres. The principal agricul-
tural productions are wheat, corn, barley, rye, oats, 
flax, peas, hops, beans, and pumpkins, which last are used as 
food for swine and cattle. Wheat, buckwheat, and barley 
are raised only in small quantities. Forests still cover a con-
tinuous surface. In the north there are only pines, the white pine on a soil consisting of 
lichen and the yellow pine on sand and gravel. The hilly and 
mountainous country produces oak, walnut, birch, maple, 
ash, cedar, cherry, and chestnut. In the valleys and on the 
banks of the rivers there are elm, cherry, maple, and aspen. 
Some marshy places are covered mostly with white cedar. 
All the fruit-trees of England are cultivated.

The cattle and the hog are of a good size, especially the 
former, in the mountainous and hilly country west of Con-
necticut river. Wolves are still found in the hilly region. 
Fish abound in the rivers and in the sea. The whale fishery 
for the sea between Massachusetts and the Great Bank of 
Newfoundland is still important, though the humpbacked 
whales of which have disappeared, and only the black fish (Del-
phinus globiceps, Cuv.) comes there in shoals, and is taken 
in considerable numbers by the inhabitants of Nantucket, 
New Bedford, and the vessels from other places. 
The fishery of cod in Massachusetts Bay and on the banks 
near Nantucket is still more important, and also that of 
mackerel. The other fish abounding in the same tract of 
sea are haddock, herrings, halibut, and sturgeon. Lobsters, 
crabs, and some other shell-fish abound in Massachusetts 
Bay.

Iron occurs in several places, but is not much worked.

There are some traces of copper and lead. Limestone 
abounds in Berkshire, where some good marble also occurs.
State is found in one or two places.

Inhabitants.—The population, which during the last cen-
tury increased very rapidly, at present increases more slowly. 
The emigration towards the west is considerable. In 1820 
the population amounted to 531,725, and in 1830 to 610,408.
In 1840 the population was increased to 716,125, or to 1211 
individuals to each square mile. In 1857 it had increased to 
691,222 individuals, or more than 94 to each square mile.

Massachusetts has no slaves.

Canals and Railroads.—The Middlesex canal begins at 
Charlestown and terminates at Boston, and terminates at Chelmsford 
on the Merrimac; the length is 27 miles; the width at the 
surface thirty, and at the bottom twenty feet; the depth is 
three feet. The highest level is 104 feet above Boston 
and nine above the center of New Bedford. The Merrimac 
and Massacusetts canal is about 15 miles long; the Black-
stone canal extends from Worcester (which is about half 
way between Boston and the Connecticut river) to Pro-
vidence in Rhode Island; the length is 44 miles, of which 
sixteen are in Rhode Island. The Hampden and Hampden 
and Hopedale bridge connects off the Connecticut 
river at Northampton, and unites with the Farming-
ton canal at the southern boundary-line of Massachu-
setts; the Farmington canal, which may be considered as 
its continuation, traverses the state of Connecticut 
in its whole breadth, terminating at New Haven. The 
whole line is about 80 miles long, of which about thirty are in 
Massachusetts.

Atlantic railroad, the first road of this description 
made in the United States, was constructed for the pur-
pose of transporting the granite of that town to the tide-
water; it is 3 miles long. A railroad intended to unite 
the town of Boston with Albany on the Hudson river in New 
York, has been projected for a very short time, to which 
many great public and financial interest, and at present 
and very far is under a great deal of public 
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Manufactures.—The manufactures of the state are more 
considerable than those of any other state of the Union; if 
it extent and population are considered. The most impor-
tant branch is the construction of vessels; but the manu-
factures of cotton and woolen goods, of paper, leather, 
and shoes, and the manufactures of paper, are among the 
most important. The state has thirty-three 

Commerce: Navigation; Fishing.

The commercial rela-
tions of this state, both with foreign countries and the 
other states of the Union, are extensive and important. The 
most important articles of export are dried and salt fish, 
and spermaceti oil, milled beef, flour, soaps, candles, leathers, 
and cotton goods. The imports consist mostly of colonial 
goods, brought from the West Indies, as coffee, sugar, 
molasses, indigo, iron, and hemp, together with the manu-
factured goods of England, especially silk, linen, and woollen.

The countries which principally visit are England, Russia, 
and Sweden; from the two latter countries they import great quantities of
The regular house of representatives was organized in 1635. The progress of the colony was very slow in the beginning, especially on account of the oppression to which the inhabitants were subjected during the reign of the Stuarts, before the time of the Commonwealth and after the Restoration. Though the Revolution of 1688 and the increase of the colony was thus promoted, its population in 1730 did not exceed 120,000 individuals. Since then it has improved rapidly. In the Revolution, Massachusetts took a leading part, by resisting the demands of the English government, and creating a military force. Hostilities were commenced by the battle of Lexington. It adopted a new constitution in 1780, and after Massachusetts, which up to 1819 formed a part of the state, took back each of the towns, the constitution was altered, and adopted time in 1820. According to this constitution the legislature consists of a senate and a house of representatives. The senate is chosen by the county, each citizen possessing land property to the amount of 60 dollars having a vote, but the number of the senators to be chosen by each county depends on its quota of taxes. The other house is chosen according to the population, each citizen possessing 50 dollars having a vote. In 1830 there were 20 senators and 170 representatives. There were no representatives in a governor, lieutenant-governor, and nine counties. The first two offices are chosen annually by the electors and the councillors by the joint ballot of the two houses from among the persons returned as senators. Massachusetts sends two members to the senate and thirteen to the house of representatives at Washington.

Education.—As generally in the United States, the education of the lower classes is an object attended to by state. For that purpose the State is divided into small townships, or separate corporations, of from five to seven miles square, and the number of these townships amounts to 3,000. But that the distance which children have to go to attend school may not be too great, each township is divided into smaller districts. In each a school is established, which is attended by the same number of persons as possible, within a town, and is conducted by a woman; but in winter it is visited by children from ten to fifteen years old. The children are instructed in orthography, reading, writing, English grammar, geography, and history, and the number of these schools amounts to 250; and in winter they are attended by more than 140,000, and in summer by upwards of 120,000 children. These common schools, as they are called, are aided by a tax upon the people. The number of private and town schools amounts to 500, but a great proportion of the school are small establishments, kept in the intervals between the winter and summer terms of the district schools. The larger institutions of this description are attended by the children of the more wealthy parents, who wish to give them a greater amount of useful knowledge. Their numbers amount to more than 60. Among the learned institutions is Harvard College at Cambridge, three miles from Boston, the best endowed institution in the United States; it has an botanical garden, a collection of minerals, and a library of 30,000 volumes. There are at present thirty instructors and about two hundred and thirty students. Other collegiate institutions are Williams College at Williamstown, with nine instructors and about one hundred and twenty students; Amherst College, with twelve instructors and two hundred and sixty students; the Theological Seminary at Andover, which has a deservedly high reputation, and the Newton Theological Seminary.

End of Volume the Fourteenth.